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California Department of Food and Agriculture

Agricultural Commissioners' Crop Reports

San Joaquin County

1951-1952

California County Agricultural Commissioners' Reports from the California Department of Food and Agriculture. This collection consists of annual crop and livestock data from each of the 58 California Counties. The collection covers 1915-1981; digitization of the rest of the collection is forthcoming.

This digitization project was funded by the Giannini Foundation of Agricultural Economics, http://giannini.ucop.edu/ .

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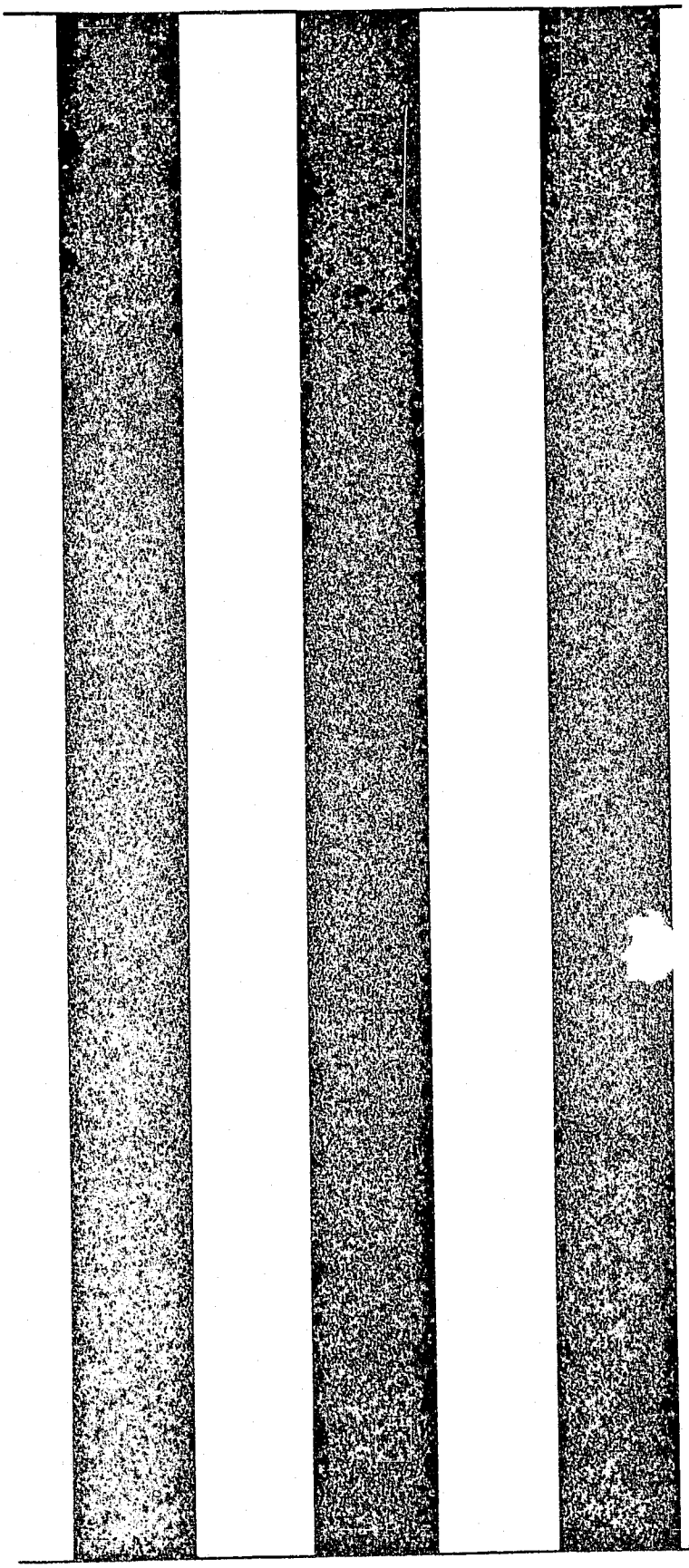

1951

1951
AGRICULTURAL REPORT

COUNTY OF SAN JOAQUIN

DEPARTMENT OF AGRICULTURE

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SAN JOAQUIN COUNTY

Department of Agriculture

AUSTIN E. MAHONEY
AGRICULTURAL COMMISSIONER

1868 EAST HAZELTON AVENUE
STOCKTON, CALIFORNIA

POST OFFICE BOX 1809
TELEPHONE 6-6806

TO THE STATE DIRECTOR OF AGRICULTURE AND

THE HONORABLE BOARD OF SUPERVISORS

Section 65.5 of the California Agricultural Code requires that the Agricultural Commissioner compile a report covering conditions, acreage, production, and value of the agricultural products of his county, and Section 65 requires that the Agricultural Commissioner keep a record of his official acts and make an annual report to the Director of Agriculture on the conditions of the agricultural interests in his county as to what is being done to control pests and also as to quarantines against pests. This is the eighteenth annual report published by this Department.

Approximately one hundred commercial crops are covered in this report, and for your easy reference they are segregated as to their commercial use wherever possible.

Acreages of permanent crops are reported in actual bearing acreage only, and other crops are reported in actual planted acreage. Production is reported in units commonly used in the marketing of crops commercially in this county. Prices are reported on a F.O.B. basis. Cost of production, harvesting, packing, and other handling costs should be deducted to arrive at a true farm value.

Copies of this report are sent to a number of persons in other states, to federal, state, and county agencies throughout the United States, and to an increasing number of organizations and individuals within the state. The members of this Department have made every effort to make this report as accurate as possible by checking our figures with every known source of reliable information.

I wish to express my sincere appreciation to all who have assisted my inspectors and deputies by furnishing necessary information to them which has made the compilation of this report possible.

Respectfully submitted,

Austin E. Mahoney

AGRICULTURAL COMMISSIONER

1/25/52

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ADMINISTRATIVE AND STAFF PERSONNEL

Stockton Office	Hazelton & B Streets	Stockton 6-6806
Austin E. Mahoney	Agricultural Commissioner	
Lester R. Brumbaugh	Chief Deputy Commissioner	
Lloyd V. Braghetta	Deputy Commissioner	
Mark A. Huberty	Deputy Commissioner	
Elna Benjamin	Bookkeeper & Stenographer	
Ralph A. Burlington	Quarantine & Standardization	
Thomas E. Cheatham	Weed Control	
Kenneth W. Jones	Quarantine Certification & Stockton Office	
Thomas H. Ladd	Seed Certification & Seed Inspection	
John R. Solari	Robert Island District	
D. V. Widney	Warehouse	

Lodi Office	Lodi City Hall	Lodi 8-1432
George Stipe	Deputy Commissioner	
L. F. Ashley	Victor District	
Marvin Switzenberg	Terminous & Thornton Districts	
C. W. Thompson	Elliott District	

Manteca Office	Manteca City Hall	Manteca 44
Nick J. Wolter	Supervising Inspector & Ripon District	
Walton Bauer	French Camp District	
Jess Grisham	Manteca District	

Tracy Office	Tracy City Hall	Tracy 1264
Aage R. Tugel	Deputy Commissioner	
Wilfred McDaniel	South Tracy District	

SPECIAL WEED CONTROL PROJECT

Richard DeVol	Inspector
Richard R. Raney	Inspector
Walter Beck	Mechanic

PLANT QUARANTINE

The protection of our agricultural industry through the prevention of the introduction of detrimental insects, plant diseases, noxious weeds and animal pests existing outside of this county is indispensible. The efficiency of natural geographical barriers have been reduced extensively by the greatly expanded interchange of plant material by modern methods of transportation. Consequently, the first line of defense against the introduction and dissemination of injurious agricultural pests must be sustained by methodic quarantine inspection of all plant materials or public conveyances entering this county capable of carrying these pests.

This involves the inspection at all post offices, vessels, freight, express, and truck line offices of all incoming and outgoing shipments of plant material and conveyances which may carry injurious plant disease, insect pests, or noxious weeds or animal pests. All such shipments are held for inspection by the common carrier. Most of these places are visited daily by inspectors, and containers of all shipments subject to quarantine are opened and examined for the presence of pests or prohibited material. Whenever shipments are found in violation, disposition of such plant material is either by treatment, destruction under the supervision of the inspector, or return to place of origin.

Since San Joaquin County has a great diversification of agricultural crops it is correspondingly vulnerable to a large array of plant diseases and plant pests. Under these circumstances a greater responsibility and demand has been placed upon this department to carry out the required quarantine duties.

The following table shows the amount of quarantine work completed for this year:

State Interior Quarantine Inspections

	By Truck	By Mail	By Boat or Rail	Total
No. of shipments passed	893	1,024	59	1,976
No. of items passed	13,036,956	201,167	70,503	13,308,626
No. of shipments rejected	105	5	2	112
No. of items rejected	340,372	11	79	340,462

State Exterior Quarantine Inspections

	By Truck	By Mail	By Boat or Rail	Total
No. of shipments passed	53	3,764	1,199	5,016
No. of items passed	263,478	154,990	109,720	528,188
No. of shipments rejected	3	49	600	652
No. of items rejected	6	935	11	952

QUARANTINE VIOLATIONS

State Quarantines	Number of Violations	Federal Quarantines	Number of Violations
Quarantine Proc. # 1	12	Federal Quar. # 1	1
Quarantine Proc. # 4	1	Federal Quar. # 3	4
Quarantine Proc. # 9	4	Federal Quar. #13	7
Quarantine Proc. #10	5	Federal Quar. #37	4
Quarantine Proc. #12	1	Federal Quar. #48	5
Quarantine Proc. #13	1	Federal Quar. #56	19
Quarantine Proc. #15	14		
Quarantine Proc. #20	4	B.A.I. Order #371	6
Quarantine Proc. #21	3		
Agri. Code Sec. #115	38		
Agri. Code Sec. #118	1		
Agri. Code Sec. #119	1		
Agri. Code Sec. #124	106		
Agri. Code Sec. #125	575		
TOTAL	766	TOTAL	46

Ship Inspections

This year 77 ships were inspected, a decrease of 31 percent under last year. An examination was made of each ship's cargo, food stores, baggage, officer's and crew's quarters, and garbage for injurious pests or quarantine law violations. Of the 77 ships that were checked, 19 were found having contraband material aboard. Most of these quarantine materials consisted of plant foods, plants, and foreign meats. The plant food, such as fruit and vegetables usually constituted part of the ship's stores, which were then sealed in lockers or refrigeration rooms while the ship was in port. Most of the cargoes quarantine consisted of equipment having dirt adhering to the sides. Each piece of equipment was thoroughly washed before being released. In addition, 12 ships which had foreign meat in storage lockers were sealed to prevent the possible introduction of the dreaded Hoof and Mouth Disease.

Certification

Another function of plant quarantine is that of certification as to pest conditions or pest treatments when such is officially required on out-going shipments. In addition to certification of shipments, shipping permits and certificates of inspection of nursery stock after thorough inspection were placed on interstate shipments.

The following certificates were issued and fees received:

Sanitary Inspection Reports - - - - - -	42
Potato Fumigation Certificates - - - -	173
Fees Received - - - - - - - - - - - - - -	$537.50

ORIGINAL DEFECTIVE

PLANT DISEASE AND INSECT SURVEY

The function of this work is to conduct surveys of crops, properties, and miscellaneous plant materials for new pests that may have been introduced into this area. In the event a potentially serious pest is found, immediate eradication or control measures are taken to prevent further spread. To determine the extent of spread of these insects or plant diseases, survey work by trapping and visual inspection is carried out. The following is a summary of the most important pest surveys conducted by members of this department.

PLANT DISEASES

Grape Mosaic (Virus) The introduction of contaminated experimental nursery stock made necessary the inspection of properties where this rootstock had been planted. Four diseased vines were found this year in one location and these were destroyed by burning.

Onion Yellow Dwarf (Virus) Survey work done on this pest was combined with two other diseases of onion, bulb nematode and smut. No characteristic symptoms of this disease were found present in the onion fields checked.

Peach Wart (Virus) Survey work was discontinued with the completion of the third survey in 1950 with negative findings. However, the orchard in which one tree with infected fruit was found in 1947 was inspected at pre-harvest time this year with negative results.

Chestnut Blight Endothia parasitica This is the seventeenth year eradication work has been carried on since the discovery of this pest. This year four infested trees were found in two orchards and were destroyed by burning to prevent further spread.

Onion Smut Urocystis cepulae No official survey was conducted this year because this disease was considered of minor importance. Observation of approximately twenty acres of onion seedlings revealed no new infested properties.

Potato Rot Nematode Ditylenchus destructor Examination was made of four packing sheds and refuse from the grading machines in the potato growing areas. No evidence of potato rot nematode was found.

Bulb Nematode Ditylenchus dipsaci In the spring approximately twenty different ranches having a total of 200 acres were inspected to determine the extent of this pest. Samples of suspected plants were taken and submitted for laboratory analysis. Four properties were found to be infested with this nematode.

Strawberry Spring Dwarf Nematode Aphelenchoides fragariae In 1947 one property was found infested with this pest. Since that time no further evidence of this pest has been found; thus survey work was discontinued in 1951. The owner of this one infested property destroyed all strawberry plants this year by plowing. The hold notice on the land has been removed.

Western X Disease (Virus) and Yellow Curl of Peaches (Virus) — In cooperation with the state plant pathologists a survey was conducted in this county to determine the presence or absence of these pests. 302 trees located on twelve properties were found to be infested with Western X. A total of 78 properties with 127,963 trees was inspected in San Joaquin County. All infected trees were confirmed by State Pathologists and marked for further observation. Fortunately, no yellow curl of peach has been found within this county.

INSECT PESTS

Colorado Potato Beetle Leptinotarsa decemlineata — Randomized checks were made in the large scale potato producing areas to determine whether or not this pest could be found. Negative results were obtained.

European Corn Borer Pyrausta nubilalis — The finding of live borers several times this year in corn cars shipped in from the middle west prompted a survey of corn fields near the area where mills receive bulk corn from infested states. Inspection was made of 22 properties having a total of 30 acres of corn. No corn borer was taken and no evidence of injury was found in the growing corn.

Japanese Beetle Popillia japonica — Fifteen traps were used in five locations for this insect from May 15 to October 15, 1951. The regulation U.S.D.A. scouting traps were used with a bait of ethol-eugenol which was furnished by the State Department of Agriculture. These traps were located at strategic points which represented the best possibilities for entry: around airfields, transportation centers, and an army base. No Japanese beetles were taken.

Mexican Bean Beetle Epilachna varivestis Muls. — Representative checks of bean plantings throughout the county were made to ascertain whether or not this serious pest of beans had been introduced from infested areas. No beetles or characteristic damage was discovered.

Naval Orangeworm Myelois venipars — Survey work has been discontinued since this insect was found in a number of other locations within the state. However, no appreciable spread of the naval orangeworm was observed in this county for the 1951 season.

Cherry Fruit Flies Rhagoletis cingulata and Cherry Fruit Flies Rhagoletis fausta — The finding of cherry fruit flies last year in the northern part of the state stimulated the State Department of Agriculture to conduct surveys in the main cherry producing counties. Traps and baits were furnished by the department as part of a state-wide program. Detection traps were hung in cherry trees approximately a mile apart in fifty different orchards throughout the county. The contents of the traps were collected and sent to Sacramento for determination. No cherry fruit flies were found.

Oriental Fruit Fly Dacus dorsalis It is a well established fact that the oriental fruit fly now infests numerous commercial crops in the Hawaiian Islands and could be highly destructive to California crops. To detect any initial infestations in San Joaquin County, 57 traps were set throughout the county during the summer for a period of five months. These traps were visited weekly and the contents were sent to Sacramento for determination.

Sweet Potato Weevil Cylas formicarius elegantulus During the harvest season, three packing houses and several fields were inspected for this insect. No sweet potato weevils were found and no damage characteristic of this insect was found.

NURSERY INSPECTION

Inspections are made of all nurseries in San Joaquin County in order to ascertain that legal standards are being met regarding insects, plant diseases and noxious weeds. Since shipments are made to all parts of the county and to points outside of the county, the ideal place to destroy the plant pests is at the nurseries.

Nurseries (Ornamental) The inspection of nursery stock and premises in thirty-six nurseries was completed the early part of the year and did not reveal the presence of any new pests. Pests found were controlled to meet the requirements outlined in regulations governing the issuance and use of inter-county nursery stock certificates under authority of Section 123.56 of the Agricultural Code of California. All pests found were common species of aphids, scale, thrip, spider, snails, etc. It was necessary to issue a hold notice at one nursery which had dichondra infested with nematode.

Nurseries (Tree) During the winter months when the planting of fruit and nut trees is in progress, extensive inspection work is necessary. The young trees are closely inspected for injurious plant pests such as oak root fungus, nematode, and crown gall. Under our county ordinance, the roots of fruit trees are examined for split roots, crooked roots, dead roots, and freezing damage. Any plants that do not come up to specifications or are infested with pests are rejected.

Nurseries (Tomato) During the months of April, May and June extensive inspection work was conducted on all tomato beds in the county. This year it was necessary for this department to reject 16,000,000 nematode-infested plants to prevent spread to soil free of nematode. Also, one court case resulted in a $150 fine because the owner moved tomato plants that had been rejected and were under "Hold Notice". Once the nematode becomes established, it is impossible to rid the land of this highly undesirable pest. The number of plant rejected during the past year for nematode was substantially higher than the preceding year.

TOMATO INSPECTION FOR 1951

Plant free from nematode - - - - - -	80,000,000
Plants infested and rejected - - - -	16,000,000
To	
Total number plants inspected - - -	96,000,000

ORCHARD AND FIELD INSPECTION

Inspections are made of orchard and field crops for the purpose of determining the extent of damage by established insects and plant diseases. Pest control methods are noted as are materials in current use and the advantages which such materials may have over those formerly used. Infestations are inspected periodically to observe control and if control measures in use are not adequate, more stringent measures may be enacted, especially when there is immediate danger of the pest spreading to adjoining properties.

Periodic inspections of orchards and field crops are also necessary to guard against any new pest that may have been introduced into the county, and if present, immediate steps for the eradication or control may be undertaken. In order that such measures will meet the highest degree of success, field observations of current pest control operations must be observed. Records are kept on a monthly basis of the various pests causing damage.

Following is a brief summary of some of the important pests to crops found in this county:

INSECTS AND MITES ON FRUIT AND NUT CROPS

Codling Moth Carpocapsa pomonella This major pest of walnuts caused very little damage where growers follow a recognized spray program. The use of better equipment, material, and proper timing of spraying were the main factors which contributed to the small percentage of worm damaged nuts this year.

Walnut Aphis Chromaphis juglandicola In the early summer a heavy population of aphis occurred throughout the walnut producing area. Many orchard men were compelled to spray, dust or smoke their trees several times to combat this pest.

Two Spotted Spider Mite Tetranychus bimaculatus Only a trace of leaf damage was observed from this mite this past season. Climatic conditions, numerous beneficial insects, and a number of other factors were responsible for the low percentage of damage.

Black Scale Saissetia oleae This scale was prevalent in the majority of olive orchards throughout the county. There was a considerable increase in the black scale over the previous year in several orchards.

San Jose Scale Aspidiotus perniciosus Increased infestations were observed in many cherry and peach orchards. This build up can probably be attributed to the inability of growers to apply dormant sprays last winter due to prolonged wet weather.

Almond Mite Bryobia praetiosa This mite showed up early; however, no extensive damage was experienced. The majority of the growers was able to spray, which kept the mite population similar to the previous year.

Grape Erinose Mite Eriophyes vitis A fair number of these mites showed up early in the spring in a number of vineyards; however, the damage to vineyards was negligible.

Grape Bud Mite Eriophyes vitis This mite was scattered throughout the main grape districts. Apparently, only a few vineyards suffered any losses.

Grape Phylloxera Dactylosphaere vitifoliae As was the case in 1950, this insect continues to be a problem in many vineyards. Growers are becoming more conscious of this insect each year due to its devastating effect on grapevine roots. Several new infestations were discovered during the year.

Grape Leafhopper Erythroneura comes This insect was evident in vineyards as usual. Growers kept the leafhopper population to a minimum by their regular dusting program of sulfur and DDT.

Pacific Mite Tetranychus pacificus Growers experienced only moderate damage this year from this mite. The mite was late in developing; thus the grapes had matured extensively before any leaf injury developed.

Beet Leafhopper Circulifer tenellus During the season while the beet leafhopper was active, weekly counts on this insect were taken and submitted to the State Department of Agriculture to aid them in their control program. The beet leafhopper population was noticeably lower as compared with the previous year and did not present any major problem this year.

Peach Twig Borer Anarsia lineatella This insect, although present, caused very little damage to orchards this year. Growers found only light infestations in their orchards.

PLANT DISEASES OF FRUIT AND NUT CROPS

Brown Rot Sclerotinia fructicola The mild, dry weather which prevailed during the past season inhibited the development of brown rot in this area. Infestations of this fungus were light, corresponding to conditions of the year before.

Peach blight Coryneum beijerinckii Only light infestations of this disease were observed in orchards of this county. Consequently, no damage occurred.

Peach leaf curl Taphrina deformans Very little evidence of this fungus disease was present this year. This may be attributed largely to the dry spring weather.

Oak root fungus Armillaria mellea Each year new infestations are discovered; this year was no exception. A number of growers are combating this fungus by treating infested areas with carbon bisulfide.

Walnut blight Phytomonas juglandis Again this year the walnut blight was very light. Growers enjoyed a dry spring which held this disease down.

