



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Innovations of Agricultural Scientific Research Institutions in Management of Special Materials

Yonghua LIU*, Haifang CHEN, Lixin CUI, Chunyang MENG, Ran HUO, Minghui HU

Tropical Crops Genetic Resources Institute of Chinese Academy of Tropical Agricultural Sciences, Danzhou 571737, China

Abstract In recent years, the Ministry of Agriculture has increased input in agricultural scientific research projects. As a result, the procurement amount and quantity of special materials are increasing gradually, and the management of special materials becomes more standardized. In order to do well in management of special materials, the authors made exploration and thinking about further strengthening management of special materials in combination with actual conditions, including establishing regulations and systems, enhancing procurement process, strengthening requisition and safekeeping, and reinforcing general ledger management of special materials.

Key words Special materials, Management, Exploration and thinking

1 Introduction

The material management is a science^[1]. In agricultural scientific research institutions, the material management is mainly reflected in management of special materials. Special materials of agricultural scientific research institutions are mainly applied in agricultural scientific research experiments, so they are beyond the range of management of fixed assets. Generally, special materials include bulk materials and low value consumables. Bulk materials mainly include seedlings and seeds purchased for experiment. Low value consumables mainly include raw materials that can not be restored after one time of use (such as chemical reagents, agricultural materials, and fuels) and tools and equipments not enough to reach fixed assets standard and not belonging to materials (such as low value instruments, meters, tools, measuring tools, scientific research devices, glass ware, parts, accessories, and animals and plants for experiment). In recent years, the Ministry of Agriculture has increased input in agricultural scientific research projects. As a result, the procurement amount and quantity of special materials are increasing gradually, and the management of special materials becomes more standardized. In the new situation, it is an expectation of every manager to find out how to strengthen management of special materials, and provide high quality and low cost special materials for their organizations. In this study, we made some tentative exploration and thinking on further strengthening management of special materials in agricultural scientific research institutions in combination with actual conditions.

2 Establishing scientific management regulations on special materials

In order to strengthen management of procurement of special materials, increase efficiency of use of funds, and ensure smooth progress of scientific researches, it is required to establish appropriate

regulations according to amount of procurement. For example, it is required to set up procurement management methods for bulk materials with amount higher than 50 000 yuan, and establish management methods for procurement of low value consumables with amount lower than 50 000 yuan. Regulations should clearly specify procurement item, procurement amount, procurement procedure, inspection and acceptance procedure, warehouse entry and exit procedure, make definite procurement, inspection and acceptance, warehouse entry, requisition, and safekeeping processes of special materials, improve internal control, and realize management of special materials having regulations to follow.

3 Taking effective control of material procurement and strengthening procurement procedure

3.1 Strengthening examination and approval of procurement and achieving multi-level approval For the same type of special materials, centralized procurement is required. For those conforming to provisions of procurement management, it is required to strictly implement related provisions of procurement management of government. For procurement through inquiry, it should collect and keep related original records. The examination and approval of procurement needs passing approval of responsible person of central department and deputy director in charge, and the procurement should be carried out in the approved scope. After procurement, it is required to make registration in functional department and review if procurement documents are complete; for materials with single bill amount above 50 000 yuan or the total amount of bills above 100 000 yuan, procurement contract must be signed and procurement shall not be made without approval of the legal person; the procurement shall be conducted within the range of budget and pass multi-level examination and approval.

3.2 Accurately taking procurement methods and strictly implementing procurement budget Procurement of special materials include judgment of details of decisions^[2], budget of special materials accounts for a large portion of scientific research project,

