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INTERNATIONAL FARM MANAGEMENT CONGRESS 2003
FARMING AT THE EDGE

FARMERS OR SLAVES

CONTRACT PRODUCTION

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ABSTRACT

This paper discusses the pros and cons of contract production of agricultural products and specifically investigates contract pig production in the USA. Discussion includes the impact that contract production will have on the traditional farm life as many think of it. The author discusses the major global trends impacting the role of the farmer and concludes that agriculture at the farm is continuing its rapid change. Farm families of the future will be required to change rapidly and to adapt to changes in farm management structure.

INTRODUCTION

Major changes are occurring out on the farms with the increased proliferation of contract production. Farmers are examining methods to improve their price received for production. To compete and continue in farming some farmers must find special niches to produce crops and or livestock that will increase their profits. Farmers need opportunities to increase their employment on the farm. One specific example of contract pig production will be presented for the audience to evaluate the pros and cons of contract pig production. The paper concludes that the new agriculture of the future will mandate a different structure and position for the farmer. In this new agriculture will the farmer be a farmer or a slave?

WHAT IS A FARMER?

The United States Department of Agricultural Census defines a farm as any entity that produces and markets $ 1,000 or more of agricultural products per year. (National Agricultural Statistic Service) The title "farmer" generates varied images and definitions. It is very difficult to come up with a general definition of what a farmer is that fits all perceptions. We cannot define a farmer by size and or by what is produced.

CONTRACT PRODUCTION OF AGRICULTURE COMMODITIES

Farmers have the opportunity to produce various commodities for companies under contractual arrangements. The terms of the contracts are varied according to the company and according to the commodity being contracted. One will find much variation among the contracts as they are tailored for the specific situation and the specific commodity being produced.

A FEW EXAMPLES OF TYPES OF CONTRACT PRODUCTION

- Producing seed.
- Producing popcorn.
- Producing hi-lysine corn.
- Producing waxy corn.
- Producing hi-oil corn.
- Producing hi-amylose corn.
- Producing hard endosperm corn.
- Producing white food grade corn.
- Producing low phytate corn.
- Producing high starch corn.
- Producing high oleic high oil corn.
- Producing nutri-dense corn.
- Producing soybeans for tofu.
- Producing natto beans.
- Producing high oleic soybeans.
- Producing high sucrose soybeans.
- Producing low linolenic acid soybeans.
- Producing low saturated fat soybeans.
- Producing high protein soybeans.
- Producing hi-oil soybeans.
- Producing Non GMO soybeans.
- Producing Roundup Ready soybeans.
- Producing eggs.
- Producing broilers.
- Producing turkeys.
- Producing feeder pigs.
- Finishing pigs.
- Finishing cattle.
- Producing tomatoes.
- Producing all kinds of vegetables.
- Producing sugar beets.
- Producing potatoes.

ADM VARIETY SPECIFIC SOYBEAN PROGRAM

Terms and Conditions

1. Farmer will plant a designated number of acres to Pioneer Brand variety 93B82 soybeans to be sold during designated delivery periods to designated elevator.
2. Farmer agrees to plant, harvest, store, and deliver the production of 93B82 in a manner to keep production segregated and to avoid every possible source of contamination.
3. Farmer will purchase the seed from Pioneer.
4. Farmer will be paid twenty cents ($0.20) per bushel on the amount of bushels on the guaranteed acreage signed into this agreement subject to meeting all the criteria of purity and quality.
5. Farmer at his expense shall deliver the 93B82 soybeans to the designated elevator at the date and time designated by ADM.
6. Farmer shall be permitted to employ any of the pricing methods and contracts offered by ADM to price the soybeans

(ADM/COUNTRYMARK,INC.)

Analysis of Producing 93B82 Soybeans for ADM.