Cherry diseases (Virus) Cherry growers have been faced with the introduction of a number of cherry diseases of a virus nature in recent years. As a long-range improvement program, the State Department of Agriculture is carrying out a program of selecting clean bud wood.

INSECTS AND MITES OF VEGETABLE AND FIELD CROPS

Tomato mite Phyllocoptes destructor This pest of the tomato crop first appeared on July 19, 1951. By the first of August, damage to the foliage was evident in a number of fields. The mite continued to build up especially where growers had neglected to follow recommended control programs for this area. Growers treating their fields properly suffered only small damage; however, damage as a whole was unusually high.

Corn earworm Heliothis armigera No trouble of importance was experienced this year with this insect in tomato crops, for the timely application of the insecticide DDD (Dichloro-dephenl-dichloroethane) gave splendid results; however, sweet corn fields were hit as hard as ever where control was not practiced. DDD & DDT in combination gave good control of this insect.

Tomato hornworm Protoparce quinquemaculata and Tobacco hornworm Protoparce sexta Were light this year. Those that did appear were effectively controlled with applications of DDD in commercial plantings.

Darkling Ground Beetle (Various species) Were quickly controlled by DDT, DDD and poisoned bran. Infestations were most noticeable in the early spring resulting in some damage to seedling tomato plants.

Flea beetles (various species) These insects were most prevalent in the early plantings of tomatoes. No damage occurred where control measures were carried out.

Grasshoppers (various species) Extensive survey work was carried out in areas most prone to grasshopper infestations. About 50 fields of alfalfa and clover were examined for the the hatch of grasshoppers before outbreaks occurred. Growers with fairly heavy infestations were advised to strip cut and treat with an insecticide.

Cutworms (various species) Asparagus growers experienced some trouble with this pest in their fields. Several celery seed beds suffered some damage. Damage as a whole was light.

Celery leaf tier Phlyctaenia rubigalis Damage to celery by this insect was negligible.

Celery looper Anagrapha falcifera Infestations of this insect were light and practically no damage occurred in any of the celery fields.

Western yellow-striped armyworm Prodenia praefica This insect was virtually non-existent this year. This was a decided change over the last two years when heavy infestations occurred in a number of locations within the county.

Thrips (various species) These insects were general in beans, tomatoes, onions, and occassionally in fields of asparagus. No heavy losses were sustained due to this insect, but production in a few fields was lowered.

Serpentine leaf miner Liriomyza pusilla Leaf damage occurred in a number of tomato and bean fields. The extent of damage is difficult to determine. No control measures were carried out for this insect.

Aphis (various species) The aphis population was exceptionally high this year. Heavy flights of aphids carried a virus disease into many grain fields this year. Growers with direct seeded fields of tomatoes were attacked by heavy numbers of this insect. Also, other truck crops and ornamental plants in residential areas suffered from these pests.

VEGETABLE AND FIELD CROP DISEASES

Root knot nematode Heterodera marioni Apparently root knot nematode is being spread more each year, since newly infested land appears each year. However, the rate of spread has been substantially retarded by inspection of nursery plants both crop and ornamental. Many people are recognizing the nematode problem and carrying out precautionary measures to prevent the spread of this pest.

Bacterial Canker Phytomonas michiganensis This bacterial organism was found infesting tomato plants in fifteen fields this year. Growers have been cautioned not to replant old tomato beds this coming year that have been contaminated by this destructive disease. Although more fields were found infested with this disease this year, no serious losses resulted to any grower, for diseased plants were spotted in fields.

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Western yellow blight (virus) Only a trace of this disease showed up in the tomato fields this year. Consequently, no damage occurred to tomato crops from this virus.

Tomato mosaic disease (virus) The effects of this disease were evident in a number of fields; however, infected tomato plants outgrew the damage from this virus in most cases. Thus, very little damage resulted from this virus.

Spotted wilt (virus) Tomato fields throughout the county were found to be spotted with this disease. A few fields suffered production losses. Growers were encouraged to control the thrips that are carriers of this virus. This disease seems to be increasing each year.

Fusarium wilt & Verticillium wilt These two fungus diseases were evident to a certain extent in some tomato fields with some damage occurring. Where tomatoes are grown on the same land several years in succession, this disease increases.

Western celery mosaic (virus) No serious losses were experienced from this disease this year. Infections were light throughout celery-growing areas of the county.

Aster yellow (virus) This virus disease, carried by the six-spotted leafhopper, Marcrosteles divisus, stunted a small percentage of celery grown. The Golden varieties of celery suffered greater losses than other varieties.

Potato diseases (various) Since growers are now using certified seed potatoes, losses from the various diseases of potatoes are negligible.

Barley yellow-dwarf (virus) The unusually large flights of aphids last spring were probably responsible for the sudden wide development of yellow-dwarf disease in the grain producing areas. The abundance of aphids, together with most grains being very young in growth at this time, undoubtedly made the damage from this disease more severe. By May 1, 1951, moderate to severe stunting of the crop was observed in the majority of the grain fields.

PEST CONTROL OPERATIONS

Successful farming operations in San Joaquin county are very much dependent upon proper pest control operations. Numerous insecticides and herbicides have been developed in recent years to meet the needs of intensive farming operations. However, the proper application of these materials has been complicated by the fact that many of these materials are highly injurious to crops, livestock, bees and also to humans. By popular demand, numerous rules and regulations have been enacted by the State Department of Agriculture to protect the agricultural industry against the improper application of hazardous chemical insecticides and herbicides.

INSECTICIDES

Near the end of last year new regulations were enacted on

injurious materials which included some of the most poisonous insecticides in common use. First of all, a permit must be obtained from the Agricultural Commissioner's office to use these materials. In this manner, any potentially hazardous applications of these poisonous insecticides could be stopped. It also provided an opportunity to discuss in detail safety precautions, particularly for the operator. It has been found in a number of cases that the applicant had only a meager knowledge of the fundamental safety precautions. Whenever there is doubt in the advisability of the use of these insecticides, field inspections were carried out. In this manner, by installing a greater sense of responsibility upon the applicant, greater protection was maintained to neighboring crops and livestock.

The following is a list of the injurious materials with the number of acres treated and the number of permits issued:

	Acres Treated	Permits
Arsenic materials	101	3
Tetraethyl pyrophosphate (TEPP)	3,539	119
Parathion	1,822	51
Ethyl-para-nitrophenyl (EPN) thionebenzene-phosphonate	813	32

HERBICIDES

Injurious herbicides which include 2,4-D and related compounds were widely used in San Joaquin county during the year, although there are numerous restrictions in its use. Grain farmers and others, with the exceptions of those within the boundaries of the hazardous area in the northern part of the county, relied upon 2,4-D extensively for weed control. During the year 176 permits were issued by the Agricultural Department. Again, each applicant for a permit was instructed in the precautions to be observed in the application of this material. Wherever there was doubt in the advisability of issuing a permit, either field inspections were carried out or other appropiate restrictions entered upon the permit.

COMMERCIAL PEST CONTROL OPERATORS

Although many farmers carry out their own pest control operations on their farms, many are dependent upon commercial operstors to treat pests with chemical materials. During the year, 63 operators registered with this department with intentions of carrying out commercial work in San Joaquin county. Of this number, 31 were qualified in aircraft operations. Throughout the year, operators were required to send in monthly reports giving information of all work done. In the use of injurious herbicides and insecticides, commercial operators were required to obtain a written authorization from the grower in order to obtain a permit. Furthermore, commercial operators were required to keep the Agricultural Department informed as to their operations by submitting monthly reports.

Acres treated in San Joaquin County by commercial operators:

Plant Diseases and Insect Pests		
Fruit Tree Crops	5,430	
Field Crops	25,259	
Vegetable Crops	82,353	
Vineyards	66,456	
Nut Tree Crops	3,745	
		183,243
Weed Control		
2,4-D	18,214	
Contact Material	3,441	
Soil Sterilant	272	
		21,927
Soil Fumigation		
DD	972	
EDB	444	1,416
Total Acres Treated		206,586

HOUSEHOLD AND GARDEN PESTS

Numerous calls are received each day by this office from persons requesting information for the control of insect pests either inside their houses or in their gardens. Many times the identification of the insect is not known by the person calling or only a general description of the condition of the plant can be given by the person. Under these circumstances it is necessary to call on the party in question, and only after a positive identification can proper control measures be recommended. These calls are necessary not only to assist the party involved, but it is never known when a new pest to this county will be found that is of a serious nature to agricultural crops. No new plant diseases or insects were found this year. The majority of pests identified in the home were of the common type, such as storage insects, termites, carpet beetles, fleas, and the common insects attacking pets. Those found in the garden were various specimens of scale insects, ants, lawn moths, mildew, molds, etc.

STANDARDIZATION

Fruit, Nut, Vegetable, Egg and Honey

This type of work has to do with the inspection of eggs, honey, walnuts, and thirty-two of the important fruits and vegetables, to see that they comply with the specific standards specified in the Code. It also includes all other fresh fruits and vegetables, as they are also regulated as to serious decay and insect damage, and all dried fruits regulated as to deception and mislabeling.

This year the enforcement of the Standardization Laws was carried out by all members of the department in addition to performing their other duties. During the shipping season, a number of crops demanded a large number of inspectors to be on the job. Since commodities were delivered throughout the day and into the late evening to re-distribution centers, where it is more practical to maintain inspections, many hours of overtime were necessary to properly inspect this produce to maintain higher standards of quality and pack, and further to protect the consumer from fraud, mislabeling, and deception of commodities. This procedure also assisted the truckers and shippers in getting their produce into the markets without unnecessary delay by further inspections at State operated highway inspection stations.

Marketing Orders This is the second year we were requested by the Peach and Plum Marketing Order managers to undertake inspection of their commodities during the 1951 season. These marketing orders required stricter regulations upon these two commodities and increased the work load for the standardization inspectors. Certificates were issued throughout the year on each lot of freestone peaches and plums meeting the requirements of the Marketing Order.

Stockton's Marketing Center The morning wholesale market opens at 5:00 A.M. each morning and operates the year around so that farmers from all over the county can bring in their produce to be sold to retailers. To maintain fruits and vegetables of high quality, one inspector is assigned to the morning market to enforce standardization requirements. Maximum activity at the morning market is reached during the summer months at the height of the fresh fruit harvest.

The afternoon market starts operation at the beginning of the cherry season and continues on through the fruit producing months until fall. The bulk of these fruits and vegetables are transported to Los Angeles and San Francisco morning markets. An inspector is assigned to tour periodically all of the loading docks to see that fruit and vegetable standards are maintained. The majority of loads of produce are certified before leaving for their final destination.

Wholesale Markets and Retail Stores It is our policy to make daily inspections at all wholesale establishments since a number of commodities are imported into the county from other parts of the state. Furthermore, in order to assure the consumer produce of the highest quality, fruit and vegetables are periodically inspected at retail stores.

Fruit, Nut and Vegetable The quality of produce grown in San Joaquin County was very good this year. Weather conditions throughout the year were not inducive to the development of mold, rot or decay which eliminated many of the problems arising in enforcement of the standardization law.

Throughout the year in San Joaquin County, fresh fruits and vegetables are harvested and placed on the market. This requires constant inspection to insure that produce is in conformity with standardization requirements.

The first crop of major importance in this county is asparagus. There is a large number of packing sheds and numerous shipping points which require continual inspection. The beginning of the season was very slow due to cold weather. Some frost damage appeared in market "grass". From this point on, violations were the average run which was mostly deceptive packs.

The cherry harvest that follows asparagus is also a major crop of this county. This year some lots were rejected due to excess cracking, splits, sponginess and abnormal softening. This was caused by rain and wind shortly after the harvest of cherries began.

Throughout the summer months, freestone peaches for the market required continual inspection. Some lots were rejected for excess in tolerance for over ripeness and bruises. This work was carried out along with inspection for compliance of fresh peaches to Marketing Order.

The grape crop also requires considerable inspection work. However, this year only a few rejections were necessary on lots of grapes that did not comply with the standardization law.

A large portion of the celery crop is shipped to eastern markets. This celery is Federal State Inspected and has caused no trouble under standardization law.

A certain amount of trouble developed in the packing of potatoes. This has probably been intensified due to high prices and higher requirements for grade standards on potatoes. All defects generally associated with potatoes have been found in a number of lots of potatoes.

During the harvest of sweet potatoes in the southern part of the county, several packing sheds are checked daily. This year very little trouble was experienced since the quality and size were good.

Tomato pack for local consumption in some cases were not in conformity with standardization requirements. An excess amount of over-ripe, growth cracks and mold was found. Also some packs did not have proper markings. There was no trouble with eastern shipments of green tomatoes which were Federal State Inspected.

Watermelons also from the southern section of the county require continual inspection. An inspection station is maintained in this area throughout the season. This year considerable immaturity, rine rot or mosaic was found.

Eggs During this year 90 premises were inspected which included grocery stores, egg markets and any other place where eggs were offered for sale. A representative sample of 115 lots representing 10,774 dozen eggs were candled for grade, checked for size, or other defects. Of the eggs inspected 2,336 dozen were found in violation of the Standardization Egg Law.

Honey Throughout the year, a number of calls have been received by

this office for general information concerning honey grades and marketing requirements.

Grapes for By-Products The Agricultural Code under section 771 provides that wineries purchasing grapes on a sugar content basis shall have an official test made on each load delivered. This year nine wineries required the services of 15 authorized inspectors from this department. There were 50,424 soluble solids tests made and 22,668 certificates of inspection issued at these wineries. The total cost for this type of work was $9,279.39 which was paid by the different wineries requiring this service.

Certification The certification of agricultural produce represents one of the major activities of this department in standardization work. This is exemplified by the fact that 2,665 certificates were issued during the year. The certificate is of considerable importance not only to facilitate movement of produce past state inspection stations, but it insures the recipient at destination produce that meets minimum standards of the California Standardization Law. This service is of special importance to growers and shippers alike in this county since there is a heavy export of fruits and vegetables grown in San Joaquin County.

Standardization Statistics

	1950	1951
Number of Containers Inspected	7,034,462	8,220,458
Certificates Issued	3,716	2,665
Fees Received	$2,193.70	$5,612.92
Violation Notices Issued	411	487
Number of Containers Rejected	24,760	19,387
Court Cases	1	3
Amount of Fines	$25.00	$265.00

RODENT AND BIRD CONTROL

Ground Squirrels (Citallus species) During the year, 3,003 calls were made on squirrel control work by members of this department. In many cases not only were properties inspected and information given on the control of squirrels, but inspectors demonstrated the use of equipment and precautions warranted in the handling of poisonous or inflammable rodenticides. The campaign against the ground squirrel is continuous throughout the year. Inclement weather is the only factor in any suspension of field work. During the months of March, April, and May the most effective period for ground squirrel control in this area, operations reach their peak. On large projects the Sheriff's Department supplies county prisoners as low-cost laborers who work under our supervision.

Gophers (Thomomys species) The gopher continues to be a nuisance to both residential and rural areas. The widespread trouble with this rodent has been evident by a number of requests for information on the control of this pest. The main type of service performed by this office throughout the year was educational whereby instructions on placing out traps, baits and various other methods used were given.

Rats (Rattus species) Unfortunately, rats frequent both farm and city dwellings. Numerous residents have come to this department for help to control these vermin. The new poison warfarin has proved to be exceptionally effective in the control of rats, much to the relief of many farmers and city residents. This material was prepared in ready-to-use baits by this department and sold at cost to persons upon request.

Field Mice (Microtus species) This vole appeared in large numbers in a number of fields in San Joaquin County this year. This represented the heaviest infestation in the history of the county. These rodents multiplied to proportions far in excess of normal and constituted a very destructive agent in alfalfa and clover fields. It was found that oat groats treated with zinc phosphide was the best bait for the control of these mice. During the season 6,076 pounds of poison bait was prepared by this department for farmers with infested property.

Muskrat (Ondatia zibethica) This aquatic rodent has appeared in several localities in the county. It apparently is more prevalent in the delta area where a more desirable habitat is located. These rodents are under observation to keep a check on their progress lest they become a problem in irrigation ditches by burrowing holes.

Coypu (Myocastor coypus) This large aquatic rodent commonly called nutria, has been found adjacent to the southern boundary of San Joaquin County. This year a survey was made of the San Joaquin River and its tributaries in this county. The results of the survey were negative. It is a very good possibility that this rodent, once established, could cause considerable damage to banks of irrigation ditches.

Rabbits (Sylvilagus species & Lepus species) During the year, a few requests were made at this office for advice on the best way to control rabbits which were causing some damage to crops. Previous experience has proved the organized rabbit drive to be the most effective weapon against this pest.

Bird Control A number of complaints have been received by this department concerning damage to crops by birds. Trouble with the hornlark was rather extensive in southwestern portions of the county. Young pinto bean plants, tomato plants, and onion seedlings were attacked by these migrating birds. In one field of seedling tomatoes, 40 acres were destroyed by the hornlark. Bird poison used was not successful; thus farmers kept them out by shooting with various degrees of success. A number of complaints were filed against the sparrows as a general nuisance around barns, garages, and in gardens. In some cases, control measures with poisoned baits were used for sparrows. However, results varied and in many cases methods to scare the offending birds were employed.

WEED CONTROL

Since weeds represent one of the most undesirable competi-

tors of agricultural crops, it has been the policy of this department to help to promote in every way possible an effective weed control program throughout the county. Over the last few years, farmers have shown an encouraging increase in interest in weed control work, especially on the control or eradication of perennial noxious weeds. Many farmers have come to realize that valuable farm land is being wasted wherever such weeds are allowed to grow. Furthermore, if effective control work is not undertaken, these infestations will most likely spread and envelop more productive land causing even greater losses.

Special Weed Control Program Since 1947, a special weed control program has been under way in this county. This year farmers have carried on more extensive control work than ever before on noxious weeds. Foremost under suppression and eradication are perennial noxious weeds. Much of this work is carried out during winter months with the application of soil sterilants.

To further promote this program, county spray rigs have been made available free of charge to farmers who do not have their own equipment. County spray rigs have patrolled county and state roads throughout the growing season for weed pests. To supplement this special weed control program, farmers in a number of cases are able to secure partial financial help through the Production Marketing Administration on cost of material and labor.

Educational Work To develop an interest in this weed control program by farmers, it has been necessary to carry on an extensive educational program. This has been accomplished by disseminating information through the radio, newspapers and local journals on the most effective methods of noxious weed control. Also, where applicable, farm meeting lectures on this subject were given.

County Equipment The recognition of the fact that many farmers do not have the necessary equipment to treat infestations of noxious weeds on their property, the county through this department has made available powered spray rigs to apply the herbicidal materials. The farmer pays for the operator's wages while on the job.

ANNUAL WEEDS

Puncture Vine Tribulus terrestris The most offending of annual noxious weeds within San Joaquin County is puncture vine. This pest has infested a large part of the southern portion of this county. In contrast, the northern portion of the county is relatively free of this pest. Unfortunately, this weed has obtained a toe-hold on some of the roadsides and on some private property in this area. Special effort has been expended to control the puncture vine and prevent further spread in areas of relatively light infestations.

Yellow Star Thistle Centaurea solstitialis This annual weed which has proved to be of special nuisance in pasture lands is more prevalent in the north and less evident in the sourthern portion of the county. Farmers have also found it to have the provoking habit of establishing itself in difficult to get at locations such as fence lines and ditch banks. Fortunately, control of this weed is much easier as compared with Puncture Vine

since it does not produce viable seed in such a short time and its presence is more evident by its tall growth.

Milk Thistle Silybum marianum Has proved to be disagreeable in some localities within the county especially when it acquires its mature growth. A number of farmers have requested that this weed be controlled on roadside infestations.

These annual weeds are controlled effectively with contact sprays. Control work starts in the early spring for milk thistle and yellow star thistle. As the season advances to early summer, puncture vine makes its appearance. In each case, control work is started as soon as it is possible to detect their presence. At this point, maximum kill is obtained with minimum cost.

PERENNIAL WEEDS

Johnson Grass Sorghum halepense Has proved to be the most widespread and most troublesome to farmers. Throughout the year, 807 infestations were treated with borax-chlorate spray material. Of this number, 250 infestations were eradicated. Follow-up work will continue on remaining infestations. Almost without exceptions, more than one treatment was required to obtain the desired results. The importance of follow-up work cannot be overemphasized for this generally is the determining factor in the degree of success in controlling weeds.

Russian Knapweed Centaurea repens There are 46 infestations in the county. Of this number, 8 have been eradicated.

Canada Thistle Cirsium arvense This noxious weed is found in only one location within the county. Fortunately this plant does not produce viable seed since it is represented by the male sex only. It spreads either by natural root expansion or cultivation. Treatment of this infestation with 2,4-D was continued this year.

Horsenettle Solanum species Only a few small infestations of this weed occurred in this county. Of the 4 infestations found, 2 have been eliminated.

Hoary Cress Cardaria species Has proved to be one of the most difficult of the perennials to control. With persistent effort, 6 infestations out of an original 32 were eliminated.

Pepper Cress, Perennial Lepidium latifolium This deep rooted perennial is not of wide distribution in this county. During the year, 3 out of 5 infestations have been eradicated. One infestation was eliminated this year with soil sterilant and several others were treated with 2,4-D.

Klamath Weed Hypericum perforatum Out of 4 infestations 2 have been eliminated by the use of soil sterilants. The Klamath Weed Beetle was released on one small infestation of this weed.