This agreement offers very little incentive to most farmers to produce under this contract. First, the $0.20 per bushel is only around $9.00 to $11.00 per acre or $22.00 to 27.00 per hectare to be required to do the following:

- Purchase a specific variety of seed from a specific company.
- Perhaps grow a new or unfamiliar variety.
- Perfectly clean planter or seeder prior to planting the specific variety.
- Segregate the variety from other varieties with buffer strips.
- Have the harvester perfectly clean before harvesting this variety.
- Have all transport vehicles perfectly clean before loading this variety.
- Have the grain bins perfectly clean before storing this variety.
- Risk of having storage that can not be fully utilized because of segregating varieties.
- Incur transportation costs to a specific elevator.
- Have a specific date and time to deliver the soybeans.
- Be locked in with one elevator to market the soybeans.
- Risk possibility of rejection of the soybeans and all additional time and expense is the farmers loss.
- Risk of growing a variety that may yield less than the variety that the farmer would grow.
- Risk of growing a variety that may have less disease resistance to some diseases than conventional varieties.

This is only one example of contract crop variety specific production that sounds good initially. An additional $0.20 per bushel sounds good until one investigates all the additional expense, complications, and risks that are associated with the contract What I usually see is that a farmer will grow one of these specific varieties with specific tracts for 2-3 years then have a bad experience and quit. Normally, at the best, over 2-4 years the farmer financially breaks even. At this time these contracts in general are not profitable. One may find an occasional situation where a little additional profit may be made if the farmer is located close to the contract's designated elevator and if he would have chosen to market and deliver his grain there anyway.

Major Global Trends of Pig Production to Contract Production

The commercial farm operations have consolidated to an extent that the small independent operations are exiting pig production. In general the small independent producers have stopped expanding and are quitting pig production as they retire or as their buildings are used up. Some also leave the business due to small margins and financial difficulties. The USDA forecasts that 11 to 31 per cent of US pig operations will exit the business by 2003. In 1994 pig operations over 5000 head produced 27 per cent of the pigs and this has increased to the point that in 1999 the over 5000 head operations produced over 73 per cent of the pigs. In the USA the pig production business is so expansive that in some states there is a moratorium on the increasing of pig production.

North Carolina has not permitted any new pig buildings to be constructed since 1997. The North Carolina legislature recently extended the ban on construction of new hog barns to July 1, 2003 with no opposition. South Carolina has a ban on new permits for hog barn construction. Indiana has passed new rules that require producers to apply every five years for new approval status for confined feeding operations with the Indiana Department of Environmental Management (IDEM). Minnesota has recently toughened its feedlot regulations thus making it more difficult and expensive for the producer to comply with the environmental regulations. (Vansickle)

Because of environmental problems and issues, the large pork production companies are looking to other countries for their expansion. Eastern Europe, Mexico, and Brazil are the main areas that the largest companies are looking to for expansion. It is very difficult to get permits to build pig confinement barns in many states of the USA. The manure and smell are factors that communities do not want to tolerate. Smithfield Foods is in Mexico building swine buildings one after another. Their plans are to have 56,000 sows in Mexico by 2006. Carroll's Foods Brazil a subsidiary of Smithfield Foods is constructing facilities and processing for a 55,000-sow herd by 2005. The Brazilian government will increase the pork production in Brazil 1000 fold to $2 billion within the next decade boasts Brazilian Ag Minister Pratini de Moraes. (Taylor)

LARGEST COMMERCIAL PORK PRODUCERS IN USA

As shown in Table 1, pork production in the USA is rapidly being consolidated and vertically integrated into larger commercial producers that are using contract production in their operations.

Table 1: 25 Largest Commercial Pork Producers in the United States.

25 Largest Commercial Pork Producers in the United States

2001 RANK	NAME OF OPERATION	# SOWS 2001	# SOWS 2000
1	Smithfield Foods	710,000	695,000
2	Premium Standard Farms	211,000	201,000
3	Seaboard Farms	185,000	175,000
4	Triumph Pork Group, LLC	140,000	*
5	Prestage Farms	122,000	122,000
6	SMS Pipestone, LLC	120,000	*
7	Cargill	109,675	109,000
8	Tyson Foods (The Pork Group, Inc.)	107,000	110,000
9	Iowa Select Farms	100,000	96,000
10	Christensen Farms	80,500	74,000
11	Goldsboro Hog Farm	72,000	70,000
12	Land O'Lakes	70,000	67,500
13	Bell Farms/Hormel Foods	61,500	42,000
14	Heartland Pork Enterprises	61,000	61,000
15	Sand Systems	47,000	44,500
16	Farmland Industries	37,400	38,500
17	Progressive Swine Technologies	35,000	30,000
18	Hatfield-Wenger-Purina	29,000	*
19	Texas Farm	29,000	29,000
20	Decoster Farms of Iowa	29,000	27,000
21	Holden Farms	28,000	22,000
22	Clougherty Packing Company	26,000	23,000
23	Wakefield Pork	25,500	23,000
24	Pork Technologies	25,000	20,000
25	Maschhoff Pork	24,500	18,000
	Total:	2,485,075	

* Not on list in 2000

Source: Freese

Table 2: Largest Commercial Pork Producers in Canada.

8 Largest Commercial Pork Producers in Canada

2001 RANK	2000 RANK	NAME OF OPERATION	# SOWS 2001	#SOWS 2000
1	1	Maple Leaf Foods (Elite Swine)	90,000	58,600
2	2	F. Menard	32,000	30,000
3	3	Premium Pork	32,000	20,000
4	4	Isoporc (Cote-Paquette)	30,300	23,000
5	5	Hytek	30,000	20,000
6	6	The Puratone Corporation	25,000	23,000
7	7	Big Sky Farms	20,000	11,500
8	8	Saskatchewan Wheat Pool	16,500	15,600
		Total:	275,800	201,700

Source: Freese

Table 3: Largest Commercial Pork Producers in Mexico.

3 Largest Commercial Pork Producers in Mexico

2001 RANK	NAME OF OPERATION	# SOWS 2001
1	Grupo Porcicola Mexicano	64,000
2	Proan (Proteina Animal)	35,000
3	Smithfield	32,500
	Total:	131,500

Source: Freese

Table 4: Largest U.S. Companies Pork Packing Capacity.

U.S. Daily Pork Packing Capacity, 1996-2001

1998 RANK	COMPANY	1996	1998	2000	JUNE 2001
1	Smithfield	72,300	82,300	80,300	80,300
2	IBP	72,400	72,600	69,500	71,000
3	Swift	39,400	39,400	39,400	43,000
4	Excel	37,800	37,800	38,700	32,000
5	Hormel	34,700	34,700	31,600	30,500
6	Farmland	22,800	33,800	33,800	25,500
7	Seaboard	8,000	15,000	16,000	16,000
8	PSF/Lundy's	13,000	15,000	15,000	13,600
9	Indiana Packers	9,000	13,000	11,000	12,000
10	Pinnacle Foods	7,200	7,200	8,000	10,200
11	Sara Lee	7,300	7,300	9,000	9,000
Total:	**250/day and up**	**387,420**	**407,920**	**388,620**	**381,020**

Source: Schlosser

Factors Influencing the Trend to Contract Pig Production

- Economies of scale.
- Fewer and larger farms.
- Fewer and larger packing plants.
- Integration of production, packing and processing.
- Specialization of production.
- Public attitudes about pig production.
- Global export trade.
- Government regulations and environmental controls.
- Marketing Contracts.
- Need for guaranteed kill space at the packing plant.