Wild Heliotrope Heliotropium curassavicum Has been found to be a nuisance, especially in vineyards. Carbon bisulphide has been used on 3 small infestations in vineyards without regard to the vines. Results have been very good.

Bermuda Grass Cynodon dactylon Infestations, found in locations that would be adverse to agricultural interest, have been treated. Of the 34 infestations treated with Borax-Chlorate sprays, 16 have been eliminated.

County Roads It is an established fact that roadways are notorious for spreading weeds onto adjoining property. To suppress such infestations before they have the opportunity to spread, it has been the duty of this department to patrol all county roads at intervals with power spray rigs and treat these infestations.

To prevent such weeds as Yellow Star Thistle and especially Puncture Vine from going to seed, spray rigs patrolled each road at 2 to 3 week intervals. An additional spray rig was added this year for this work.

During the winter months perennial noxious weeds were treated with soil sterilants. Results from this work have been very encouraging. A number of infestations have been eradicated.

State Highways In order that all roadsides may be included in the county weed program, an agreement has been made between the State Highway Department and this Department that this Department patrol the 207 miles of state highways in San Joaquin County for noxious weeds. The program on State Highways has been carried out in the same manner as for county roads.

Railroads Five of the six railroads within San Joaquin County have agreed to control noxious weeds on railroad right of ways. This control work will be carried out with our equipment and our crews. The costs of the material and the labor will be paid to the County Department of Agriculture by the railroad. However, negotiations are still pending with the one railroad. It is possible that they, also, will request us to do the work on their right of ways. In the past, railroads have been chiefly interested only in vegetation growing between the tracks and a narrow strip on each side, but very little work has been done on noxious weeds found growing between the railroad track area and their right of way fence line. The work that will be done by our equipment will be on the entire railroad right of way and will include such weeds as Johnson Grass, Russian Knapweed, Hoary Cress, Perennial Pepper Cress, White Horsenettle and any other weed of a serious nature.

Materials Used In Weed Control Program The treatment of the annuals, puncture vine and yellow star thistle were sprayed with oil emulsion composed of 10 to 30 gallons of oil, one quart of dinitro general, detergent and water to make a 100 gallon mix. Larger proportions of oil were used during the cooler weather conditions and was decreased to a minimum during the warm summer days. Also, borax-chlorate compound was used extensively as a contact and weed sterilant material on these annuals with good results.

The treatment of perennial noxious weeds was with sodium-chlorate and borax-chlorate, the borax-chlorate was used exclusively by our spray crews. Most of this work was carried out during the fall and winter months. Satisfactory results were obtained by applying this material at approximately 15 pounds per square rod.

Selective and General Weed Spraying Selective weed spraying is steadily gaining popularity in eliminating weeds from such crops as grain, rice, celery, carrots, and alfalfa. Commercial pest control operators and individual farmers owning their own spray equipment have sprayed thousands of acres of crop land in this county this year. Many of these selective weed spraying practices have eliminated cultivation for weed growth entirely. General weed spraying has been steadily increasing in popularity because weeds growing in areas where cultivation was difficult or impossible could be eliminated through chemical treatment. Weeds growing along fence lines, ditch banks and on cultivated areas were found to harbor insects as well as a means to disseminate weed seeds into crop lands. Controlling weeds of this nature has proved to be profitable to the farmer. In a number of cases, unsightly weeds growing in yards around packing sheds and other buildings in farming districts have been treated with soil sterilants, reducing fire hazards and the cost of hoeing. The economy of properly controlling weeds whether they be of noxious nature or just general vegetation, has been proved time and again and the farmers, land owners and other agencies are becoming more interested in this type of work.

Experimental Work Since this department is engaged in extensive chemical weed control work both on private and public land, it is of paramount importance to use the most effective materials and methods to obtain maximum results with minimum cost. Although, there is a substantial quantity of literature written on these herbicides, many pertinent facts concerning their value to specific conditions found in this county are not available. Furthermore, each year finds a number of new chemicals placed upon the market for weed control of which even less is known of their weedicidal properties. Thus, it is evident that only through experimental work can a more accurate conclusion be acquired to further the most successful weed control program possible.

This year test plots were made using the following materials or combination of materials:

Borax Compounds	Oil Emulsions	Sulphur
Sodium Chlorate	Dinitro Compounds	Thalic Acid
I.P.C.	Oil and Penta	Malic Hydrazide
T.C.A.	Chloro-phenol	2,4-D
C.M.U.		
Soda Ash		

The test plots of these materials, in many cases, are still being observed as to results. Also, a special burner was constructed to determine its value in the use of oil or butane. Up to the present time, 176 test plots have been made using the materials listed above on various noxious weeds throughout the county.

SEED INSPECTION

Under Chapter 5, Section 125 of the State Agricultural Law and under the California Seed Law, lots of agricultural and vegetable seed are inspected to see that they meet the provisions of these laws. This is accomplished by inspection of all seed brought into this county for planting purposes or for any other purpose which may disseminate weed seeds. Shortly after notification by common carriers of the arrival of seed lots into the county, inspection is conducted for the presence of noxious weed seed or insect pests.

Agricultural and Vegetable Seed Inspection One of the important duties of this office is to prevent the introduction of noxious weed seeds into this county. Periodic inspection of seed houses is maintained throughout the year, especially to check the germination date since it is effective only for a given length of time. This year, 345 lots of agricultural and vegetable seed were inspected in this county. Of this number, only 3 lots were rejected due to mislabeling.

Grain Inspection During the year, numerous shipments of grain, both bulk and sacked, is brought into the county for stock feeding or seeding purposes. Quarantine samples are drawn for noxious weed seed content, and the general condition of the lot is inspected for foreign material such as cotton, corn cobs, or any other debris that may be capable of harboring insect pests. Grain lots found infested with pests are disposed of by appropriate methods of cleaning, grinding, burning, or fumigating.

	Lots Passed	Lots Rejected	Total Lots Inspected
Interstate Lots Inspected	1,050	574	1,624
Intrastate Lots Inspected	411	9	420

Lots Rejected in Tonnage:

Tonnage	Reason for Rejection	Disposition
100 tons	Canadian Thistle	Recleaned or diverted
50 tons	Yellow Star Thistle	Recleaned & ground
850 tons	European Corn Borer	Fumigated, diverted, shipped out of state, cleaned & ground & debris burned
22,150 tons	Johnson Grass	Cleaned & ground or burned
6,300 tons	Johnson Grass & White Horsenettle	Cleaned & ground or burned

Screenings Throughout the year, screenings at the 4 warehouses were inspected for noxious weed seeds. Those lots found infested were rejected and the required sixty days was given to the owner to dispose of the lot by recleaning, grinding, or burning. Out of the 16,179 sacks of screenings inspected, 10,325 sacks were rejected for noxious weed seeds. These rejected sacks of screenings were disposed of by recleaning and grinding or dehydration.

The following weed seeds were present in lots rejected:

Number of Sacks	Kind of Noxious Weed Seed	Disposition
545	Morning Glory	Ground
81	Puncture Vine	Ground
7,815	Johnson Grass & White Horsenettle	Ground or burned
1,884	Morning Glory, Yellow Star Thistle, Johnson Grass, & Bermuda Grass	Dehydrated & ground or burned

Seed Certification The purpose of seed certification is to maintain and make available to the public, high quality seed and propagate materials of superior crop plant varieties so grown and distributed as to insure genetic identity and purity. Only those varieties that contain superior germ plasm are eligible for certification.

This office has complete authority to safeguard by suitable measures, the identity of seed intended for certification.

To insure proper identity, this office inspected harvesters wherever necessary for the presence of any foreign seed; also all processing equipment must be cleaned thoroughly, to avoid contamination of the certified seed, and approved by this office before cleaning operations on certified seed starts.

Wherever a request is made to move seed, subject to certification prior to final tagging, this office issues an intercounty permit with the necessary information to the commissioner at destination. This county also requires a permit whenever seed, subject to certification, arrives into this county.

After a lot has met all preliminary requirements, a sample is drawn in the same manner as an official sample is drawn, with one sealed portion going to the California Crop Improvement Association and one sample is retained by this office. Upon notification from the California Crop Improvement Association that the lot has met the requirements of certified seed, the lot is tagged and sealed under the supervision of this office.

These tags and seals are furnished by the Crop Improvement Association.

Many lots of certified seed grown last summer have not been processed. However, 178 samples have been drawn this year consisting of beans, clover, alfalfa, sudan grass, barley and wheat. Beans and ladino clover are the two main seed crops of this county.

APIARY INSPECTION

The purpose of bee inspection is to prevent the introduction and spread, within the county, of diseases injurious to bees, maintain a registration list of apiaries, issue certificates of inspection, and properly dispose of all American Foulbrood colonies. This year, through the cooperation of the State Department of Agriculture, a Deputy State Bee Inspector was assigned to this area for two months. This Deputy worked with all District Inspectors checking colonies in the various districts. Below is a report disclosing the amount of work done in this field:

Type of Work	Number of Apiaries	Number of Colonies
Registered	1	6
Entering California	1	200
Leaving California	2	393
Entering County	11	628
Leaving County	7	609
Moving within County	25	1,279
Inspected	95	2,037
Infected with American Foulbrood	13	44
Infected with European Foulbrood	9	13
Burned for American Foulbrood	13	44

FAIRS AND EXHIBITS

The fair activities of this department were curtailed extensively this year, since San Joaquin County did not enter the State Fair. However, an entry was made at the San Bernardino National Orange Show early in the year which won first place. At the County Fair, members of this department assisted the different communities in gathering and displaying their agricultural commodities.

COOPERATION WITH BUREAU OF MARKET ENFORCEMENT AND BUREAU OF MILK CONTROL

Investigations, hearings, and procedures set forth under the Produce Dealers Act, the Processor's Law and Milk Control Law resulted in a net remittance of $43,444.55 to growers of this county.

Whenever controversies arise between growers and dealers or processors, the County Agricultural Commissioner's Office extends every possible effort to aid the Bureau of Market Enforcement by collecting necessary evidence concerning these cases. With this evidence it is possible to offer a thorough presentation of facts on both sides, which will result in a fair readjustment to all concerned. Many of these complaints are first received at this office and then all details concerning the complaint are transmitted to the Bureau.

All buyers of farm commodities must be licensed by the Bureau of Market Enforcement. This applies to cash buyers as well as others. The County Department assists the Bureau in seeing that all these buyers are properly licensed, and also maintains a special office in the Agricultural Building for State Officials for the pur-

pose of holding hearings or any other activity which requires office space.

Recoveries effected by the Bureau of Market Enforcement for the benefit of San Joaquin County growers during 1951 are as follows. These recoveries consist of amounts paid by licensees following complaints by growers of failure to pay or failure to perform in accordance with contracts.

	Number of Participants	Amount Received
Produce Dealers	61	$32,734.36
Processors	14	7,606.04
Milk Recoveries	75	3,104.15
Total	150	$43,444.55

MISCELLANEOUS DEPARTMENTAL DUTIES

There are a number of activities carried out by members of this Department as supplemental to our regular duties. These activities are designed to facilitate the operations of this department and extend to the farmer a more complete service.

Identification of Insects, Diseases, and Plants The proper identification of insects, plant diseases or plants is often vital in the performance of many duties. Quarantine and Nursery Inspection, Field and Orchard Inspection, Plant Pest Control, and Weed Control are all directly concerned. In case positive identification cannot be made, or it is desirable to obtain verification, then specimens are submitted to either State Department of Agriculture Insect Taxonomists, Plant Pathologists or Plant Taxonomists respectively.

Farm Meetings A closer observance of farmers' needs has been carried out in the various districts in the County by personnel of this Department who attend farm meetings. In this manner, any matters pertaining to this Department may be discussed on the spot by a representative of this Department. This also gives our Department an opportunity to carry out an educational program in any pest control work sponsered by this office.

Photographic Work A convenient method of recording agricultural information concerning this county has been through the use of photographs. These pictures are taken by members of this Department and developed in our own dark room, which has proved to keep costs to a minimum. This year, 288 black and white and 520 color slides were produced by this Department. One of the most important values of these pictures is in their use for visual education at farm group meetings.

Soil Tests The causation of subnormal plant growth or the death of a plant is not always apparent. When insect or plant diseases are not evident, the trouble may be found in the soil. In-

spectors, confronted with such problems, often resort to a laboratory analysis of the soil, performed at this office, for a satisfactory answer. During the year, 35 samples of soil were tested. Many times alkali soil has been found responsible for the adverse plant growing conditions, or a surplus salt concentration is the offending material. At other times, a deficiency in a vital food material is responsible. This information is of vital help to inspectors in making recommendations for correcting the trouble.

Special Agricultural Reports Throughout the year, numerous requests are received by this Department for statistical information on various crops grown in this County. These requests may include one crop or a number of different crops. This, in turn, may be for a given section of the County. Since farmers and a host of agencies connected with the handling and processing of farm commodities are vitally interested in the production fluctuations of various crops, statistical information is of prime importance in planning for the future.

Spraying of County Shade Trees This year a number of county sycamore trees were sprayed by this department for sycamore scale. A total of 580 sycamore trees were treated, using 3,200 gallons of spray mix.

Shop Work Throughout the year, there has been continuous activity in the department's shop. Here the repair and maintenance of spray rigs used in connection with the county's special weed control program is carried out. Also new equipment is assembled for this specialized type of work in the shop. Also in the shop, fair exhibits are designed and constructed. All of the mechanical and electrical devices required in running the moving objects are assembled in the shop. Since most of the parts that make up the construction of many of the exhibits are not available through commercial channels, it becomes the responsibility of the shop personnel to plan and build the necessary parts.

Staff Meetings Periodically throughout the year, meetings are held by members of the department. These meetings are convened to discuss problems of the department with reference to standardized methods of inspection and changes in the laws. Also, reports are given by inspectors of activities in their respective districts. These meetings have been of vital importance in dissemination of information of departmental policies and county activities.

Weather Reports During the year, weather reports on crop growing conditions in the county are filed with the United States Weather Bureau. These reports are submitted each week in the summer and once each moth during the winter.

FINANCIAL REPORT SUMMARY
FOR FISCAL YEAR ENDING JUNE 30, 1951
AGRICULTURAL DEPARTMENT & SPECIAL WEED CONTROL

CLASSIFICATION		
Administrative	$ 20,280.79	
Plant Quarantine, Seed and Nursery Inspection	17,364.20	
Fruit, Nut, Vegetable, Honey, and Egg Standardization	14,999.25	
Field and Orchard Inspection	13,147.50	
Apiary Inspection	504.59	
Rodent Control	8,694.50	
Weed Control	14,962.23	
Crop Statistics	11,511.37	
Office Personnel	6,181.63	
Fairs and Exhibits	6,257.78	
Maintenance and Operation	5,800.74	
General	3,766.84	
		$ 123,471.42
SPECIAL WEED CONTROL		
Salaries and Wages	$ 35,494.83	
Maintenance and Operation	24,316.51	
Capital Outlay	3,806.17	
		$ 63,617.51
GRAND TOTAL EXPENSES		$ 187,088.93
COLLECTIONS REMITTED TO COUNTY TREASURER		$ 16,184.32

CROP SUMMARY
SAN JOAQUIN COUNTY
YEAR - 1951

Since climatic conditions are one of the all important factors in the growth progress of agricultural crops, a more comprehensive understanding of crop developments may be obtained by a review of the weather conditions of the year. As there are decided fluctuations in temperature, humidity and rain fall in various sections of the state at a given time, the same is true within the boundaries of San Joaquin County. Thus, only general trends in the growth progress of any given crop may be stated within the scope of this report.

The first part of 1951 did not represent the best weather for crop production. It was not until the last two weeks of January that the prolonged warm winter temperatures were broken. Frosts and freezing temperatures were especially welcomed by growers of deciduous fruit crops which finally started the dormant period. Due to the prolonged wet weather during this period, farming operations were drastically curtailed. Seed bed preparations, winter planting of crops and pruning operations were held up.

During February, rains, frost, overcast skies with some clear days were intermingled throughout the month. Due to the intermittent rains, it was extremely difficult for farmers to prepare the soil for spring crops. However, by the end of the month most of the pruning of grapes and fruit trees was completed, and plantings of spinach, peas, onions and tomato hot beds was evident in the county. The asparagus harvest started the latter part of February; however, the cold weather curtailed production extensively.

By the first of March, almond orchards were in bloom, peach and plum orchards were in the popcorn stage, and the buds on the cherry trees were swelling. Tomato growers had, by this time, managed to obtain a fair stand of young tomato plants in their hot beds. On March 2nd, the temperature dropped to an exceptionally low point in many locations within the county. As a result, a number of tomato hot beds suffered extensively. Miraculously, orchards escaped with virtually no damage except some damage which was experienced in almond orchards. Frosts and cold weather expired mid-March and excellent growing weather prevailed for the rest of the month.

With almost complete absence of rainfall from early March until nearly the end of April, non-irrigated crops were seriously set back. This condition was especially evident in dryland grains and native pastures; however, irrigated crop progress was excellent. Growers took advantage of the good weather to prepare land for seeding of rice, planting of sugar beets, tomatoes and melons. The first cutting of alfalfa and grain hay was started during April and the harvesting of cherries, lettuce, asparagus, peas and spinach was in progress. The heavy rains at the end of April caused considerable damage to hay cut or piled in the fields and to early varieties of cherries.

May and June found fair to good weather for the growth of most crops due to variable temperatures. Blossom set on tomatoes was slow at first due to the cool nights.

In the first part of July, temperatures of over 100 degrees caused a fair amount of sunburn damage to grapes and walnuts. From this time on, favorable growing conditions were enjoyed by farmers of San Joaquin County until the first part of November.

With the excellent fall weather, farmers were able to harvest a high percentage of their crops without losses. The ideal conditions permitted the harvesting without trouble, late maturing crops, such as sugar beets, celery, grapes and rice. Furthermore, an exceptionally large acreage of ground has been prepared for next year's crops; also farmers are well along in their planting of field crops such as grain, alfalfa and ladino clover.

The following is a report covering a general summary of the important crops in San Joaquin County for 1951:

FRUIT AND NUT CROPS

Almonds There was some damage to early blooming varieties of almond especially in orchards that did not have adequate frost protection by wind machines or smudge pots. The size and quality of the nuts was good this year. The tonnage increased 1,461 tons over the year before which, in part, was due to a 576 acre increase in the county.

Apricots Growers enjoyed a good apricot season. There was an increase of 604 tons to the processor; also, there was a substantial increase in price. No pit burns occurred this year.

Cherries There was considerable loss and drop in quality in the early varieties of Chapmans and Burbanks due to wind and rain. Otherwise, quality and size of other varieties was very good. The adverse weather conditions at the beginning of the season is probably the largest contributing factor to the 143 car decrease to eastern markets. The first carload of cherries left this county May 6th and shipments continued until June 20th. There was an increase over the year before of 298 tons of black cherries to the processor. Most spectacular was the increase in Royal Anns of 1558 tons. Also, there was an increase of $80.00 per ton on both black and white cherries going to the processors.

Chestnuts A severe heat spell during the summer while the nuts were filling reduced the size of the nuts. Consequently, tonnage was lower. The major portion of the crop was sold within the state eliminating eastern shipments. The large size nuts sold at fairly high prices but the demand for small nuts was poor.

Figs There were no eastern shipments. The tonnage remained about the same as the year before. There was a decrease of $140.00 per ton on dried figs.

Grapes (Table) The grape crop was good in all respects. Color was normal and berries were of good size and good sugar content. This year, there was a 66% increase in package Tokay grapes with a 20 cent increase over the year before. There was also an increase of 39,053 tons of Tokay grapes to the wineries; however, there was a 59% decrease in price.

Grapes (Juice) High production was also evident in the juice grapes. Shipping grapes increased by 25% and the tonnage to wineries increased by 54%. However, the price of juice grapes fell 53% under the year before.

Olives The acreage of this crop remains constant, but the production tonnage dropped 23%. This decreased tonnage was offset, in part, by an increase in price. About 2/3 of the olives go to the canneries and the remaining 1/3 for oil.

Peaches (Freestone) Early varieties produced a small crop. Consequently, there was a 41% decline in packages of peaches shipped. There was a 211 ton decline of peaches to the processors; however, there was an increase of 127 tons to the driers. Dried peaches dropped $140.00 per ton under the year before.

Peaches (Cling) The cling peach season started August 1st and extended until September 16th. Size and quality was good with no trouble from mildew. The 13,810 ton increase represented a 28% increase over last year. Also, growers enjoyed a $17.50 increase per ton.

Pears Most of the pear crop went to the canners. The 470 tons to canners was 118 tons under the year before. This lower production was offset by a $25.00 per ton increase.

Plums The plum market throughout the season was weak. The price per crate declined 80 cents. Furthermore, the packages dropped 25,043 under 1950.

Walnuts The acreage of this crop remained constant. The quality and size of the crop was good. The tonnage increased 1,435 tons or 18% over last year. Furthermore, the price increased $40.00 per ton.

FIELD CROPS

Alfalfa Hay Prices were higher this year with strong demands for hay throughout the season. The yield was good, producing excellent quality throughout all five cuttings. The most outstanding factor about the alfalfa crop was the acreage reduction of 11,279 acres from the previous year.

Beans Acreage increased 7,095 acres over last year with the largest acreage gain in blackeyes, light red kidneys and dark red kidneys. Yields and quality remained about the same as last season. Bean growers enjoyed favorable weather conditions at harvest time.