(Kelley)

All of these factors encourage the small scale producer to either quit production or specialize in the one strongest area of his or her expertise. This scenario fits contract production perfectly. The Big Pig Company coordinates all phases of the production from conception through processing and all the farmer has to do is care for one of the phases. The farmer contracts to do the breeding, or gestating, or farrowing, or nursery, or finishing and the Big Pig Company will manage all the rest. It is a very simplified controlled production with economies of scale large enough to have the best of genetics,
research, facilities, marketing power, and ability to produce products for a specific market in the quantities that the market requires. The small scale producer can not compete with the large scale producers on obtaining marketing contracts. The percentage of pigs marketed under marketing contracts to packers has increased from 13 per cent in 1993 to 83 per cent in 2001. There are only 17 per cent of the pigs sold in the cash market. Interestingly, the cash market is still the basis for establishing the price used in the marketing contracts. I expect that soon a problem will arise with fewer and fewer pigs being marketed in the cash market of establishing the base price to use in the marketing contracts. (Miller)

ANALYSIS OF CONTRACT PIG FINISHING

The farmer must investigate very carefully all aspects of the contract production before entering into any agreement. The capital investment is sizable and is not an investment that is readily marketable if something should go wrong or the farmer just decides that this is not for him and or his family. This is a long term commitment of time and capital that does not return high rates of return on the capital and labor. The payoff on this investment is at least 7 years if the farmer does not take any income from the project for his labor and at least a minimum of a ten year payoff if he takes a labor income. This is a 365 days per year time commitment for a minimum of ten years to reach payoff. Only after ten years can the farmer make any real money and after ten years will he want to continue this work? If anything goes wrong the farmer may be stuck with all of the loss of this capital investment. If Big Pig should cease operations for any reason the farmer will be without a viable contract. He will have the problem of finding another contract producer to enter into an agreement with or he must buy and put pigs in himself, or leave the building empty and sustain the losses. As fast as the technology of pig production changes the farmer may be required to invest heavily at the expiration of the contract to update the pig buildings. There will be the expense in ten years or less to replace the equipment in the barn. After ten years the farmer will have the risk of the contractor not renewing the agreement.

The renewal offer may be too low for the farmer to make any real profit for his investment and labor. The farmer has the risk of the cost of increasing utilities and real estate taxes over the life of the building. An increase in the rate of inflation may decrease the labor and investment income during the ten year contract period The farmer has the risk of neighbors, environmental groups, and government agencies filing a lawsuit and successfully shutting down the pig operation. The farmer should consider all of these risks in the evaluation of entering into a contract to produce pigs on contract. The agreement could be drawn up in such a fashion as to automatically increase the payment with the increase in some of the expenses that the farmer incurs in the production. The farmer must plan in advance a detailed plan of how to exit the pig contract production business if the situation should arise for his need to exit the business.

PROS OF CONTRACT PRODUCTION

- Farmer has daily on farm job.
- Farmer has the potential to increase on farm income.
- Opportunity exists for investment of excess farmer's capital.
- Farmer has a source of organic fertilizer to use in his crop production.
- Potential for making work and income to bring another person into the operation.
- Potential to reduce the risk in pig production.
- Farmer can specialize in one phase of production.

CONS OF CONTRACT PRODUCTION

- Farmer is locked into production for a specific period of time.
- Changes in other costs, such as fuel, electricity and real estate taxes can turn a good financial agreement into a bad agreement.
- Contract may be voided due to poor production.
- Contract may be voided due to quality of animals delivered.
- Farmer has a 365 day per year job for 20 years.
- Farmer must be at a specific location two times per day.
- The risk of Big Pig filing for bankruptcy would leave the farmer without viable contract.
- Farmer may develop poor health and not be able to do the daily work.
- Requires sizable capital investment.
- Investment has very limited market possibilities.
- Imposes increased risk to the farmer's operation.
- Neighbors dislike the smell of the pigs.
- Neighbors dislike the smell when the manure is applied to the fields.

EXAMPLE OF CONTRACT PIG FINISHING IN INDIANA

General Information of Project Operation

Big Pig

Big Pig is a farmer owned company in southern Indiana that has grown over the years to a company with 13,000 sows. The company has some of its own farrowing, nursery and finishing facilities. They also enter into contracts with other farmers for the farmers to have nurseries and or finishing units. Big Pig has saturated two counties with pigs and is now entering other counties with contract production. Big Pig is expanding each year and has just completed contract barns number 46-51 on my neighbors farm.

Description of Pig Finishing Barns

Each barn has 2000 head of pig space with two rooms joined in the middle with a room for the shower, office, and mechanical requirements for the barns. The three farmers in my area each have 2 identical barns of 2000 head each for a total of 4000 pigs per farm. The barns are designed with the newest technology with natural curtain type ventilation, slatted floors with an eight feet deep manure pit under the floor, 40 pens per room, summer air stir fans, and propane furnaces for the winter when new pigs arrive. The pigs arrive at a weight of 45-50 pounds or 20-23 kilograms and go to slaughter at 270-300 pounds or 122-136 kilograms.

Description of Manure Management

The manure pit is 8 feet deep and the same width and length of the barn and holds 1 year of manure storage of 800,000 gallons or 211,360. liters. Commercial manure haulers will pump and distribute the manure for $.03 per gallon using GPS and flow meter technology to obtain accurate application rates per acre. The manure from the finishing barns is of high quality and can provide the nitrogen and phosphate required for an excellent corn crop. The manure needs to be properly managed to receive the economic benefit from it.

With proper management and if the farmer has sufficient land for corn production the farmer should manage to obtain a fertilizer value of $ 98.52 per acre or $ 243.34 per hectare for N-Nitrogen, K-Potassium and P-Phosphorus and 21.56 per acre or $ 53.25 per hectare for calcium, sulfur, manganese, zinc, and boron. The farmer would need to have 157 acres for corn production each year near to the pig production site. The yearly value to the farmer of the manure is approximately $ 15, 467.64 for the N-P-K and $ 3, 384.92 for the other nutrients for a total value of $ 18,852.56 per year per barn. (Gordon and Associates, Inc.) The approximate cost to have the manure commercially applied to the field is $ 8,000. to $24,000. per year per barn. If the barn is close and the applicator can apply with pump and hose attached to applicator it is much less expensive than if the manure is transported in tankers and distributed on the field from manure applicators with tanks. The land requirement required for manure disposal by Indiana Department of Environmental Management is 225 acres or 91 hectares per 4000 pig capacity. The time required to clean each barn after the pigs are removed is about 32 hours with a high pressure high water volume pressure washer.

Description of Dead Pig Disposal

The dead pigs are disposed of in the compost barn. The compost barn is a 3 bay barn without a roof. The dead pigs are put in the barn and covered with sawdust. After six months the composted pigs are rotated to the next bay and after a year just a little bone is left and the residue is applied to the fields after approximately 18 months.

Description of Labor Requirements

Each morning the farmers inspect the barns and pigs. They check the feed systems and feeder controls, water, scrap the alleyway, etc. and remove any dead animals to the compost barn. This requires approximately 1 and _ hours per morning for

two barns. If there are no dead pigs in the evening the time requirement to check the two barns is about _ hour. Travel time to and from the barns needs to be added to these estimates.

Contract Terms

The contract is for a term of 10 years.

Local Farmer's Obligations:

The local farmer has entered into an agreement with the commercial pig production company that we shall name Big Pig. With this Contract Grower Agreement the farmer in general terms is obligated to provide significant services and incur major expenses.

1. Farmer will provide building or buildings according to Big Pig's design with 1000 head capacity per room with two rooms per barn. The cost of construction is $150.00 per pig space or $300,000.00 per barn.
2. Farmer will provide the building site, driveways, roads, water well, electric service and all other infrastructure required to finish the pigs, estimated cost of $25,000.00
3. Farmer will provide land for manure disposal.
4. Farmer will provide the labor and machinery and equipment for the disposal.
5. Farmer will secure all government permits necessary for the construction and operation of the pig unit.
6. Farmer will provide all labor, utilities, and disposal of dead animals.
7. Farmer will deliver to Big Pig each week a written report as required by Big Pig.
8. Farmer will provide a liability insurance policy of a minimum of $1,000,000.00 for bodily injury and property damage.
9. Farmer will provide property insurance on the buildings of the approximate replacement cost.