Field Corn The quality and yield were normal, with the price advancing $15.00 per ton over last year. Acreage increased approximately 2,500 acres above the previous year.

Grain Barley farmers suffered heavy acreage losses since there was a drop of 27,467 acres under last year. Adverse weather conditions during planting time were largely responsible for the reduction. Quality of barley, wheat and oats was below normal; however, market demands were good with prices advancing throughout the season.

Hay The acreage of volunteer grain hay remained about the same as last season. Prices continued to rise considerably throughout the year. Yield and quality were normal this past season.

Pasture The acreage growth of irrigated pastures in San Joaquin County has been phenomenal these past few years. In 1940, ladino clover acreage was 17,898 acres. This crop has continued to increase to the present peak of 76,559 acres. This is an increase of 8,728 acres over last year. Range pasture conditions were above normal with feed value being excellent.

Potatoes Market prices advanced steadily throughout the harvest period. However, the bulk of the potatoes was sold before the sharp rise in prices. Quality and yield were good. There was approximately a 500 acre increase over 1950 plantings.

Rice Yield and price were very similar to last year. The acreage increase was 1,954 acres over last season.

Sugar Beets Due to the difficulties experienced in 1950, together with adverse weather conditions at planting time, there was a reduction of 2,167 acres this season. The yield remained about the same; however, there was a price raise of 90 cents per ton over last year.

Sunflowers Yields of sunflower seed varied from field to field with good quality predominating. The average yield of 11 sacks per acre was an increase of 3 sacks over the previous year. Also, the price increased $2.00 per hundred weight.

Sweet Potatoes The acreage decreased 571 acres this year. Market demands during the harvest period were strong. The $3.00 per bushel basket this year represented a $1.40 increase over the previous year. The quality, size and yield were normal.

VEGETABLE CROPS

Asparagus Production of this crop was lower this year than it was last season. Since the asparagus did not go into dormancy until the latter part of the winter months, coupled with a cool spring, harvest of this crop was late in starting. Along with the lower production of market "grass" the asparagus acreage in the county decreased 1,450 acres under last year. With a strong market demand throughout the season, total valuation surpassed that of the previous year.

Carrots Most of the carrots went for fresh market produce. There was a slight decline in acreage; however, market demands were good with high prices.

Celery Market demands for celery this year has been poor resulting in low prices. The frosts from December on, required packers to trim more on the celery. By the end of the year, 280 acres was still in the field. Celery acreage increased 348 over the year before.

Melons Again melon growers enjoyed good yields and prices. The melon acreage remained about constant. Some mosaic (Rind rot) appeared this year.

Onions Due to the poor onion year of 1950, the county's acreage dropped sharply over a thousand acres. With the wet weather of November and December, early onion yields were low. However, late onion growers enjoyed high yields. Market conditions were fair. This year a large percentage of the crop was harvested by the shipper.

Peas The acreage decreased 220 acres under the 1,265 acres of last year. Cannery prices increased considerably this year.

Spinach The spinach acreage remained about the same; however, there was an increase in tonnage per acre.

Strawberries The acreage increased 200 acres over the previous year. There was a decided drop in price. A larger percentage of strawberries went to the freezers this year. Growers experienced some trouble with frost in the spring.

Tomatoes A record crop of tomatoes was harvested in San Joaquin County this year. The 43,586 acres of tomatoes which was an 87% increase over last year represented the largest acreage in the history of the county. Of this acreage, 41,549 acres were rounds with an average tonnage of 16 tons per acre. The remaining 2,037 acres of pears gave an average tonnage of 16.95 per acre. The entire tomato crop gave a total valuation of over 23 million dollars. Tomato growers did have a little trouble at the beginning of the season. A frost destroyed some tomato beds. Then the cool nights at the beginning of the blooming period caused a heavy blossom drop. From this time on, good fortune was with the growers. Mexican Nationals helped to solve the labor problem and an extraordinarily long harvest season permitted growers to harvest a very large percentage of their total crop. Tomato pests were at a minimum.

FRUIT AND NUT CROPS
SAN JOAQUIN COUNTY
YEAR - 1951

CROP		BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Almonds		8,801	.68	5,985	Ton 28#	$480.00	$ 2,872,800
Apricots	Ship.	1,161	10.18	11,819	Pkg.	1.50	17,728
	Proc.		3.77	4,377	Ton	105.00	459,585
	Dried		.03	35	Ton	500.00	17,500
Cherries	Royal	1,036	4.18	4,330	Ton	300.00	1,299,000
Other Cherries	Ship	2,553	1.71	4,366	Ton	518.50	2,263,771
	Proc.		.50	1,276	Ton	300.00	382,800
Chestnuts		116	1.18	9972 137	Ton	440.00	3955 71 60,280
Figs	Ship.	410	.04	16	Ton	150.00	2,400
	Proc.		1.11	455	Ton	144.00	65,520
	Dried		.20	82	Ton	200.00	16,400
Grapes Juice	Ship.	32,992	.95	31,342	Ton	110.00	3,447,620
	Wine		3.94	129,988	Ton	28.50	3,704,658
Grapes Tokay	Ship.	22,613	252.26	5,704,355	Pkg. 28#	1.75	9,982,621
	Wine		6.47	146,306	Ton	20.60	3,013,904
Grapes All Other	Ship.	1,758	33.04	58,084	Pkg. 28#	1.70	98,743
	Wine		7.60	13,361	Ton	23.50	313,983
Misc'l Orchards		118			Acre	200.00	23,600
Nectarines		86	250.00	21,500	Pkg. 28#	2.50	53,750
Olives		348	1.17	407	Ton 20#	254.00	103,378
Peaches Free	Ship.	2,185	110.00	240,350	Pkg.	1.50	360,525
	Proc.		3.71	8,106	Ton	60.00	486,360
	Dried		.30	655	Ton	300.00	196,500
Peaches Cling	Proc.	5,634	11.14	62,763	Ton	77.50	4,864,132
	Dried			8	Ton	160.00	1,280
Pears	Ship.	90		20	Ton	125.00	2,500
	Proc.		5.22	470	Ton	100.00	47,000
Plums	Ship.	1,088	168.95	183,818	Pkg. 28#	2.20	404,400
	Proc.		.08	87	Ton	45.00	3,915
Prunes	Ship.	101	246.90	24,937	Pkg. 28#	2.00	49,874
	Dried		1.74	176	Ton	160.00	28,160
Walnuts		11,745	.80	9,396	Ton	450.00	4,228,200
						TOTAL	$38,872,887

FIELD CROPS
SAN JOAQUIN COUNTY
YEAR - 1951

CROP	BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Alfalfa Hay	54,376	6.50	353,444	Ton	$ 27.50	$ 9,719,710
Barley	69,915	16.50	1,153,597	CWT	3.10	3,576,151
Beans, Dry	19,780	15.10	298,678	CWT	9.90	2,956,912
Corn, Grain	11,555	1.25	14,444	Ton	75.00	1,083,300
Corn Husks			283	Ton	600.00	169,800
Grain Sorghum	4,091	18.00	73,638	CWT	3.25	239,323
Hay, Grain	7,243	1.50	10,864	Ton	23.50	255,304
Hay, Wild	14,009	1.25	17,511	Ton	22.00	385,242
Oats	8,053	8.00	64,424	CWT	2.90	186,830
Pasture Range	210,638			Acre	2.50	526,595
Pasture Clover	76,559			Acre	45.00	3,445,155
Pasture Sudan Grass	1,597			Acre	35.00	55,895
Pasture Stubble	91,342			Acre	1.25	114,177
Potatoes	4,935	317.00	1,564,395	CWT	2.35	3,676,328
Pumpkin Canning	918	7.00	6,426	Ton	7.50	48,195
Pumpkin Stock		10.00	9,180	Ton	3.00	27,540
Rice	8,194	35.00	286,790	CWT	4.70	1,347,913
Silage, Corn	1,156	16.00	18,496	Ton	5.00	92,480
Sugar Beets * **	10,961	17.20	188,529	Ton	12.90	2,432,024
Sunflowers	1,897	11.00	20,867	CWT	9.00	187,803
Sweet Potatoes	1,281	190.00	243,390	Bskt	3.00	730,170
Wheat	5,180	8.00	41,440	CWT	3.60	149,184
					TOTAL	$31,406,031

* Includes Federal Subsidy
** 4,001 Acres planted in 1950, harvested in 1951

VEGETABLE CROPS
SAN JOAQUIN COUNTY
YEAR - 1951

CROP	BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Asparagus Ship.	53,572	18.42	986,796	30# Pkg.	$ 4.35	$ 4,292,563
Asparagus Proc.		.79	42,322	Ton	244.00	10,326,568
Beets, Table	43	15.25	656	Ton	25.00	16,400
Broccoli	29	3.00	87	Ton	140.00	12,180
Cabbage	71	300.00	21,300	Pkg.	1.60	34,080
Cauliflower	33	300.00	9,900	Pkg.	1.50	14,850
Carrots	379	12.00	4,548	Ton	75.00	341,100
Celery	3,727	410.00	1,528,070	Pkg.	2.40	3,667,368
Corn, Sweet	531	185.00	98,235	Pkg.	2.00	196,470
Cucumbers	133	6.00	798	Ton	51.50	41,097
Garlic	3	90.00	270	CWT	10.00	2,700
Lettuce	137	220.00	30,140	Pkg.	2.00	60,280
Melons Cranshaw	138	8.00	1,104	Ton	37.50	41,400
Melons Cantaloupe	422	174.00	73,428	Pkg.	2.40	176,227
Melons Casaba	724	8.00	5,792	Ton	25.00	144,800
Melons Honeydew	315	7.50	2,362	Ton	25.00	59,050
Melons Persian	48	7.50	360	Ton	25.00	9,000
Melons Watermelon	1,842	12.70	23,393	Ton	19.60	458,503
Onions Early	1,606	500.00	803,000	Sk.	1.35	1,084,050
Onions Late	724	575.00	416,300	Sk.	1.35	562,005
Peas Ship.	398	115.00	45,770	Tub	2.00	91,540
Peas Proc.	647	1.94	1,255	Ton	74.00	92,870
Peppers	180	11.00	1,980	Ton	35.00	69,300
Spinach	898	5.06	4,544	Ton	25.00	113,600
Squash	293	10.00	2,930	Ton	18.00	52,740
Strawberries	408	1,195.00	487,560	12 Bskt	2.25	1,097,010
Tomatoes Ship.	41,549	26.28	1,091,908	32# Pkg.	2.50	2,729,770
Tomatoes Round		16.00	664,784	Ton	30.00	19,943,520
Tomatoes Pear	2,037	16.95	34,527	Ton	37.00	1,277,499
Truck Garden	814			Acre	200.00	162,800
					TOTAL	$47,171,340

SEED CROPS
SAN JOAQUIN COUNTY
YEAR - 1951

CROP	BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Alfalfa Seed	421	429.00	180,609	Lb.	$ .26	$ 46,958
Asparagus Roots	125			Acre	420.00	52,500
Asparagus Seed			22,000	Lb.	1.00	22,000
Beans Blackeyes Certified Seed	100	14.50	1,450	CWT	10.25	14,862
Beans *Light Red Kidney Certified Seed						960,165
Beans *Dark Red Kidney Certified Seed						218,547
Beans White Red Kidney Certified Seed	35	17.14	600	CWT	15.00	9,000
Cantaloupe Seed	12	250.00	3,000	Lb.	.45	1,350
Gourd Seed	10	240.00	2,400	Lb.	.35	840
Harding Grass Seed	30	93.00	2,790	Lb.	.75	2,092
Ladino Clover Seed	2,666	145.00	386,570	Lb.	1.00	386,570
Millet Seed	70	814.00	56,980	Lb.	.05	2,849
Nursery Grape Vines						6,000
Nursery Other Tree						180,000
						134,000
Onion Seed	28	600.00	16,800	Lb.	1.00	16,800
Popcorn Seed	65	10.76	699	CWT	8.00	5,592
Potato, Certified	688	261.00	179,568	CWT	4.30	772,142
Red Clover Seed	28	215.00	6,020	Lb.	1.25	7,525
Safflower Seed	728	880.00	640,640	Lb.	.047	30,110
Squash Seed	10	300.00	3,000	Lb.	.35	1,050
Sudan Grass Seed	480	10.95	5,256	CWT	7.00	36,792
Tomato Seed	3	705.00	2,115	Lb.	4.00	8,460
Watermelon Seed	30	250.00	7,500	Lb.	.31	2,325
					TOTAL	$2,918,529

* Accurate prices and production figures are not available at this time. Total income for these two crops is estimated.

PERMANENT CROPS IN SAN JOAQUIN COUNTY
YEAR - 1951

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
ALMONDS		
Drake	1	358
Eureka	0	1
I X L	0	112
Jordanolo	288	541
Mission	432	3,172
Ne Plus Ultra	83	527
Non Pareil	695	3,706
Peerless	48	342
Other	5	42
Total	1,552	8,801
APPLES		
White Astracaan	0	10
Golden Delicious	0	1
Other	0	1
Total	0	12
APRICOTS		
Blenhein & Royal	1	649
Moor Park & Hemskirk	0	8
Tilton	2	503
Other	0	1
Total	3	1,161
CHERRIES		
Bing	272	1,457
Black Republican	1	27
Chapman	18	148
Lambert	14	263
Royal Ann	226	1,036
Tartarian	52	583
Other	12	75
Total	595	3,589
CHESTNUTS (All)	6	116
FIGS		
Black	0	31
Kadota	0	379
Total	0	410
FILBERTS (All)	0	1

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
GRAPES (Raisin)		
Muscat	12	189
Thompson Seedless	66	650
Zante Currant	0	9
Total	78	847
GRAPES (Table)		
Cardinal	39	0
Concord	0	6
Emperor	0	213
Malaga	0	109
Ribier	0	150
Tokay	247	22,613
Other	0	433
Total	286	23,524
GRAPES (Wine)		
Alicante	3	5,306
Burger	0	933
Carignane	207	7,836
Colombar	0	30
G. Reisling	0	10
Golden Chasselas	0	80
Grenache	2	982
Matero	0	19
Mission	0	1,822
Palomino	1	1,164
Petite Sirah	0	397
Sauvignon Blanc	0	23
Zinfandel	27	13,547
Other white	0	153
Other dark	30	690
Total	270	32,992
NECTARINES (All)	103	86
OLIVES		
Ascolano	5	69
Manzanillo	52	71
Mission	25	192
Other	0	16
Total	82	348

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
PEACHES (Cling)		
Andora	25	101
Carolyn	7	66
Cortez	56	36
Fortuna	25	147
Gaume	71	1,055
Gomes (Stuart)	96	405
Halford	73	1,314
Johnson	0	125
Libbee	0	54
Palora	126	1,078
Peak	4	215
Phillips	9	477
Sims	0	68
Walton	0	56
Other	79	437
Total	571	5,634
PEACHES (Free)		
Babcock	1	4
Crawford	0	3
Early Elberta	7	21
Elberta	159	915
J. H. Hale	23	164
Lovell	1	289
Muir	0	170
Salway	1	21
Other	119	598
Total	311	2,185
PEARS		
Bartlett	1	85
Beurre Hardy	0	5
Total	1	90
PERSIMMONS (All)	0	8

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
PLUMS		
Beauty	0	3
Burbank	0	10
Climax	0	8
Duarte	11	101
Grand Duke	0	9
Kelsey	0	11
President	3	118
Santa Rosa	19	240
Tragedy	6	231
Wickson	0	3
Other	60	354
Total	99	1,088
PRUNES		
French	0	41
Imperial	0	2
Robe De Sergeant	0	9
Sugar	1	49
Total	1	101
QUINCES (All)	0	11
WALNUTS		
Concord	3	47
Eureka	169	2,866
Franquette	291	3,097
Hartley	482	149
Mayette	15	738
Payne	324	4,561
Placentia	0	87
Other	67	159
Seedling	129	41
Total	1,480	11,745
BLACK WALNUTS	575	86
ASPARAGUS	6,590	53,572

THE TREND OF FRUIT & NUT CROPS IN SAN JOAQUIN COUNTY
AT FIVE YEAR INTERVALS

BEARING ACREAGE

CROP	YEAR 1936	YEAR 1941	YEAR 1946	YEAR 1951
Almonds	3,667	4,354	6,976	8,801
Apples	32	33	36	12
Apricots	1,794	1,572	1,958	1,161
Cherries	4,434	4,113	3,987	3,589
Chestnuts	224	164	150	116
Figs	538	520	510	410
Grapes, Juice	33,930	31,707	31,764	32,992
Grapes, Raisin	845	991	988	847
Grapes, Table	1,770	1,386	1,231	911
Grapes, Tokay	17,338	17,198	18,471	22,613
Nectarines	114	129	186	86
Olives	365	350	351	348
Peaches, Cling	3,483	3,205	5,133	5,634
Peaches, Free	2,853	2,922	3,239	2,185
Pears	603	127	142	90
Persimmons	5	13	14	8
Plums	1,322	1,287	1,134	1,088
Prunes	1,432	880	725	101
Walnuts	9,062	9,197	9,591	11,745

THE TREND OF FIELD CROPS IN SAN JOAQUIN COUNTY
AT FIVE YEAR INTERVALS

BEARING ACREAGE

CROP	YEAR 1936	YEAR 1941	YEAR 1946	YEAR 1951
Alfalfa Hay	39,282	44,756	47,632	54,376
Barley	104,496	54,683	86,116	69,915
Beans, All	34,907	30,165	18,128	19,780
Corn, Grain	29,568	26,418	14,373	11,555
Flax Seed	321	0	55	0
Grain Sorghum	12,270	13,173	4,220	4,091
Hay, Grain	36,693	14,043	20,355	7,243
Hay, Wild	615	33,341	23,892	14,009
Oats	16,907	2,526	10,432	8,053
Pasture, Range	252,298	240,000	229,358	210,638
Pasture, Ladino Clover	8,047	18,211	37,585	76,559
Pasture, Sudan Grass	3,652	3,693	2,638	1,597
Potatoes	10,389	7,978	4,661	4,935
Pumpkins	343	763	1,147	918
Rice	2,565	3,086	3,242	8,194
Silage Corn	1,800	2,357	836	1,156
Sugar Beets	12,113	14,671	6,894	10,961
Sunflowers	5,950	5,467	2,440	1,897
Sweet Potatoes	1,152	2,055	1,760	1,281
Wheat	45,546	29,101	18,642	5,180

THE TREND OF VEGETABLE CROPS IN SAN JOAQUIN COUNTY
AT FIVE YEAR INTERVALS

BEARING ACREAGE

CROP	YEAR 1936	YEAR 1941	YEAR 1946	YEAR 1951
Asparagus	17,625	34,192	45,521	53,572
Beets, Table	20	0	56	43
Broccoli	10	153	21	29
Cabbage	100	100	92	71
Cauliflower	50	100	42	33
Carrots	320	533	1,029	379
Celery	7,950	5,286	6,687	3,727
Corn, Sweet	350	428	246	531
Garlic	30	20	5	3
Lettuce	207	134	97	137
Melons, All	2,199	2,279	3,152	3,489
Onions	1,651	1,449	2,413	2,330
Peas	2,244	2,304	3,336	1,055
Peppers	94	44	43	180
Spinach	663	734	1,270	898
Squash	260	178	326	293
Strawberries	96	166	67	408
Tomatoes, Round	14,375	5,982	28,664	41,549
Tomatoes, Pear		11,727	2,204	2,037

SAN JOAQUIN COUNTY
YEAR - 1951

APIARY PRODUCTS

Honey	759,000 Lbs.	@	.10	$ 75,900.00
Bees Wax	4,246 Lbs.	@	.50	2,123.00
Queen Bees	10,556 Queens	@	.86	9,078.00
Pollenization	6,250 Colonies	@	2.90	18,125.00
			Total	$ 105,226.00

DAIRY PRODUCTS

Milk and Milk Products	$ 12,850,100.00

LIVESTOCK

Beef Cattle and Calves	$ 18,570,285.00
Hogs	2,197,019.00
Sheep and Wool	3,242,805.00
Total	$ 24,010,109.00

POULTRY

Chickens	$ 707,037.00
Eggs	2,124,657.00
Turkeys	1,246,320.00
Total	$ 4,078,014.00

SUMMARY

Fruit and Nut Crops	$ 38,872,887.00
Field Crops	31,406,031.00
Vegetable Crops	47,171,340.00
Seed Crops	2,918,529.00
Apiary Products	105,226.00
Dairy Products	12,850,100.00
Livestock	24,010,109.00
Poultry Products	4,078,014.00
Grand Total	$161,412,236.00

1952

1952
AGRICULTURAL REPORT

UNIVERSITY OF CALIFORNIA
DAVIS

COUNTY OF SAN JOAQUIN

DEPARTMENT OF AGRICULTURE

SAN JOAQUIN COUNTY

Department of Agriculture

AUSTIN E. MAHONEY
AGRICULTURAL COMMISSIONER

1868 EAST HAZELTON AVENUE
STOCKTON, CALIFORNIA

POST OFFICE BOX 1809
TELEPHONE 6-6806

TO THE STATE DIRECTOR OF AGRICULTURE AND

THE HONORABLE BOARD OF SUPERVISORS

Section 65.5 of the California Agricultural Code requires that the Agricultural Commissioner compile a report covering conditions, acreage, production, and value of the agricultural products of his county; and Section 65 requires that the Agricultural Commissioner keep a record of his official acts, and make an annual report to the Director of Agriculture on the conditions of the agricultural interests in his county as to what is being done to control pests, and also as to quarantines against pests. This is the nineteenth annual report published by this department.