(Murphy Family Farms)

Big Pig's Obligations:

1. Big Pig will provide feeder pigs to Farmer.
2. Provide for transportation of pigs to and from Farmer's premises.
3. Provide management guidelines to Farmer.
4. Provide feed and necessary medication to Farmer.
5. Perform all marketing functions.
6. Provide payment to Farmer for the services he provides of $35.00 per pig space or $70,000.00 per year per 2-room barn.

(Murphy Family Farms)

AUTHORS FORECAST OF THE FUTURE

All of the agricultural production in the world is in a rapid movement of vertical integration. The pig industry is now to the point of the turkey, broiler, and egg industry. The pig is now produced, processed, delivered and put on the shelf in the supermarket all

within one business structure of agreements, alliances or total ownership by one firm. Smithfield Foods is the perfect example of control of the pig from conception to the shelf of the supermarket. The independent farmer will continually find it more and more difficult to compete with this integration. The method that allows the independent farmer to be a part of this integration is with the contract production agreements.

For my own personal business I have evaluated several potential contract production agreements for the production of popcorn, soybean seed production, non GMO soybeans, waxy corn, hi-lysine corn, white food grade corn, and tofu soybeans to name a few. In my analysis I have found none that would pay for the additional costs of production and the additional risk associated with these products. They all have presented programs with premiums and bonuses; but all were too little to cover the additional costs of production and segregation and the additional risk associated with these products. To the individual farmer these products are unknown. He is asked to grow seed that he is unfamiliar with and in general these varieties with special traits yield less and have much less disease resistance. The trend that I have seen the past ten years is that the farmer will grow one of these specialty products for 2-3 years and will have success and then will decide to grow a significant acreage and some disease, weather problem, or another problem will devastate this crop and he will incur major losses and that will be the end to his growing the specialty crop. Then the contract company will find some other farmer to try growing the crop and the circle is repeated and repeated with the farmer sustaining the financial and emotional failure from the production of these specialty crops.

I am sorry to say that what I see in the future is the farmer losing essentially all independence and that he will be producing everything under contract. I can see the day that the company representative comes to my farm with a complete package, plan for production for my farm. The plan will be specific for each field with the prescription for all the inputs and the complete recipe for the production. The plan will include to where and when the production is to be delivered. The farmer will receive just enough to maintain his infrastructure for the benefit of the company that he is contracting with and a labor income to keep him on the farm doing the work. The farmer will provide the labor, land, machinery and equipment for the benefit of the contracting companies. The contracting companies will use insurance to essentially eliminate financial risk to the farmer; but the lack of any risk will eliminate the farmer from making any significant profit that he can use for future investment. The real money will be made after the raw product leaves the farm.

BIOGRAPHICAL SKETCH

Jay Lee Smith is a farmer/owner/manager of 1424 acres in east central Indiana. The current farm operation devotes half of the acreage to soybean production and half to corn. Jay is a 1969 graduate of Purdue University with a Bachelor of Science degree in Agriculture Education. After teaching Vocational Agriculture and serving as a Young Farmer and FFA advisor for three years, Jay purchased his first 260 acres of farmland in 1971. Although Jay's occupation as a classroom Agriculture teacher ended in 1975, he has continued to share his knowledge and love of agriculture by serving as a consultant and technical advisor in foreign countries. He has completed 24 consulting projects in seven countries: they are Kingdom of Swaziland, Bolivia, Latvia, Ukraine, Angola, Lithuania, and Romania. He has assisted clients of the Farmers Home Administration as they tried to improve financial planning and decision making skills. Jay's love for farming, travel, and people have been combined in his study and observation of agriculture in fifty-eight countries.

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