Approximately one hundred commercial crops are covered in this report, and for your easy reference they are segregated as to their commercial use wherever possible.

Acreages of permanent crops are reported in actual bearing acreage only, and other crops are reported in actual planted acreage. Production is reported in units commonly used in the marketing of crops commercially in this county. Prices are reported on a F.O.B. basis. Cost of production, harvesting, packing, and other handling costs should be deducted to arrive at a true farm value.

Copies of this report are sent to a number of persons in other states, to federal, state, and county agencies throughout the United States, and to an increasing number of organizations and individuals within the state. The members of this department have made every effort to make this report as accurate as possible by checking our figures with every known source of reliable information.

I wish to express my sincere appreciation to all who have assisted my inspectors and deputies by furnishing necessary information to them, which has made the compilation of this report possible.

Respectfully submitted,

Austin E. Mahoney

AGRICULTURAL COMMISSIONER

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ADMINISTRATIVE AND STAFF PERSONNEL

Stockton Office	Hazelton & B Streets	Stockton 6-6806
Austin E. Mahoney	Agricultural Commissioner	
Lester R. Brumbaugh	Chief Deputy Commissioner	
Lloyd V. Braghetta	Deputy Commissioner	
Mark A. Huberty	Deputy Commissioner	
Kenneth W. Jones	Linden District	
Thomas H. Ladd	Quarantine & Standardization	
Elmer T. Pahl	Seed Certification & Inspection	
Deane R. Pratt	Farmington District	
John R. Solari	Roberts Island District	
Don Zuckswert	Entomologist	
D. V. Widney	Warehouse	
Elna Benjamin	Bookkeeper & Stenographer	
Laura Bumpus	Clerk Typist	
Lodi Office	Lodi City Hall	Lodi 8-1432
George Stipe	Deputy Commissioner	
L. F. Ashley	Victor District	
Richard DeVol	Terminous District	
Marvin Switzenberg	Thornton District	
Doris Storz	Clerk Typist	
Manteca Office	Manteca City Hall	Manteca 44
Nick J. Wolter	Supervising Inspector	
Walton Bauer	French Camp District	
Allen Bugbee	Ripon District	
Jess Grisham	Manteca District	
Joseph Silva	Escalon District	
Tracy Office	Tracy City Hall	Tracy 1264
Aage R. Tugel	Deputy Commissioner	
Wilfred McDaniel	South Tracy District	

SPECIAL WEED CONTROL PROJECT

Richard R. Raney	Inspector
Walter Beck	Mechanic

PLANT QUARANTINE

The administration and enforcement of state and federal plant quarantine laws and regulations is an important function of the Agricultural Commissioner's office. The purpose of these laws is to prevent the introduction or spread of insects, plant diseases, animal or weed pests dangerous or detrimental to the agricultural industry of California. In order to prevent the introduction and dissemination of detrimental agricultural pests through any kind of carrier, there is continual inspection of all plant materials or public conveyances coming into this county which might harbor these pests.

This involves the inspection at all post offices, vessels, freight, express, and truck line offices of all incoming and outgoing shipments of plant material, and conveyances which may carry injurious plant disease, insect pests, noxious weeds or animal pests. All such shipments are held for inspection by the common carrier. Most of these places are visited daily by inspectors, and containers of all shipments subject to quarantine are opened and examined for the presence of pests or prohibited material. Whenever shipments are found in violation, disposition of such plant material is either by treatment, destruction under the supervision of the inspector, or return to place of origin.

The following table shows the amount of quarantine work completed for the year of 1952:

State Interior Quarantine Inspections

	By Truck	By Mail	By Boat or Rail	Total
No. of shipments passed	1,144	830	49	2,023
No. of items passed	28,039,231	95,674	44,963	28,179,868
No. of shipments rejected	132		4	136
No. of items rejected	3,153		24	3,177

State Exterior Quarantine Inspections

	By Truck	By Mail	By Boat or Rail	Total
No. of shipments passed	55	5,127	794	5,976
No. of items passed	100,603	188,117	145,505	434,225
No. of shipments rejected	9	37	412	458
No. of items rejected	833	952	474	2,259

Total Quarantine Inspections

	Year 1951	Year 1952
No. of shipments passed	6,992	7,999
No. of items passed	13,836,814	28,614,093
No. of shipments rejected	764	594
No. of items rejected	341,414	5,436

QUARANTINE VIOLATIONS

State Quarantines	Number of Violations	Federal Quarantines	Number of Violations
Quarantine Proc. # 1	9	Federal Quar. # 3	12
Quarantine Proc. # 2	1	Federal Quar. #28	5
Quarantine Proc. # 9	6	Federal Quar. #29	1
Quarantine Proc. #10	2	Federal Quar. #37	14
Quarantine Proc. #13	1	Federal Quar. #55	6
Quarantine Proc. #15	3	Federal Quar. #56	14
Quarantine Proc. #16	6	Federal Quar. #63	1
Quarantine Proc. #20	4	Federal Quar. #69	1
Agri. Code Sec. #115	41		
Agri. Code Sec. #124	137		
Agri. Code Sec. #125	375	B.A.I. Order #371	8
TOTAL	585	TOTAL	62

Ship Inspections

This office collaborates with the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture in the enforcement of federal plant quarantines. Tne federal regulations require that all vessels, on arrival at the first United States port, be placed in quarantine and inspected for the presence of pests or contraband materials.

This year, 96 ships were inspected, an increase of 20 per cent over last year. Each ship's cargo, food stores, baggage, officer's and crew's quarters, and garbage were examined for injurious pests and quarantine law violations. 32 of the 96 ships inspected were found to have contraband material aboard. Most of the quarantine material was plant food, plants, and foreign meat. The plant food, such as fruit and vegetables were usually found in the ship's stores. While the ship was in port, this food was placed under seal in lockers or refrigeration rooms.

After July 6, 1952 the inspection of foreign meat was discontinued by this department and turned back to the Bureau of Livestock Disease Control, State Department of Agriculture. Before this date, however, 18 ships were found to have foreign meat aboard (an increase of 6 ships over last year's total). In order to prevent introduction of any livestock disease, the storage lockers which contained foreign meat were sealed.

Postentry Inspections

The Federal Nursery Stock, Plant and Seed Quarantine Number 37 provides that certain foreign plant materials are permitted entry into the United States under certain restrictions including an approved growing ground for postentry inspection. During 1952 there were 16 lots of plant material imported into this county, and we assisted the state pathologists in the inspection of this nursery stock. No unusual diseases were found.

Certification

When certification as to pest conditions or pest treatments is required by another state or country, it is the duty of this office to inspect and to issue the required certificate free of charge (except where a treatment is required). Eighteen sanitary inspection reports and 270 potato fumigation certificates were issued. There was $675.00 received in fees for potato fumigation certificates during 1952.

PLANT DISEASE AND INSECT SURVEY

The purpose of this survey work is to detect pests new to our county, or not widely distributed here so that they may be suppressed or eradicated before they become well established or widespread. To determine if any new pests have been introduced into this area, survey work by trapping and visual inspection of various growing crops and plant materials was carried out throughout the year. The following is a summary of the most important pest surveys conducted by members of this department.

PLANT DISEASES

Grape Mosaic (Virus)

Accidental introduction of contaminated experimental stock made necessary the inspection of the properties where the stock had been planted. Four properties were inspected in September; no positive identifications were made.

Chestnut Blight Endothia parasitica

This is the eighteenth year eradication work has been carried out since the discovery of the pest in our county. Only one infested tree was found on the three properties inspected. The tree was destroyed by burning to prevent spread of the fungus.

Potato Rot Nematode Ditylenchus destructor

A survey was made of cull potatoes in the packing sheds on one of the major potato producing islands. No evidence of the nematode was found.

Bulb Nematode Ditylenchus dipsaci

Since there are about ten known properties in this locality infested with the pest, survey work for it was discontinued. However, we will continue to keep this nematode under observation.

Strawberry Spring Dwarf Nematode Aphelenchoides fragariae

Seven properties were surveyed for this strawberry nematode. It has not been found in the county since 1947 when one property was infested. The plants on the property were destroyed. No nematode or characteristic damage was found this season.

Western X Disease and Yellow Leaf Curl of Peaches (Virus)

In cooperation with the State Bureau of Plant Pathology, 480 peach and nectarine orchards in San Joaquin County were inspected for yellow leaf curl and western X. The entire county was surveyed and no yellow leaf curl was found in any of the orchards. Out of the 852,704 trees inspected, new cases of western X were found on 386 trees this year, which brought the total of infected trees in San Joaquin County to 657. All infected trees were marked by inspectors from this department and later confirmed by two state pathologists who worked with our office throughout the peach survey.

Fifteen San Joaquin County inspectors comprised the survey crew and a total of 1,526 man hours were spent during the two and one-half month inspection tour. The 480 orchards contained approximately 7,899 acres. Almost two weeks were spent in making maps of each property in the county having peach and nectarine orchards in order to facilitate the work of the inspectors. The locations of trees infested with western X were marked on these maps so that they could be easily located at a later time and also so that there would be a record of them. A complete record of the number of properties, trees, acres and man hours spent was kept throughout the survey. Reports were made each week on all diseased trees and sent to the State Bureau of Plant Pathology for permanent record.

INSECT PESTS

Colordao Potato Beetle Leptinotarsa decemlineata

A spot check was made of approximately 1,200 acres to determine if this insect was present. None was found.

European Corn Borer Pyrausta nubilalis

A survey was made of seven properties in the Stockton district to determine if this serious midwestern corn pest was present. Negative results were obtained.

Japanese Beetle Popillia japonica

Fifteen regulation U.S.D.A. scouting traps were set at four strategic locations such as the airfield, etc. These traps were inspected and serviced weekly from March 27th to September 29th. No Japanese beetles were taken. This insect is destructive to over 275 species of plants and is distributed from the Atlantic coast to the midwest.

Cherry Fruit Flies Rhagoletis cingulata and Rhagoletis fausta

The State Department of Agriculture furnished fifty cardboard traps for this survey. They were baited with ammonium carbonate and hung about eight feet off the ground in cherry trees in the major cherry producing areas of the county. These traps were in the trees from May 16th to June 18th. They were collected and sent to Sacramento for identification of all insects captured. No cherry fruit flies were found. These insects are under eradication in northern California.

Oriental Fruit Fly Dacus dorsalis

In order to detect any incipient infestation of this insect, fourteen traps were set at strategic locations such as the airfield, harbor, etc. Traps were baited with methyl eugenol. These were inspected and serviced weekly from March 27th to September 28th. No fruit flies were taken. This insect is a very serious pest of fruit in the Hawaiian Islands.

Sweet Potato Weevil Cylas Formicarius elegantulus

In October, two packing sheds and five fields consisting of 100 acres in the Manteca district were surveyed for this weevil. No weevils nor characteristic damage was found. This insect is a very serious pest of sweet potatoes in the southeastern states.

Dusky-veined Walnut Aphid Callaphis juglandis

This year there appeared infestations of this aphid on walnut trees in Alameda and Santa Clara counties. To determine the presence here, a survey was made of 240 walnut trees at twenty-four different locations. Negative results were obtained.

Citrus White Fly Dialeurodes citri

A survey for this insect was made on 194 properties in San Joaquin County. Negative results were obtained. This pest is presently under eradication in Fresno and Madera Counties.

Olive Parlatoria Scale Parlatoria oleae

A survey was made in Stockton and Tracy for this insect. The conclusion drawn was that the species is of general distribution in the two cities.

NURSERY INSPECTION

Under authority of Section 123.56 and 128 of the Agricultural Code of California, inspections are made of all San Joaquin County nurseries to see that they are meeting the legal standards regarding insects, plant diseases, and noxious weeds. Since nursery shipments are made to many different points both in and out of the county, this inspection is an important protection to the agricultural industry against the spread of detrimental pests.

Nurseries (Ornamental)

The inspection of nursery stock and premises in thirty nurseries was completed this year. Two important scale insects were found; the olive parlatoria scale Parlatoria oleae, and the pit-making pittosporum scale Asterolecanium arabidis. In each case, the hosts and insects were eradicated from the nursery. Olive parlatoria scale was found in a San Joaquin County nursery for the first time since these inspections were started. Other pests found were common diseases, weeds, and insects such as aphids, scales, red spiders, white flies, and mealy bugs. As part of our pest control program, one nursery was sprayed by the county to rid it of plant pests.

The pests that were found through nursery inspections were controlled to meet the requirements of Section 123.56 of the Agricultural Code of California which governs the issuance and use of intercounty nursery stock certificates.

Nurseries (Tree)

During the winter months, when the planting of fruit and nut trees is in progress, extensive inspection work is necessary. The young trees are closely inspected for injurious plant pests such as oak root fungus, nematode, and crown gall. Under our county ordinance, the roots of fruit trees are examined for split roots, crooked roots, dead roots and freezing damage. Any plants that do not come up to specifications or are infested with pests are rejected.

Nurseries (Virus Survey)

In order that orchard men may be assured of receiving virus free trees, a program of bud wood selection was started in 1949 by the State Department of Agriculture. Trees that are going to be used by nurseries for their bud wood propagation are inspected for viruses. Any trees which show an unusual disorder or disease are marked and the nurserymen are informed not to use these trees for their propagation stock. Some of the field work was done by this department to assist the state pathologists in the survey.

Nurseries (Tomato)

San Joaquin County tomato bed inspection started this spring in April and continued through May and into June. This inspection is primarily to prevent the spread of nematode into clean soil, but is also to prevent the spread of any other insect or disease. 10,000,000 plants were rejected throughout the extensive inspections made, approximately 13 per cent of the total number of plants inspected. Last year, 17 per cent of the total number of plants inspected were rejected. Since it is impossible to rid soil of nematode, this yearly inspection work is extremely important to all farmers in San Joaquin County. One rejection for nematode resulted in a court case when the growers moved plants which were under a "hold notice". A $100.00 fine was collected and a suspended sentence of 30 days and a probation period of one year was given.

In order to facilitate the shipping of tomato plants from Indio into San Joaquin County, two inspectors from this department went there in April to inspect the plants at their place of origin. This service was paid by the growers there, thus incurring no expense to this county. Each truck was issued a certificate showing that the plants had been inspected and certified before being loaded for shipment. Over 19,000,000 plants were inspected at Indio.

TOMATO BED INSPECTION IN SAN JOAQUIN COUNTY FOR 1952

Plants free from nematode - - - -	65,000,000
Plants infested and rejected - -	10,000,000
Total number of plants inspected-	75,000,000

ORCHARD AND FIELD INSPECTION

It is the duty of this office to enforce the provisions of the Agricultural Code relating to the control of insects and plant diseases which are pests to agriculture. Throughout the year, many inspections are made of various orchards, vegetable, and field crops for the purpose of determining the extent of damage by these established pests, and control recommendations are made to the growers. These pest control methods are noted, as are materials in current use and the advantages which such materials may have over those formerly used. Infestations and treated areas are inspected periodically to observe the degree of control, and records are kept on a monthly basis of the various operations in the county.

The following is a brief summary of some of the important pests to crops found in this county.

INSECTS AND MITES ON FRUIT AND NUT CROPS

Codling Moth Carpocapsa pomonella

This major pest of walnuts continues to be a problem to walnut growers. Unfavorable weather conditions during the spraying period caused a slight increase in worm damage. However, worm counts were still low compared with a few previous years.

Walnut Aphis Chromaphis juglandicola

Heavy aphis population occurred throughout the growing season and orchardists were compelled to control this pest several times. Malathon, a new insecticide, when applied as a spray gave excellent control of this insect.

Two Spotted Spider Mite Tetranychus bimaculatus

Unfavorable weather conditions for the proper development of this mite, plus numerous beneficial insects were responsible for the low population of adult mites in orchards. Practically no leaf damage was observed in any of the commercial orchards.

Black Scale Saissetia oleae

A large percentage of the commercial olive orchards were sprayed to combat this pest; consequently there was a lower infestation. In unsprayed orchards, roadside trees, and neglected yard trees we observed a heavy build-up of the scale.

San Jose Scale Aspidiotus perniciosus

Last winter the majority of cherry orchards were sprayed and in most cases, excellent control was obtained. Only spotted infestations were found in various nectarine and peach orchards with only negligible damage.

Almond Mite Bryobia praetiosa

The majority of the almond growers were able to apply dormant spray, which gave excellent results in controlling this pest. However, due to the cool spring, peach growers found heavy populations of these mites in their orchards. The degree of damage was spotted, and varied from orchard to orchard.

Grape Phylloxera Phylloxera vitifoliae

As was the case in 1951, this insect continues to be a problem in many vineyards. Growers are becoming more conscious of this insect each year because of its devastating effect on grapevine roots. Several new infestations were discovered during the year.

Grape Leafhopper Erythroneura comes

This insect was evident in vineyards, as usual; however, late frost, coupled with a cool spring, reduced the population to a very low degree.

Grape Erinose Mite Eriophyes vitis

Early in the spring these mites were scattered throughout the main grape districts, and there were an average number present. However, the over-all damage was very small; in most cases only a few grapevines in the various vineyards showed any loss.

Pacific Mite Tetranychus pacificus

Climatic conditions during the growing season were properly responsible for the light to moderate leaf injury from these mites. Foliage damage was not noticeable until late September, and by that time, grapes had reached maturity.

Peach Twig Borer Anarsia lineatella

Infestations were quite heavy, and young unsprayed orchards showed considerable injury in the new growth. In older orchards fruit injury was higher than the previous year.

Thrips (Various Species)

Heavy populations were noticed in grapes early in the season; however, damage to the berries was not as great as expected from this high population.

Cutworms (Various Species)

Cutworms were not a serious problem in vineyards in 1952. The problem is generally aggravated each year when cover crops are disked in, and the worms have nothing to feed on but the grape buds. When control is necessary, most growers use 5% DDT dust applied directly to the trunk. Very little poison bait is now used because of the excellent results with DDT.

PLANT DISEASES OF FRUIT AND NUT CROPS

Brown Rot *Sclerotinia fructicola*

The heavy dews which prevailed during the growing season favored the development of brown rot. Heavy damage occurred in the early varieties of peaches in many orchards, and the degree of losses varied in each orchard. However, mid-season and late varieties of peaches were less effected by this fungus, mainly due to the change in weather conditions.

Peach Blight *Coryneum beijerinckii*

Since the majority of apricot and peach growers spray to combat this disease, this season, very light infestations were observed on trees in various orchards in the county.

Peach Leaf Curl *Taphrina deformans*

As was the case in 1951, there was very little evidence of this disease during the year.

Oak Root Fungus *Armillaria mellea*

This fungus continues to be a problem in many vineyards and orchards throughout the county. Many growers are becoming more conscious of this destructive fungus and are taking strong measures toward control. This year approximately 5,500 gallons of carbon bisulphide were used by growers in control work.

Crown Rot *Phytophthora cactorum*

This fungus continues to be a problem in walnut orchards and individual trees in town. This condition is most noticeable in locations where soils are poorly drained or where excessive surface moisture is maintained.

Powdery Mildew *Sphaerotheca pannosa var persicae*

Mildew was very heavy in the majority of the peach orchards throughout the county. Damage varied in different orchards ranging in degree from light to severe losses. The repeated applications of sulphur dust did not stop the devastating attack of mildew, largely because of weather conditions.

Walnut Blight *Phytomonas juglandis*

Increased infestations were observed in many of the Payne walnut orchards. This increase can probably be attributed to the damp weather in the spring. Because this blight varies so much from year to year, there is usually no spraying done to combat it.

Cherry Diseases (Various Viruses)

Field observation showed a spread in the infested orchards of the numerous virus diseases such as rasp leaf, crinkle leaf, deep suture, and mottle leaf.

INSECTS AND MITES OF VEGETABLE AND FIELD CROPS

Tomato Mite *Phyllocoptes destructor*

In contrast to the previous season, when this tomato pest appeared in large numbers, relatively light infestations occurred this year. Apparently, greater precautionary measures with adequate applications of dusting sulfur kept this serious pest under control; thus, only a few fields suffered damage.

Beet Leafhopper *Circulifer tenellus*

The beet leafhopper population was noticeably lower compared to previous years. These insects did not present any major problem during the 1952 season.

Corn Earworm *Heliothis armigera*

This lepidopterous insect which readily attacks tomato and corn crops made its usual appearance. Most tomato growers followed a strict dusting program including the insecticide DDD (Dichloro-diphenyl dichloroethane) which kept this pest under good control. However, in corn fields control of the corn earworm with dusting DDT or DDD gave mediocre results. In some fields, hand applications of oil and DDT applied directly to the corn ears proved very effective.

Tomato Hornworms *Protoparce quinquemaculata* and *Protoparce sexta*

This destructive insect caused little damage in San Joaquin County. Growers virtually eliminated this pest by following a scheduled dusting program using DDD.

Red Spider *Tetranychus* Species

By September, a large number of bean fields showed varying degrees of the attack of mites. Many growers found the miticide aramite highly effective in the control of this pest. Red spider also showed up in some of the melon fields causing some damage.

Armyworms (Various Species)

No serious outbreaks occurred this year. Chemical control by growers kept these insects from causing any extensive damage to alfalfa, tomato, and bean crops.

Lygus Bugs *Lygus* Species

Growers of ladino clover seed took special precautions against this insect by treating their fields with DDT. Also, many fields of black-eyed beans were treated. There was notable damage in the safflower crop from this pest.

Darkling Ground Beetles (Various Species)

These insects made their usual appearance in tomato fields in the early spring. This was particularly true in the direct-seeded fields. DDT, DDD, and cryolite were highly effective in keeping losses to a minimum.

Thrips (Various Species)

Such crops as onions, beans, cucumbers, melons, potatoes, and tomatoes were infested with these insects in general. DDT and parathion were used to control the thrip population; thus, damage was light.

Vegetable Weevil Listroderes costirostris obliquus

This weevil made a nuisance of itself particularly in tomato beds. Several tomato fields in the spring were damaged; however, DDT was very effective as a control measure.

Flea Beetles (Various Species)

Activity of these insects was most noticeable in direct-seeded tomato fields. Applications of DDT kept them from causing any extensive damage. Also, some damage was observed in cucumber fields; however, the insecticide cryolite kept the beetles under control.

Grasshoppers (Various Species)

Survey work on areas most prone to grasshopper outbreaks did not reveal any serious infestations. The grasshopper population was relatively low this year. However, commercial pest control operators treated approximately 1,460 acres of alfalfa, peppers, and tomatoes for this insect using a variety of insecticides.

Bean Pod Borer Etiella zinckenella

Infestations of this insect were evident in a number of bean fields. Unfortunately, by the time the damage was observed, it was too late for control.

Serpentine Leaf Miner Liriomyza species

Very heavy infestations were observed especially on tomatoes in the latter part of the summer. A few growers thought their losses from sunburn had been substantially increased by this insect due to the loss of protective leaves. The university conducted experiments using Dieldrin. Reports on the results of these experiments have not yet been published. Other crops attacked were beans and celery. Insecticides used were toxaphene and parathion with questionable results.

Aphids (Various Species)

In general, aphis were not bad this year, but a heavy infestation was reported on banana squash. It was checked with nicotine dust #10. Potatoes and broccoli had rather high populations. Parathion, TEPP, and EPN were used; parathion appeared to give the best results. TEPP proved very effective on aphids infesting strawberries.

Sunflower Phycitid Homoeosoma electellum

There was heavy damage by this caterpillar. Parathion was used on 150 acres, and DDT on 900 acres of sunflowers with fair results.

Seed Corn Maggot Hylemya cilicrura

This seed damaging insect was observed doing considerable damage to one newly planted field of beans. It was necessary to replant approximately 35 acres with lindane treated seed. In general, through the practice of growers of treating the seed with lindane, this pest damage has been virtually eliminated.

Cutworms (Various Species)

These caterpillars caused some damage to asparagus, milo, lettuce, sugar beets, and tomatoes. The degree of damage varied in each field. Good control was attained where fields were treated with poison baits, or dusted with DDT or DDD.

Wireworms Limonius Species

Damage to sweet potatoes by this soil inhabiting insect was moderate. One corn field had a high population. Slight damage was reported on tomatoes.

VEGETABLE AND FIELD CROP DISEASES

Root Knot Nematode Heterodera marioni

As was the case in 1951 this pest continues to spread each year. Many plants in various fields showed moderate to severe stunting from the effects of nematodes feeding on the root system. The range of loss differed in the various infected fields. Where land is known to be contaminated, farmers are compelled to plant resistant crops, or treat their soil with a fumigant in order to grow a profitable crop.

Bacterial Canker Phytomonas michiganensis

This bacterial disease was found to be showing up in only a few tomato fields. Since diseased plants were spotted in the infested fields, no serious losses occurred to any growers.

Western Yellow Blight, Curly Top (Virus)

There were no losses in tomato fields from western yellow blight during the year. In fact, it was almost impossible to find a single diseased plant in the thousands of acres surveyed.

Tomato Mosaic Disease (Virus)

Very little damage resulted from the presence of this virus disease during the year. Diseased plants were observed in many fields; however, in almost all cases, infected plants outgrew this condition and produced good crops. Apparently, only a mild strain of this type of virus appears in this locality.

Spotted Wilt (Virus)

This is another disease of tomatoes with no known control. This disease is spread by thrips, and seems to be spreading more each year. A few fields suffered production losses, but this disease was about the same as in 1951.

Tomato Wilt Fusarium and Verticillium Species

These two fungus diseases, which are major diseases of tomatoes, reduced the production in many fields. It was widespread throughcut the county, and caused considerable sunburn late in the growing season. This was due to the spreading of the vine which resulted from this disease. Round tomatoes seem to be more resistant to tomato wilt than pear tomatoes, and less damage was seen in fields of round tomatoes.

Western Celery Mosaic (Virus)

This disease, which is spread by aphids, is considered a major disease of celery. Since the majority of celery grown in San Joaquin County is of the Pascal type, which is somewhat resistant to the western mosaic, there was only about a 1% infestation of western celery mosaic in the area.

Aster Yellow (Virus)

With a slight increase over the previous year, this celery disease was still light and spotted, and caused little damage. This virus is carried by the six-spotted leafhopper, Macrosteles divisus, and does the most damage to the golden varieties of celery.

Barley Yellow-dwarf (Virus)

This virus, spread by aphids, was much lighter this year than last. Apparently weather conditions were adverse to the development of the aphid population, thus cutting down the spread of the disease. A number of fields in various locations showed characteristic yellow and stunt caused by this virus. In most cases, the grain was well enough along in growth so that the virus did not do too much damage.

HOUSEHOLD AND GARDEN PESTS

Our office receives many calls from home owners requesting information on the identification and control of common home and garden pests. The owner wants to know what is damaging his plants or property and how he can control the pests. Usually, the household pests encountered are of the common types such as termites, powder post beetles, storage insects, ants, and carpet beetles. In the gardens we find various species of caterpillars, beetles, earwigs, aphids, true bugs, nematodes, bacterial, and fungal diseases.

Biological Control

Biological control of insects has been carried on by the University of California, which has collected numerous species of insect parasites and predators from foreign countries such as Spain, Iraq and India for distribution in this country. This year the University and the Agricultural Department released approximately 403,900 parasites and predators of the olive parlatoria scale in Tracy and Stockton for the control of this scale. Many parasitised scales have been found since the experiments began.

PEST CONTROL OPERATIONS

The farmers of San Joaquin County are becoming more and more conscious of the need for pest control operations. This increasing need has brought to the market many new insecticides and herbicides which are injurious to crops, livestock, bees, and, in some cases, to humans. The dangers involved in these materials made it necessary for the State Department of Agriculture to enact rules and regulations to protect the agricultural industry against misuse of hazardous chemicals. It became necessary for each county to issue permits for the use of these injurious insecticides and herbicides. At the time of the issuance of the permit, the applicant is informed of the specific hazards of the material he is using, and of the proper safety precautions. In most cases, a field inspection is made before application of the material to make sure there will be no danger to neighboring crops or livestock.

This year, there was a 24 per cent increase in the number of acres treated with chemicals by commercial pest control operators. These operators are required to register with the San Joaquin County Agricultural Commissioner's office each year and to submit a report each month giving information on all work done in this county. In this way, and through field inspections, this department keeps informed of commercial pest control operations throughout the year. During 1952, 20 aircraft operators, and 38 ground rig operators registered in San Joaquin County with intentions of carrying out commercial pest control work.

There were no formal complaints registered against any commercial pest control operator or against any individual farmer because of damage to crops or livestock through misapplication of any chemical material. Acres treated in San Joaquin County by Commercial Operators:

	Acres Treated by Ground Rig	Acres Treated by Aircraft
Plant Diseases and Insect Pests	463	6,125
Fruit Tree Crops	0	31,035
Field Crops	115	94,250
Vegetable Crops	3,720	94,752
Vineyards	1,211	1,975
Nut Tree Crops		
Total	5,509	228,137
Weed Control	5,508	22,148
2,4-D	711	2,318
Contact Material		
Total	6,219	24,466
Soil Fumigation	904	
DD	1,063	
EDB	236	
BHC	14	
Carbon Bisulphide		
Total	2,217	
Grand Total Acres Treated	13,945	252,603

Injurious Insecticides

"Injurious insecticides" include arsenic, TEPP, parathion, EPN, OMPA, and 0-0-diethyl 0-2(ethylmercapto)-ethyl thiophosphate. The last two organic phosphate materials listed were added to the injurious insecticide list in July, 1952. A permit must be obtained before application of any of these materials is made. If there are serious hazards involved either to neighboring crops, livestock, bees, and humans, or to the operator himself, the permit may not be granted. At the time the application for a permit is made, the regulations and safety precautions are discussed with the farmer. Protection to the applicant and his neighbors is provided by these methods since, in many instances, the applicant had no knowledge of the hazards involved in the use of injurious insecticides.

The following is a list of the injurious materials with the number of acres treated and the number of permits issued in 1952:

Material	Acres Treated	Permits Issued
Arsenic Materials	0	0
Tetraethyl pyrophosphate (TEPP)	2,894	66
Parathion	4,654	81
Ethyl-para-nitrophenyl thionobenzene-phosphonate (EPN)	614	11
Octamethyl-pyrophosphoramide (OMPA)	0	0
0-0-diethyl 0-2(ethylmercapto)-ethyl thiophosphate	0	0

Injurious Herbicides

The use of 2,4-D and related injurious herbicides increases every year, despite the rigid rules and regulations set forth by the State Department of Agriculture. This year, there were 262 permits issued, which was an increase of 86 over last year. These 262 permits represented 43,975 acres sprayed with 2,4-D.

According to the rules and regulations for injurious herbicides, the equipment to be used for spraying is checked by our inspectors to make sure it meets the requirements of this county and the State Department of Agriculture. The regulations on wind velocity plus governing the nozzle size, pressure, and gallons per acre minimizes the possibility of damaging drift. The person applying for a permit must list the crops adjoining the field to be sprayed. If the adjoining crop is susceptible to the injurious herbicide the permit may be refused or additional restrictions imposed.

The northern part of the county has been declared the "hazardous" area by the State Department of Agriculture because of the numerous commercial vineyards, which are highly susceptible to this material.

Within this area, no injurious herbicides were applied by aircraft between March 15th and October 15th, nor were any of these materials applied by ground rig within two miles of a commercial vineyard. For the purpose of protecting these vineyards, inspectors were constantly checking the spraying operations, and keeping a close watch for illegal spraying.

STANDARDIZATION

Fruit, Nut, Vegetable, Egg, and Honey

Standardization deals wholly with the inspection and certification of eggs, walnuts, honey, twenty important fruits, and sixteen major vegetables. All of these commodities are governed by separate and specific rules and regulations prescribed by the Agricultural Code. Falling under a general classification are all other fresh fruits, nuts, and vegetables being inspected for insect injury which has damaged the edible portion, worms, mold, and decay. Dried fruits, in addition to dates, are regulated as to deception, insect injury, and mislabelling.

Again, as in previous years, the enforcement of the Standardization laws was carried out by all members of the department in addition to their regular duties with this office. From the beginning of asparagus season to the end of the freestone peach harvest, conditions demanded numerous inspectors to be stationed throughout the county at shipping points. Since shipments were constantly flowing to re-distribution centers from early morning until far into the night, where it was practical and beneficial to continue inspections our inspectors worked. This inspection required morning and night shifts; thus, many hours of overtime were spent inspecting the asparagus, cherries, plums, peaches, and grapes to maintain higher quality and pack, and to further insure the consumer from any fraud, mislabelling or deception of these commodities. In this manner, not only the consumer was benefitted, but the shippers were assisted by receiving clearances on inspected produce, which enabled them to proceed directly to terminal markets without further delay and inspection at the State operated highway inspection stations. Nominal fees were charged to the grower and shipper for this service.

Marketing Orders

This is the third year this office was requested by the Fresh Peach and Plum Advisory Board Officers to undertake inspection of their commodities during the 1952 season. The Marketing Order was in effect from April 25th to October 31st.

Stockton's Marketing Center

The morning wholesale market, an association open to San Joaquin County farmers, opens at 4:00 AM each morning, and closes at 12 noon, operating the year around. Farmers bring their produce from all over the county to the market for shipping to other terminal

markets, or to be sold to local retailers. The market contains eleven produce houses, truck stalls, and unloading platforms; one new building was erected this year. In the summer months an average of 50 farmers' trucks are in the morning market during fruit harvest, decreasing in the winter to an average of 20 trucks a day. To maintain fruits and vegetables of high quality, one inspector spends most of his time in continuous inspection to enforce standardization requirements.

The afternoon market opens at 1:00 PM and continues, many times, until 9:00 or 10:00 PM. The afternoon market spans the months from the middle of asparagus harvest to the end of peach season. Four main trucking concerns ship fruits and vegetables to San Francisco, Oakland, and Los Angeles morning wholesale markets almost every night. With at least one inspector always checking produce on the loading docks, the vast majority of fruit leaving the county is inspected for conformity to standardization laws and compliance with various marketing orders. Nearly every truck is certified to eliminate delay at the State Highway Inspection Stations.

Wholesale Markets and Retail Stores

All wholesale establishments are inspected daily, since much of the produce is shipped here from other counties and other states. It is our policy, also, to inspect fruits, vegetables, eggs, and honey at retail stores, in order to assure the consumer produce of the highest quality. Some produce is brought directly from the fields to the store, evading previous inspection.

Fruit, Nut, and Vegetable

The asparagus crop is of major importance in this county with a bearing acreage of 53,798, and a total yield of 1,011,302 crates. Inspections were made at approximately 150 packing sheds starting the first part of March, and continuing through June. In March, there were some lots rejected for frost injury; however, the majority of rejections for the season were for deceptive pack and mislabelling.

Cherry harvest followed asparagus harvest from May until the first part of July. There were 141 lots rejected for such things as overtolerance of mold and decay, doubles, small sizes, brown rot, immaturity and deceptive pack, cracks, and splits. The main problem in cherry inspection was mislabelling due to the small size of the fruit.

Throughout June, July, August, September, and early October, freestone peaches for the market were inspected for standardization requirements, and also for compliance to the fresh peach marketing order. Rejections were made for numerous defects such as no markings, deceptive pack, split pits, bruises, worms, decay, mold, and brown rot. In September, due to the hot weather, several lots were rejected for over-ripeness.

Due to the unusual hot spell in September, there was considerable sunscald on tomatoes. An overtolerance of such things as overripeness, mold and decay was found in tomatoes for market this year.

Our department maintains an inspection station for watermelons in the southern part of the county. When an inspection was required, it was taken care of by the Manteca branch Agricultural Inspectors. Immaturity, overripeness, and rind rot were the reasons for rejections of watermelons this year.

The grape harvest required some standardization inspection also, which resulted in very few rejections. Immaturity was the only cause for rejections this year.

There is a continual inspection of potatoes throughout the year. Among the reasons for rejections were wet and dry rot, greening, mold, and decay.

This year, only 2 lots of sweet potatoes were rejected. The reason for the rejection was worms and insect injury.

Most of the celery grown in San Joaquin County is shipped east, so is Federal State inspected, and has caused no trouble under standardization law.

Egg Inspection

This year, with one and sometimes two inspectors working at crucial periods, 361 premises were visited and inspected. Egg wholesale establishments, grocery stores, and other places where eggs were offered for sale were routinely inspected for compliance with the standardization egg law. White and black lights (fluorescent) were used in candling a representative sample of 1,504 individual lots of eggs. Eggs were inspected for labelling, checking, spots, and all of the internal defects. A total of 55,889 dozen eggs were candeled with 1,180 dozen eggs found to be in violation of the egg law. Main defects found were blood spots, mislabelling, and adherent yolks, the latter being most prevalent during the hot summer months. No underweight eggs were found, and eggs this year, in general, were excellent in quality.

Honey Inspection

Throughout the year, a number of calls have been received by this office for general information concerning honey grades and marketing requirements.

Grapes for By-Products

Section 771 of the Agricultural Code provides that wineries purchasing grapes on a sugar content basis shall have an official test made on each load delivered. This year 6 wineries required the services of 18 authorized inspectors from this department. There were 31,849 soluble solid tests made, and 15,925 certificates of inspection issued at these wineries. There were 31% less soluble solid tests made and 29% fewer certificates issued than last year. The total cost to the different wineries requiring this service was $5,441 14.

Certification

The certification of agricultural produce represents one of the major activities of this department in standardization work. This is exemplified by the fact that 2,582 certificates were issued during the year. The certificate is of considerable importance, not only to facilitate movement of produce past state inspection stations but to insure the recipient at destination produce that meets minimum standards of the California Standardization Law. This service is of special importance to growers and shippers alike in this county since there is a heavy export of fruits and vegetables grown in San Joaquin County.

Standardization Statistics

	1951	1952
Number of Containers Inspected	8,220,458	3,251,772
Certificates Issued	2,665	2,582
Fees Received	$5,612.92	$6,514.50
Violation Notices Issued	487	482
Number of Containers Rejected	19,387	24,952
Court Cases	3	2
Amount of Fines	$265.00	$50.00

RODENT CONTROL

Ground Squirrels Citallus species

By the end of this year, field inspections showed the ground squirrel population in this county to be relatively low. This low population can be attributed to the constant efforts of this department to encourage farmers to destroy these pests at every opportunity. Although work of this nature is continuous throughout the year, maximum control is obtained in the late fall and early springtime. In order to provide properly prepared bait at a minimum expense to the farmer, all poison baits are prepared in the Agricultural Department's warehouse, and sold virtually at cost. During the year, 10,619 gallons of carbon bisulphide, and 10,553 pounds of poison bait were used to kill ground squirrels. Approximately 180,736 acres were poisoned with these materials.

Gophers Thomomys species

The gopher continues to be a nuisance to both residential and rural areas. The widespread trouble with this rodent has been evident by a number of requests for information on the control of this pest. The main type of service performed by this office throughout the year was educational, whereby instructions on placing traps, baits and various other methods used were given.

Rats Rattus species

One of the most disagreeable rodents to both city and county dwellings is the rat. Since they not only destroy food stuff but are carriers of serious diseases also, it has been our policy to encourage and assist in their control whenever possible. A boon to their

control has been the poison bait, warfarin. Since rats do not build up a tolerance or develop an aversion to this material, warfarin, properly applied, has brought havoc to the rat population. Throughout the year, numerous people, both from city and rural areas, have purchased quantities of this poison bait to control rat infestations on their property. During the year, 3,760 pounds of warfarin bait, prepared by this department, was sold. This year, a program of rat control was undertaken at the city dumps under the County Agricultural Department's supervision. Results have been highly successful.

Field Mice Microtus species

The voles that appeared in such large numbers last year have virtually disappeared this year. Apparently, through the heavy use of poison bait and natural enemies, the vole population in this county has been eliminated.

Coypu Myocastor coypus

An extensive aerial survey of the southeastern portion of the county was made this year to locate probable habitats of this large aquatic rodent. This work was carried out in conjunction with the State Department Bureau of Rodent Control. There have been a few reports given this office describing an animal which could have been a coypu. However, to date no concrete evidence has confirmed that this rodent has established itself within this county.

Rabbits Sylvilagus species & Lepus species

There has been nothing of an unusual nature as to problems with rabbits. No serious outbreaks have occurred. A few requests for information regarding the protection of crops have been received by our office.

WEED CONTROL

It is the policy of the San Joaquin County Department of Agriculture to help in every way possible the seemingly never ending fight against noxious weeds. Each year, farmers are becoming more interested in the control or eradication of weeds, especially deep rooted perennial weeds such as Johnson grass hoary cress, morning glory, Canada thistle, and Russian knapweed. Through more extensive control measures, many farmers are utilizing their land to a greater extent.

Special Weed Control Program

In 1947, a special weed control program was started in order to help eradicate or control the spread of noxious weeds. A major portion of this work is being done on the perennial weeds. County spray rigs patrol county and state roads throughout the growing season controlling the more serious noxious weeds, constantly on the alert for new or serious infestations. Most of the soil sterilization work is done during the winter months with

sodium chlorate and borax compounds. Further aid is extended to the farmer, in some cases, by the Production Marketing Administration, who give partial reimbursement on the cost of material and labor.

County Equipment

Since many farmers do not have their own equipment to control noxious weeds on their property, the county, through this department, has made powered spray rigs available. The farmer pays the operator's wage and material costs, and in this way saves the high cost of hiring the work done commercially or renting the equipment.

Education Work

To spread interest in the weed control program, informative talks have been given at farm meetings, on the radio, and through the newspapers and local journals.

ANNUAL WEEDS

Puncture Vine Tribulus terrestris

This is the most offending of the annual noxious weeds in our county. Unfortunately, puncture vine has gained a toe-hold in parts of the southern section of San Joaquin County on roadsides and some private property. The northern section of the county is relatively free of this pest, and special effort is being made toward control where light infestations appear. By steady vigilance and constant control measures, we hope to prevent further spread of this annual weed.

Yellow Star Thistle Centaurea solstitialis

Farmers find this weed to be a nuisance in pasture land, for the most part. Heaviest infestations are in the northern section of the county, and not too evident in the southern section. Sometimes it is difficult to obtain good control of this thistle, since it seems to prefer fence lines and ditch banks for growing grounds. However, control is much easier than in the case of puncture vine since it is more evident by its tall growth, and viable seed is not produced in as short a time.

Milk Thistle Silybum marianum

In some localities, milk thistle is disagreeable when it is allowed to mature. There have been a number of requests for us to control roadside infestations. Contact sprays are used to control this annual weed along with puncture vine, and yellow star thistle.

In the control of annual weeds, soil sterilants are used, as well as contact materials. Control work is started in the early spring for milk thistle and yellow star thistle. In early summer, puncture vine begins to appear. In each case, control work is started as soon as the weeds appear in order to obtain maximum kill.

PERENNIAL WEEDS

Johnson Grass *Sorghum halepense*

This weed is the most widespread, and causes the most trouble to farmers of this county. During 1952, 783 infestations were treated with borax-chlorate spray material. 247 of these infestations were eradicated. The most important factor in the control of this weed is the follow-up work. Eradication is virtually impossible with only one treatment.

Russian Knapweed *Centaurea repens*

This year there were 38 infestations in the county. One infestation has been eradicated, and control work continues on the remaining 37.

Canada Thistle *Cirsium arvense*

Canada Thistle has been proclaimed one of the most serious weed pests known to agriculture, but fortunately is found in only one location in San Joaquin County. This perennial weed is usually spread either by root expansion or by cultivation. The one infestation is still being treated with 2,4-D.

Horsenettle *Solanum* Species

Only a few small infestations are to be found in this county. Work is continuing on these infestations.

Hoary Cress *Cardaria* Species

This has proved to be a very difficult perennial weed to control probably due to the fact that during the growing season it stores food in its rootstocks so that the next year it is able to produce new plants from shoots sent out from the joints. There were 29 infestations this year of which one was eliminated.

Pepper Cress, Perennial *Lepidium latifolium*

This deep rooted perennial weed is not of wide distribution in this county. During the year, one out of four infestations has been eliminated. Both soil sterilants and contact materials were used.

Klamath Weed *Hypericum perforatum*

There were three new outbreaks this year. The largest of last year's infestations was eliminated by the Klamath Weed Beetle. The remaining roadside infestations are being treated with soil sterilants.

Wild Heliotrope *Heliotropium curassavicum*

There were 3 infestations found to be of nuisance, especially in vineyards. Carbon bisulphide was used with good results.

Bermuda Grass Cynodon dactylon

Infestations in agricultural areas were treated with soil sterilant material throughout the year. Eradication was accomplished on 12 out of 61 infestations.

County Roads and State Highways

Since roadside weeds spread onto adjoining property so readily, this department patrols all county roads with spray rigs at intervals to treat infestations, and also to keep weeds from going to seed; especially puncture vine and yellow star thistle.

The peak of the county road work was reached in June, July, and the first part of August. In the early part of the year, the burning method was used to kill weeds along a total of approximately 1,485 miles of roadside weed infestations. During the winter months, perennial noxious weeds were treated with soil sterilants. Results from the soil sterilant work have been very encouraging, since a number of infestations have been eradicated in this manner.

In addition to the county road work, state highways are patrolled. An agreement was made between the State Highway Department and this department to control weeds on State Highway roadsides; thus, over 10,000 miles were patrolled.

Railroads

Again this year, five of the six railroads within San Joaquin County agreed to control noxious weeds on railroad right of ways. The equipment and labor crews were furnished by this office. The cost of this work was paid by the railroads. Formerly the railroads were interested in controlling only the weeds between the tracks and a narrow strip on each side. Now the agreement between the Department of Agriculture and the railroads is for weed control of the entire right of way, including such weeds as Johnson grass, Russian knapweed, hoary cress, perennial pepper cress, white horsenettle, and any other weed of a serious nature. Negotiations are continuing with the one remaining railroad which has not entered an agreement with us for a weed control program.

Material Used in Weed Control Program

The annuals, puncture vine and yellow star thistle were sprayed with an oil emulsion composed of 10 to 30 gallons of oil, one quart of dinitro general, detergent, and water to make a 100 gallon mix. During cool weather, large proportions of oil were used, and during warm weather, a minimum amount of oil was used in the mixture. A borax-chlorate compound and 10% weed oil were also used on these two weeds with excellent results. Sodium chlorate and borax-chlorate, approximately 15 pounds per square rod, were used to treat perennial noxious weed infestations. Most of the work on perennial weeds was done during the fall and winter months.

Selective and General Weed Spraying

Selective weed spraying is steadily gaining popularity in eliminating weeds from such crops as grain, rice, celery, carrots, and alfalfa. Commercial pest control operators, and individual farmers owning their own spray equipment have sprayed thousands of acres of crop land in this county this year. Many of these selective weed spraying practices have eliminated cultivation for weed growth entirely. General weed spraying has been steadily insreasing in popularity because weeds growing in areas where cultivation was difficult or impossible could be eliminated through chemical treatment. Weeds growing along fence lines, ditch banks and on cultivated areas were found to harbor insects as well as being a means of disseminating weed seeds into crop lands. Controlling weeds of this nature has proved to be profitable to the farmer. In a number of cases, unsightly weeds growing in yards around packing sheds and other buildings in farming districts have been treated with soil sterilants, reducing fire hazards and the cost of hoeing. The economy of properly controlling weeds, whether they be of noxious nature or just general vegetation, has been proved time and again, and the farmers, land owners, and other agencies are becoming more and more interested in this type of work.

Experimantal Work

Since this department is engaged in extensive chemical weed control work, both on private and public land, it is of paramount importance to use the most effective materials and methods to obtain maximum results with minimum cost. Although there is a substantial quantity of literature written on these herbicides, many pertinent facts concerning their value to specific conditions found in this county are not available. Furthermore, each year finds a number of new chemicals placed upon the market for weed control; even less is known about the new chemical's weedicidal properties. Thus, it is evident that only through experimental work can a more accurate conclusion be acquired to further the most successful weed control program possible.

This year, test plots were made using the following materials or combination of materials:

Borax Compounds	Oil Emulsions	Sulphur
Sodium Chlorate	Dinitro Compounds	Thalic Acid
I.P.C.	Oil and Penta	Malic Hydrazide
T.C.A.	Chloro-phenol	2,4-D
C.M.U.		

The test plots of these materials, in many cases, are still being observed as to results. A special burner was constructed to determine its value in the use of oil or butane. Up to the present time, 94 test plots have been made using the materials listed above on various noxious weeds throughout the county.

SEED AND GRAIN INSPECTION

The prevention of the introduction of noxious weed seed into San Joaquin County is accomplished by inspection of seed shipments for planting, and also by inspection of bulk and sacked grain which is used for feed. The authority for this inspection is covered by Chapter 5, Section 125 of the State Agricultural Code. The seed is also checked to determine if all requirements of the California Seed law are met. Shipments of grain and seed by common carrier are held for inspection before being released to the processor or retailing establishment for processing. Our office is notified by these common carriers upon arrival of shipments, thus facilitating grain and seed inspection.

Agricultural and Vegetable Seed Inspection

One of the important duties of this office is to prevent the introduction of noxious weed seeds into this county. Periodic inspection of seed houses is maintained throughout the year, especially to check the germination date since it is effective only for a given length of time. This year, 431 lots of agricultural and vegetable seed were inspected in this county. There were several lots rejected for mislabelling. These lots were held pending their proper labelling.

Grain Inspection

The milling companies in this county received numerous shipments of bulk grain for processing into feed during the year. Due to the fact that milling of this grain does not always kill the germ plasm of noxious weed seeds contained in infested shipments, this department supervises the cleaning and handling of the contaminated grain. When it is determined by sampling that a lot is contaminated, the shipment is rejected under the condition that the mill handle the lots so as not to disseminate the pest. Grain lots found infested with pests are disposed of by appropriate methods of cleaning, grinding, or burning. Correlated with this preventive program is the chemical weed spraying program, with the eventual goal of complete eradication of noxious weeds in San Joaquin County.

	Lots Passed	Lots Rejected	Total Lots Inspected
Interstate	622	378	1,000
Intrastate	695	13	708

Lots Rejected in Tonnage:

Tonnage	Reason for Rejection	Disposition
750 Tons	Canada Thistle	Recleaned or diverted
250 Tons	European Corn Borer	Secure proper certificate & cleaned & ground & debris burned
100 Tons	Morning Glory	Cleaned or ground
150 Tons	Russian Knapweed	Exported
16,150 Tons	Johnson Grass	Cleaned & ground or burned
300 Tons	White Horsenettle & Johnson Grass	Cleaned & ground or burned

Screenings

Throughout the year, screenings at the 5 warehouses were inspected for noxious weed seeds. Those lots found infested were rejected and the required sixty days was given to the owner to dispose of the lot by recleaning, grinding, or burning. Out of the 13,907 sacks of screenings inspected, 9,602 sacks were rejected for noxious weed seeds. These rejected sacks of screenings were disposed of by recleaning and grinding or dehydrating.

The following weed seeds were present in lots rejected:

Number of Sacks	Kind of Noxious Weed Seed	Disposition
6,427	Johnson Grass	Burned or ground
1,825	Johnson Grass & White Horsenettle	Burned or ground
430	Morning Glory	Diverted to Processor or ground
360	Canada Thistle	Burned or ground
560	Russian Knapweed	For export only

Seed Certification

The purpose of seed certification is to maintain and make available to the public, high quality seed and propagating materials of superior crop plant varieties so grown and distributed as to insure genetic identity and purity. Only those varieties that contain superior germ plasm are eligible for certification.

This office has complete authority to safeguard, by suitable measures, the identity of seed intended for certification. To insure proper identity, this office inspected harvesters wherever necessary for the presence of any foreign seed; also all processing equipment must be cleaned thoroughly to avoid contamination of the certified seed, and approved by this office before cleaning operations on certified seed starts.

Whenever a request is made to move seed subject to certification prior to final tagging, this office issues an intercounty permit with the necessary information to the commissioner at destination. This county also requires a permit whenever seed subject to certification, arrives here.

After a lot has met all preliminary requirements, a sample is drawn in the same manner as an official sample is drawn, with one sealed portion going to the California Crop Improvement Association and one sample being retained by this office. Upon notification from the California Crop Improvement Association that the lot has met the requirements of certified seed, the lot is tagged and sealed under the supervision of this office. These tags and seals are furnished by the Crop Improvement Association.

Many lots of certified seed grown last summer have not been processed. However, 193 samples have been drawn this year consisting of beans, clover, alfalfa, sudan grass, barley and wheat. Beans and ladino clover are the two main seed crops of this county.

APIARY INSPECTION

The purpose of bee inspection is to prevent the introduction and spread, within the county, of diseases injurious to bees, maintain a registration list of apiaries, issue certificates of inspection, and properly dispose of all American Foulbrood colonies. This year, through the cooperation of the State Department of Agriculture, a Deputy State Bee Inspector was assigned to this area for three months. This deputy worked with all district inspectors checking colonies in the various districts.

This year, there were 73% more colonies inspected and 78% more colonies infected with American Foulbrood which were burned. This increase in American Foulbrood colonies that were destroyed was due to one beekeeper who was treating over 100 colonies for this disease. The following is a report disclosing the amount of work done in this field during 1952:

Type of Work	Number of Apiaries	Number of Colonies
Registered	52	2,907
Entering California	0	0
Leaving California	0	0
Entering County	23	1,785
Leaving County	29	3,160
Moving Within County	12	542
Inspected	136	7,656
Infected with American Foulbrood	18	204
Infected with European Foulbrood	39	93
Burned for American Foulbrood	18	204

COOPERATION WITH BUREAU OF MARKET ENFORCEMENT AND BUREAU OF MILK CONTROL

Investigations, hearings, and procedures set forth under the Produce Dealer's Act, the Processor's Law and Milk Control Law resulted in a net remittance of $39,981.85 to growers of this county.

Whenever controversies arise between growers and dealers or processors, the County Agricultural Commissioner's Office extends every possible effort to aid the Bureau of Market Enforcement by collecting necessary evidence concerning these cases. With this evidence, it is possible to offer a thorough presentation of facts on both sides resulting in a fair readjustment to all concerned. Many of these complaints are first received at this office and then all details concerning the complaint are transmitted to the bureau.

All buyers of farm commodities must be licensed by the Bureau of Market Enforcement. This applies to cash buyers as well as others. The county department assists the bureau in seeing that all these buyers are properly licensed, and also maintains a special office in the Agricultural Building for state officials for the purpose of holding hearings or any other activity which requires office space.

Recoveries effected by the Bureau of Market Enforcement for the benefit of San Joaquin County Growers during 1952 are as follows: These recoveries consist of amounts paid by licensees following complaints by growers of failure to pay or failure to perform in accordance with contracts.

	Number of Participants	Amount Received
Produce Dealers	72	$13,441.69
Processors	22	25,122.79
Milk Recoveries	80	1,417.37
Total	174	$39,981.85

FAIRS AND EXHIBITS

The fair activities of this department were curtailed extensively this year, since San Joaquin County did not enter the State Fair. However, an entry was made at the San Joaquin County fair last summer, which was a large book showing the departmental duties.

MISCELLANEOUS DEPARTMENTAL DUTIES

In order to give the farmers of San Joaquin County the best possible service, the members of this department have various duties which they perform in addition to their regular duties. Each of these activities is designed to offer the agriculturalist more complete service.

Identification of Insects, Diseases, and Plants

Throughout the year, many insects, plants or plant diseases are brought in to be identified. This is an important function of our office since it is closely related to quarantine and nursery inspection, field and orchard inspection, plant pest control and weed control. Only after identification, can control of the pest be recommended. Sometimes, in this way, the spread of a serious pest can be stopped. If positive identification cannot be made, the specimen is sent to an insect taxonomist, plant pathologist, or plant taxonomist of the State Department of Agriculture.

Farm Meetings

Inspectors from this department attend farm meetings from time to time in order to keep in close contact with the problems and needs of the farmers of the county. These meetings also provide excellent opportunities to introduce educational programs in pest control work sponsored by this office.

Photographic Work

Photographs are used by this department as a method of recording agricultural information for later reference. The photographs are taken by our personnel and developed in our own dark room, which

saves time and money. In 1952, 488 black and white, and 870 color slides were developed here. One hundred color prints and 500 of the 870 color slides were of different fruit varieties. These are to be used as an aid in identification of varieties. Occassionally some of the black and white prints are submitted as evidence in cases where departmental enforcement of agricultural law is required. The foremost purpose of the photographs is for visual education at farm group and other meetings.

Soil Tests

Many times the presence of alkali or too much salt concentration will cause plants to be dwarfed or to die. This service is performed in our own laboratory as an aid to the inspectors in making recommendations of treatments to be used.

Special Agricultural Reports

Agricultural statistics on crops grown in San Joaquin County are gathered by our inspectors throughout the year from all districts of the county, and kept on file at this office. From time to time, canners, farmers, newspapers, and agencies of various kinds request information regarding a certain crop or condition of a crop. Due to the rapid change of conditions of the different crops, these statistics are very important in planning for the future.

Spraying of County Shade Trees

Once again, this department sprayed county sycamore trees for sycamore scale in order to prevent losses. This year, 595 sycamore trees were treated with 8,550 gallons of a dormant oil spray mixture.

Shop Work

The Agricultural Department has its own shop where spray rigs used for the county's special weed control program are kept in repair and cleaned daily. Some of the equipment used for this purpose was assembled by our personnel. Also all fair exhibits are designed and built here. Since most of the moving parts necessary in a fair exhibit are not available commercially, the shop personnel assembles them.

Staff Meetings

Inspectors' meetings are held at this office periodically throughout the year. These meetings are important to departmental policies and activities because they give the inspectors a chance to discuss problems of the department, changes in laws, and activities of each district in the county. In this way, more uniform service can be given to the farmer.

Weather Reports

Once each week during the summer months and once each month during the winter months, weather reports are sent to the United States Weather Bureau. These reports show crop growing conditions in this county and how they are affected by weather changes.

FINANCIAL REPORT SUMMARY
FOR FISCAL YEAR ENDING JUNE 30, 1952
AGRICULTURAL DEPARTMENT & SPECIAL WEED CONTROL

CLASSIFICATION		
Administration	$ 22,761.15	
Plant Quarantine, Seed and Nursery Inspection	19,146.78	
Fruit, Nut, Vegetable, Honey and Egg Standardization	15,050.30	
Field and Orchard Inspection	13,745.81	
Apiary Inspection	886.13	
Rodent Control	10,180.64	
Weed Control	17,352.00	
Crop Statistics	12,214.67	
Fairs and Exhibits	1,023.89	
General	3,846.18	
		$ 116,207.55
COLLECTIONS REMITTED TO COUNTY TREASURER		$ 16,128.09

SPECIAL WEED CONTROL BUDGET

Salaries and Wages	$ 41,305.11
Maintenance and Operation	22,559.81
Capital Outlay	3,005.10
	$ 66,870.02

CROP SUMMARY
SAN JOAQUIN COUNTY - YEAR 1952

Climatic conditions are of major importance to agricultural crops ... since there is a lot of variance in these conditions within the ... itself, the progress trend report of any given crop herein can ... general.

During January and February, farm operations were slowed consid... due to an excessive moisture condition. Preparations of seed ..., winter plantings and pruning activities were held up because of ... condition. There was rain and frost intermittently throughout ... two month period.

Almonds were starting to bloom the first part of March, peach ... were in the pink bud stage and cherry buds were starting to ... On March 14th there was a wind and rain storm with winds ... a peak of 60 miles per hour. Approximately 3,000 fruit and ... trees throughout the county were blown down by the storm which, ... was the worst since 1938. The biggest percentage of this ... was almond trees. A hail storm on the following day caused ... damage to almond blossoms. Farm operations in general the first ... of March were at a standstill. The balance of the month was ... with no rain which gave excellent growing conditions to all crops.

There were light rains and some frost in April which delayed the ... of the soil for vegetable crops such as tomatoes, celery ... potatoes. However, field crops and pastures were benefitted by ... light rains and cool overcast weather. Most orchards had produced ... spread of blossoms by April; celery seed beds, tomatoes, and ... were planted; harvest of asparagus, spinach and grain hay ... started.

On May 4th a heavy frost occurred causing damage to potatoes, ..., melons, sweet potatoes and grapes. On May 25th a 150 foot ... in the levee near Lockeford damaged an estimated 700 acres of ... in that area. Harvest began in peas, onions and cherries in ... month. The last 3 weeks of May had very favorable weather for ... and excellent progress was made.

...out June the days were warm and the nights remained cool ... retarded growth and development of melons, tomatoes, and hay ... A normal amount of setting of fruit on tomato vines was pre... by these low temperatures. June 2nd a break in the levee ... Mossdale Y resulted in the flooding of approximately 4,000 ... farm land in the Tracy district. Due to the rapid draining ... flood waters, crops were not total losses except for tomatoes. ... was a light rain June 9th, but no damage to agricultural crops ... ...ted.

..., August, and September brought very warm weather. Excel... conditions prevailed throughout July, August and the ... of September. However, excessive heat during the latter ... September caused considerable loss of tomatoes due to sun... ...scald and through the inability of growers and processors ... ...ace with the rapid development of the fruit.

Weather remained warm and dry until November 12th when there was a general rain for four days followed by daily morning frost. By the end of November, temperatures were reported as low as 27° F. However, by the time these heavy frost and rains did occur, almost all crops susceptible to damp weather had been harvested. In December, there were rains and intermittent frosts throughout the month.

The following is a report covering a general summary of the important crops in San Joaquin County for 1952:

FRUIT AND NUT CROPS

Almonds

The set of the nuts varied considerably which can be attributed to the imperfect pollinization due to the wet weather at blossom time. This resulted in a tonnage decrease of 530 tons under the previous year even though the acreage increased 142 acres. Price remained about the same.

Apricots

Yields were good this year. The tonnage to the processors remained about the same; however, the price dropped $25.00 per ton. The tonnage of dried apricots was very small and the price increased $100.00 per ton.

Cherries

There was a heavy crop of cherries which resulted in smaller sizes. Also brown rot and immature doubles was heavy. The Royal Anns increased approximately 1,200 tons to processors but price dropped $150.00 per ton. Black varieties increased 3,034 tons to processors. Market conditions were only fair with a drop of $148.00 per ton; however, there was an increase of 1,076 tons for shipping.

Chestnuts

A severe heat spell during the summer while the nuts were filling reduced the size of the nuts. Consequently, tonnage was lower. The major portion of the crop was sold within the state eliminating eastern shipments. The large size nuts sold at fairly high prices but the demand for small nuts was poor.

Figs

There was an increase of 258 tons over the previous year; none were shipped to eastern markets. The price on processed fell $18.00 per ton and $80.00 per ton on dried.

Grapes

The quality was good, color and sugar content normal, but price took a very sharp drop. The Tokay shipments to eastern markets increased 603,529 packages over the previous year with a decrease of

thirty cents per package. The tonnage of Tokays to wineries dropped 29,097 tons with a decrease of $3.45 per ton under last year. In juice grapes, shipping to eastern markets was 34,150 tons or a drop of 2,808 tons under the previous year. Also, the price dropped $30.00 per ton. Shipments of juice grapes to the winery totaled 118,559 tons, a decrease of 11,429 tons with a drop in price of $6.75. Growers enjoyed ideal harvesting conditions.

Olives

The acreage remained the same in the county with yield still low although slightly higher than the year before. The price was reduced drastically to about half or a $144.00 per ton drop.

Peaches

This crop, as a whole, was good in quality; however, brown rot and mildew was quite prevalent this year. Freestone shipping peaches increased 11,148 packages over the year before, also processed freestones increased 5,552 tons. However, in both cases prices declined. The relatively small tonnage of freestones for drying increased in price $100.00 per ton, but dropped 279 tons under last year. The cling peach tonnage decreased 8,520 tons and the price dropped $12.50 per ton.

Pears

Most of this crop went to the processors, a total of 923 tons. This represented an increase of 453 tons to the canners; however, the price dropped $50.00. 114 tons of pears were shipped to market.

Plums

Rains and frost at blossom time caused a sharp decline in yield in many varieties. There was a sharp decline of 96,018 packages in shipping plums. Market demands were very strong throughout the season. Price increased $1.75 per crate over last year.

Walnuts

Size was better than average; however, the cull out was about 50% greater due to heat damage. Also more worm damage was experienced. The tonnage for the county dropped 1,400 tons; also the price declined $30.00 per ton.

FIELD CROPS

Alfalfa Hay

In general, yield and quality for the year were both good. Prices were higher than last year with strong demands for hay throughout the season. The first and third cutting suffered some damage in color from weather conditions; however, losses were not too great. There was an increase of 7,084 acres over the previous year.

Beans

The bean acreage decreased 6,415 acres, with the largest acreage drop occurring in blackeyes and baby limas. Yields and quality were slightly lower than last season; however, bean growers, for the second year, enjoyed favorable weather conditions at harvest time.

Field Corn

The quality and yield were normal with prices remaining about the same as last season. Corn acreage increased approximately 2,025 acres over the previous year.

Grain Crops

Grain farmers experienced a very good season. The quality of barley, wheat, and oats was normal with market demands good all season. Barley and wheat acreage increased 24,120 with barley having the largest acreage increase of approximately 17,000 acres.

Hay

The total acreage of volunteer and grain hay continues to decrease, approximately 1,000 acres lower than last year. Quality and yields were normal with prices higher in 1952.

Pasture

The acreage growth of irrigated pastures in San Joaquin County has been phenomenal these past few years. In 1940, there were 17,898 acres of ladino clover. This crop has continued to increase to the present peak of 86,116 acres. This is an increase of 9,557 acres over last year. Range pasture conditions were normal with feed value being excellent.

Potatoes

Potato growers enjoyed an excellent season in all respects. Market prices were high and demands were very strong throughout the harvest period. The price per sack averaged $1.40 higher than the 1951 season. Quality and yield were good.

Rice

There was an increase of 1,781 acres over last season. Yields were good with prices per sack higher. There were some difficulties experienced by growers in harvesting their crop because of the rains in November; however, ideal weather which followed made it possible for the majority of growers to harvest these crops without too much trouble.

Sunflower

Yields of sunflower seed varied from field to field with good quality predominating. The average yield of 11 sacks per acre this year was the same as the previous season. The big change from last year in the sunflower crop was the increase of 1,593 acres.

Sweet Potatoes

Market demands during the harvest period were strong. The $3.50 per basket this year represented a fifty cent increase over the previous year. The quality, size and yield were normal.

VEGETABLE CROPS

Asparagus

Again in 1952, as in 1951, the cannery season got off to a slow start in the latter part of April. Intermittent cold periods slowed up production at times. There was a reduction of 4,125 tons of cannery asparagus from the 1951 season. Quality for the season was good; however, prices in both cannery and fresh shipments were lower. There was an increase of 226 bearing acres of asparagus over the 53,572 acres of last year.

Carrots

Most of the carrots went for fresh market produce. There was a slight increase in acreage; however, market demands were only fair with prices lower than last season.

Celery

Market demands for celery this year have been poor, resulting in low prices. Market prices declined from $2.40 to $2.10 per crate. The frosts of last November required more trimming of the celery which increased package cost. By the end of the year, 229 acres were still in the fields to be harvested. Celery acreage decreased 147 acres below the year before.

Melons

Growers enjoyed a long harvest and strong market demands all season. Price differed with the varieties of melons. Watermelons showed the largest price gain with an increase of $12.40 per ton over last year. The melon acreage decreased 489 under the 1951 acreage of 3,489 acres.

Onions

The onion acreage increased 422 acres over the previous year's 2,330 acres. Most of the crop went to fresh market. However, there were approximately 230 acres of onions which went to dehydration plants.

Peas

All of the pea crop went to the canners. The 1,470 tons to canners was an increase of 215 tons over the year before. Cannery prices were slightly lower this year.

Spinach

The spinach acreage remained about the same, with most of the crop going to processors. Yield and quality were practically the same as last year.

Strawberries

The county acreage increased 102 acres. Price and yield remained about the same as in 1951.

Tomatoes

The quality of the crop declined slightly. The major defects were sunburn and overripeness due to unusual hot weather in September. Growers again enjoyed a long harvest period. The yield per acre remained about the same as the year before. Since there was a decrease of over 8,276 acres of tomatoes in this county and a reduction of $5.00 per ton on the round tomatoes, the total overall value of the county's tomato crop dropped nearly 6½ million dollars to a 17½ million dollar crop.

FRUIT AND NUT CROPS
N JOAQUIN COUNTY
YEAR - 19[illegible]

CROP		BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
A[illegible]		8,943	.61	5,455	Ton	$480.00	$ 2,618,400
	Ship.		4.55	5,246	28# Pkg.	1.50	7,869
A[illegible]	Proc.	1,153	3.90	4,497	Ton	80.00	359,760
	Dried		.07	81	Ton	600.00	48,600
Ch[illegible]	Royal	1,085	5.10	5,533	Ton	150.00	829,950
C[illegible]	Ship.	2,694	2.02	5,442	Ton	370.00	2,013,540
Ch[illegible]	Proc.		1.60	4,310	Ton	150.00	646,500
Ch[illegible]		108	1.00	15285 108	Ton	300.00	3[illegible] 32,400
	Ship.		.04	16	Ton	80.00	1,280
F[illegible]	Proc.	410	1.74	713	Ton	126.00	89,838
	Dried		.34	139	Ton	120.00	16,680
G[illegible]	Ship.	32,217	1.06	34,150	Ton	80.00	2,732,000
[illegible]	Wine		3.68	118,559	Ton	21.75	2,578,658
G[illegible]	Ship.	22,759	277.16	6,307,884	28# Pkg.	1.45	9,146 432
[illegible]	Wine		5.15	117,209	Ton	17.15	2,010,134
H[illegible]	Ship.	1,697	32.42	55,017	28# Pkg.	1.75	96,280
A[illegible]	Wine		5.75	9,758	Ton	20.00	195,160
M[illegible]	rchards	188			Acre	200.00	37,600
[illegible]		79	550.00	43,450	28# Pkg.	1.35	58,657
[illegible]		373	1.25	466	Ton	110.00	51,260
	Ship.		113.80	251,498	20# Pkg.	1.25	314,372
P[illegible]	Proc.	2,210	6.18	13,658	Ton	53.15	725,923
	Dried		.17	376	Ton	400.00	150,400
	Proc.	5,789	9.37	54,243	Ton	65.00	3,525,795
	Dried			5	Ton	240.00	1,200
	Ship.	90	1.27	114	Ton	30.00	3,420
	Proc.		10.26	923	Ton	50.00	46,150
P[illegible]	Ship.	878	100.00	87,800	28# Pkg.	3.95	346,810
	Proc.		.08	70	Ton	40.00	2,800
	Ship.	283	104.75	29,644	28# Pkg.	3.70	109,683
	Proc.		.37	105	Ton	220.00	23,100
[illegible]		11,935	.67	7,996	Ton	420.00	3,358,320
						TOTAL	$32,178,971

FIELD CROPS
SAN JOAQUIN COUNTY
YEAR - 1952

CROP	BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Alfalfa Hay	61,460	6.50	399,490	Ton	$ 32.00	$12,783,680
Barley	87,230	19.00	1,657,370	CWT	3.15	5,220,715
Beans, Dry	13,365	14.35	191,788	CWT	10.50	2,013,774
Bean Straw	8,500	.75	6,375	Ton	18.00	114,750
Corn, Grain	13,580	1.25	16,975	Ton	70.00	1,188,250
Corn, Husks			198	Ton	600.00	118,800
Grain, Sorghum	2,165	20.00	43,300	CWT	3.25	140,725
Hay, Grain	8,000	1.50	12,000	Ton	27.50	330,000
Hay, Wild	12,470	1.25	15,587	Ton	25.00	389,675
Oats	9,510	8.50	80,835	CWT	3.50	282,922
Pasture Range	203,180			Acre	4.00	812,720
Pasture Clover	86,116			Acre	45.00	3,875,220
Pasture Sudan Grass	1,850			Acre	35.00	64,750
Pasture Stubble	126,055			Acre	1.50	189,082
Potatoes	5,214	336.00	1,751,904	CWT	3.75	6,569,640
Pumpkin Canning	680	12.38	8,418	Ton	9.00	75,762
Pumpkin Stock		10.00	6,800	Ton	3.00	20,400
Rice	9,975	38.00	379,050	CWT	5.75	2,179,537
Silage, Corn	1,585	16.50	26,152	Ton	8.00	209,216
Sugar Beets *	11,891	17.18	204,287	Ton	14.95	3,054,091
Sunflowers	3,490	11.00	38,390	CWT	8.50	326,315
Sweet Potatoes	1,005	225.00	226,125	Bskt	3.50	791,437
Wheat	11,985	11.25	134,831	CWT	3.75	505,616
					TOTAL	$41,257,077

* Includes Federal Subsidy

VEGETABLE CROPS
SAN JOAQUIN COUNTY
YEAR - 1952

CROP	BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Asparagus Ship.	53,798	18.80	1,011,402	30# Pkg.	$ 3.95	$3,995,038
Asparagus Proc.		.71	38,197	Ton	191.45	7,312,816
Beets, Table	100	15.00	1,500	Ton	25.00	37,500
Broccoli	410	2.00	820	Ton	140.00	114,800
Cabbage	50	300.00	15,000	Pkg.	1.50	22,500
Cauliflower	17	300.00	5,100	Pkg.	1.50	7,650
Carrots	590	12.00	7,080	Ton	45.00	318,600
Celery	3,580	372.00	1,331,760	Pkg.	2.10	2,796,696
Corn, Sweet	600	160.00	96,000	Pkg.	1.75	168,000
Cucumbers	223	5.10	1,137	Ton	48.15	54,747
Garlic	4	100.00	400	CWT	15.00	6,000
Lettuce	120	225.00	27,000	Pkg.	1.75	47,250
Melons Cranshaw	140	9.00	1,260	Ton	35.50	44,730
Melons Cantaloupe	360	175.00	63,000	Pkg	1.85	116,550
Melons Casaba	480	7.00	3,360	Ton	20.00	67,200
Melons Honeydew	300	6.00	1,800	Ton	25.00	45,000
Melons Persian	40	9.00	360	Ton	25.00	9,000
Melons Watermelon	1,670	14.50	24,215	Ton	32.00	774,880
Onions Early	1,495	550.00	822,250	50# Sk.	1.75	1,438,937
Onions Late	1,257	600.00	754,200	Sk.	1.90	1,432,980
Peas Proc.	980	1.50	1,470	Ton	70.60	103,782
Peppers	244	12.15	2,965	Ton	74.90	222,078
Spinach	903	5.00	4,515	Ton	25.00	112,875
Squash	405	10.00	4,050	Ton	18.00	72,900
Strawberries	510	1,160.00	591,600	12 Bskt.	2.30	1,360,680
Tomatoes Ship.	32,760	38.96	1,276,330	32# Pkg.	2.50	3,190,825
Tomatoes Round		16.00	524,160	Ton	25.00	13,104,000
Tomatoes Pear	2,550	16.00	40,800	Ton	30.00	1,224,000
Truck Garden Misc'l Vegetables	980			Acre	250.00	245,000
					TOTAL	$38,447,014

SEED CROPS
SAN JOAQUIN COUNTY
YEAR - 1952

CROP	BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Alfalfa Seed	882	533.00	470,106	Lb.	$ .38	$ 178,640
Asparagus Roots	250			Acre	420.00	105,000
Asparagus Seed			6,000	Lb.	2.00	12,000
Beans:						
*Blackeyes Certified Seed						28,500
*Dark Red Kidney Certified Seed						157,000
*Light Red Kidney Certified Seed						960,000
*White Kidney Certified Seed						13,000
Cantaloupe Seed	7	1,000.00	7,000	Lb.	.48	3,360
Castor Bean Seed	69	2,063.00	142,347	Lb.	.10	14,235
Ladino Clover Seed	2,356	169.00	398,164	Lb.	.90	358,348
Millet Seed	140	1,500.00	210,000	Lb.	.05	10,500
Nursery Stock: Grape Vines						11,835
Nursery Stock: Other Trees						175,000
Onion Seed	8	400.00	3,200	Lb.	1.00	3,200
Popcorn Seed	18	1,670.00	30,060	Lb.	.08	2,405
Potato Seed	767	267.00	204,789	CWT	5.00	1,023,945
Safflower Seed	931	1,235.00	1,149,785	Lb.	.048	55,189
Squash Seed	25	213.00	5,325	Lb.	.42	2,236
Sudan Grass Seed	530	11.00	5,830	CWT	11.00	64,130
Watermelon Seed	59	319.35	18,842	Lb.	.29	5,464
					TOTAL	$3,306,487

* Accurate prices and production figures are not available at this time. Total income for these four crops is estimated.

PERMANENT CROPS IN SAN JOAQUIN COUNTY
YEAR - 1952

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
ALMONDS		
Drake	2	364
Eureka	0	1
I.X.L.	0	111
Jordanola	298	516
Mission	354	3,241
Ne Plus Ultra	76	526
Non Pareil	668	3,791
Peerless	36	349
Other	3	44
Total	1,437	8,943
APPLES		
Astrachan	0	10
Golden Delicious	0	0
Other	0	2
Total	0	12
APRICOTS		
Blenheim & Royal	11	642
Moorpark & Hemskirk	0	8
Tilton	82	502
Other	0	1
Total	93	1,153
CHERRIES		
Bing	247	1,576
Black Republican	1	27
Chapman	11	156
Lambert	20	267
Royal Ann	192	1,085
Tartarian	45	592
Other	56	76
Total	572	3,779
CHESTNUTS (All)	3	108
FIGS		
Black	0	31
Kadota	0	379
Total	0	410
FILBERTS (All)	0	1

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
GRAPES (Raisin)		
Muscat	0	201
Thompson Seedless	54	646
Zante Currant	0	8
Total	54	855
GRAPES (Table)		
Cardinal	27	12
Concord	0	6
Emperor	0	205
Malaga	0	107
Ribier	0	150
Tokay	266	22,759
Other	0	412
Total	293	23,651
GRAPES (Wine)		
Alicante	2	5,067
Burger	0	926
Carignane	226	7,762
Colombar	0	30
F. Reisling	0	10
Golden Chasselas	0	80
Grenache	2	982
Mataro	0	31
Mission	10	1,783
Palomino	0	1,138
Petite Sirah	0	382
Sauvignon Blanc	0	23
Zinfandel	61	13,179
Other White	0	148
Other Dark	35	676
Total	336	32,217
	54	
	293	
	683	
NECTARINES		
John Rivers	2	15
Other	16	64
Total	18	79
OLIVES		
Ascalono	0	74
Manzanillo	45	85
Mission	19	198
Other	0	16
Total	64	373

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
PEACHES (Cling)		
Andora	29	111
Carolyn	10	70
Cortez	117	41
Fortuna	36	182
Gaume	220	1,063
Gomes (Stuart)	111	461
Halford	208	1,328
Johnson	0	125
Libbee	0	52
Palora	236	1,101
Peak	17	212
Phillips	4	474
Sims	0	79
Walton	18	57
Other	130	433
Total	1,136	5,789
PEACHES (Free)		
Babcock	1	4
Crawford	0	3
Early Elberta	7	21
Elberta	174	924
J. H. Hale	21	158
Lovell	1	280
Muir	0	170
Salway	1	20
Other	88	630
Total	293	2,210
PEARS		
Bartlett	43	85
Beurre Hardy	0	5
Total	43	90
PERSIMMONS (All)	0	8

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
PLUMS		
Beauty	0	3
Burbank	0	10
Climax	0	8
Duarte	16	108
Grand Duke	0	3
Kelsey	0	9
President	3	104
Santa Rosa	41	240
Tragedy	12	231
Wickson	0	3
Other	52	159
Total	124	878
PRUNES		
French	0	41
Imperial	0	2
Robe DeSergeant	0	9
Sugar	10	231
Total	10	283
QUINCES (All)	0	11
WALNUTS		
Concord	3	47
Eureka	173	2,896
Franquette	220	3,172
Hartley	504	159
Mayette	9	744
Payne	349	4,589
Placentia	0	87
Other	67	159
Seedling	152	82
Total	1,477	11,935
BLACK WALNUTS	~~544~~ 2021	156
ASPARAGUS	6,829	53,798

THE TREND OF FRUIT & NUT CROPS IN SAN JOAQUIN COUNTY
AT FIVE YEAR INTERVALS

BEARING ACREAGE

CROP	YEAR 1937	YEAR 1942	YEAR 1947	YEAR 1952
Almonds	3,760	4,760	7,264	8,943
Apples	32	31	36	12
Apricots	1,776	1,718	1,890	1,153
Cherries	4,485	4,173	4,134	3,779
Chestnuts	224	171	150	108
Figs	524	510	510	410
Grapes, Juice	34,167	31,792	31,937	32,217
Grapes, Raisin	902	991	863	855
Grapes, Table	1,627	1,381	1,205	892
Grapes, Tokay	17,474	17,350	18,960	22,759
Olives	365	351	351	373
Nectarines	116	157	185	79
Peaches, Cling	3,549	3,484	5,207	5,789
Peaches, Free	2,852	3,068	3,135	2,210
Pears	399	135	142	90
Persimmons	5	12	14	8
Plums	1,655	1,265	1,108	878
Prunes	1,372	883	714	283
Walnuts	8,580	9,355	9,548	11,935

THE TREND OF FIELD CROPS IN SAN JOAQUIN COUNTY
AT FIVE YEAR INTERVALS

BEARING ACREAGE

CROP	YEAR 1937	YEAR 1942	YEAR 1947	YEAR 1952
Alfalfa Hay	39,324	43,846	54,223	61,460
Barley	101,913	102,603	83,676	87,230
Beans, All	37,562	24,782	14,373	13,365
Corn, Grain	20,395	17,280	11,551	13,580
Flax Seed	4,281	285	286	0
Grain Sorghum	16,208	7,078	2,811	2,165
Hay, Grain	27,465	17,357	21,821	8,000
Hay, Wild	11,014	15,683	15,009	12,470
Oats	10,090	13,135	9,051	9,510
Pasture, Range	210,120	210,000	225,748	203,180
Pasture, Ladino Clover	9,241	23,831	44,078	86,116
Pasture, Sudan Grass	3,974	2,992	2,217	1,850
Potatoes	10,962	7,783	5,539	5,214
Pumpkins	448	869	887	680
Rice	3,377	2,892	4,032	9,975
Silage Corn	2,277	1,966	1,019	1,585
Sugar Beets	12,161	18,769	6,250	11,891
Sunflowers	5,861	1,863	1,533	3,490
Sweet Potatoes	1,287	1,608	1,672	1,005
Wheat	48,020	24,193	16,970	11,985

THE TREND OF VEGETABLE CROPS IN SAN JOAQUIN COUNTY
AT FIVE YEAR INTERVALS

BEARING ACREAGE

CROP	YEAR 1937	YEAR 1942	YEAR 1947	YEAR 1952
Asparagus	24,478	34,742	43,759	53,798
Beets, Table		88	20	100
Broccoli	50	101	12	410
Cabbage	150	250	71	50
Cauliflower	100	150	32	17
Carrots	302	1,028	480	590
Celery	6,233	5,831	4,453	3,580
Corn, Sweet	350	542	368	600
Garlic	30	30	16	4
Lettuce	200	88	102	120
Melons, All	2,632	1,338	2,960	2,990
Onions	1,146	2,206	2,517	2,752
Peas	1,972	2,308	1,471	980
Peppers	50	50	60	244
Spinach	1,067	1,638	931	903
Squash	470	150	232	405
Strawberries	89	45	73	510
Tomatoes, Round	5,032	10,676	32,972	32,760
Tomatoes, Pear	5,895	12,718	1,995	2,550

SAN JOAQUIN COUNTY
YEAR - 1952

APIARY PRODUCTS

Honey	732,000 Lbs.	@	.105	$ 76,860.00
Bees Wax	7,010 Lbs.	@	.42	2,944.00
Queen Bees	7,600 Queens	@	.95	7,220.00
Pollenziation	6,505 Colonies	@	3.55	23,093.00
			Total	$ 110,117.00

DAIRY PRODUCTS

Milk and Milk Products	$ 14,834,200.00

LIVESTOCK

Beef Cattle and Calves	$ 17,026,575.00
Hogs	2,220,597.00
Sheep and Wool	2,917,988.00
Total	$ 22,165,160.00

POULTRY

Chickens	$ 591,388.00
Eggs	2,622,012.00
Turkeys	926,339.00
Total	$ 4,139,739.00

SUMMARY

Fruit and Nut Crops	$ 32,178,971.00
Field Crops	41,257,077.00
Vegetable Crops	38,447,014.00
Seed Crops	3,306,487.00
Apiary Products	110,117.00
Dairy Products	14,834,200.00
Livestock	22,165,160.00
Poultry Products	4,139,739.00
GRAND TOTAL	$ 156,438,765.00