and procurement budget is already determined at the time of two – tier approval. Therefore, procurement should be conducted within the range of budget and shall satisfy demands of scientific research, and it is very important to grasp procurement methods. Generally, most special materials of agricultural scientific research institutions are purchased by research teams. Influenced by research fields, crops and disciplines, special materials have numerous and diverse types of demands, which require classified comparison of management department. Also, it is necessary to make procurement plan according to production and demand, to make types, quantity and quality of procured materials satisfy demands of production^[3]. In addition, it should collect information in time. For example, collect information of special materials required by each research team, make preparation for procurement according to type, emergency and budget amount, and then compare suppliers. If the same type of product reaches the procurement amount, the procurement should be made through competitive bidding. If the quantity and fund are small, procurement may be realized through inquiry. When agricultural scientific research institutions purchase agricultural materials necessary for large field experiment, such as farm manure, cow dung, and sheep manure, since suppliers are few, it is allowed to adopt separate procurement. Besides, procurement of materials should be handled by special person. Each research team should assign a special scien-

tific research person to coordinate with management department, to prevent the problem of "person who uses materials is in charge of procurement", block the procurement loophole, and take effective control in management of material procurement. Furthermore, in the process of procurement, is requires not only understanding use of special materials in detail, but also carefully analyzing factors influencing procurement price, to further optimize quality, cost and service of materials purchased^[4].

3.3 Setting up procurement registration system and doing well in filing and registration The procurement of special materials is an odd and complex job, thus it needs doing well in filing and registration. After completion of procurement, it is required to submit invoice and other documents to procurement management department for review. The management department should correctly register special materials according to procurement amount, and should review following items: (1) if the procurement is in the range of budget; (2) if procurement method conforms to regulations; (3) if procurement formalities are complete. After completion of review, the management department should make registration according to procurement amount, set up registration forms for procurement of bulk materials and low value consumables (as listed in Table 1 and Table 2), ask the person handling or purchaser to confirm by signature, and urge the person handling to collect and keep related original procurement records.

Table 1 Registration form for procurement of bulk materials

Procurement of special materials	Amount 104 Yuan	Expenditure item	Stock Out and Stock In	Purchaser	Registrant	Registration time	Remarks
<div><input type="checkbox"/> Yes</div> <div><input type="checkbox"/> No</div>							

Table 2 Registration form for procurement of low value consumables

Registration date	Name of material purchased	Amount 10 ⁴ Yuan	Expenditure item	Stock Out and Stock In	Purchases and sales contract	Purchasing department	Purchaser	Registrant
<div><input type="checkbox"/> Yes</div> <div><input type="checkbox"/> No</div>					<div><input type="checkbox"/> Yes</div> <div><input type="checkbox"/> No</div>			

3.4 Strictly controlling inspection and acceptance of materials and managing warehouse entry and exit With arrival of materials purchased, it is required to carefully handle inspection and acceptance and warehouse entry formalities, and assign special person to inspect and accept special materials. In the process of inspection and acceptance, it should focus on quantity counting, quality inspection, and document checking. If there is shortage, damage or inconsistency with contract found in the process of inspection and acceptance, the purchaser should inform supply unit or carrier according to related provisions, and handle return, replacement or compensation formalities in time. For special materials passing the inspection and acceptance, the management person of bulk materials in each center should handle warehouse entry formality, and fill in both the stock in and stock out notes. Financial department should review certificate of material inspection and acceptance, and never render account without signature of the per-

son handling inspection and acceptance; material purchasing department should organize related management departments to spot check inspection and acceptance of materials from time to time.

4 Enhancing physical management and making registration of requisition and safekeeping

4.1 Keeping of materials should be safe It is required to set up centralized safekeeping system for special materials, standardize inspection and acceptance, quality inspection, warehouse entry, requisition, and inventory of materials, make clear storage place and responsible person of management, and enhance safe management of warehoused special materials, especially toxic and harmful materials, to ensure personal safety and material safety. Storage places should meet requirements of fire protection and gas defense according to physical, chemical and process properties of materials. Materials requiring special safekeeping conditions due

to physical and chemical properties should be separated from other materials. Agricultural scientific research institutions will generally use some harmful and toxic reagents in some scientific research experiments. For example, molecular marker experiment needs EB coloring, while EB is a strong carcinogen; in tissue culture, HgCl_2 is toxic chemical agent; in molecular biology, phenol is a toxic agent; formamide may lead to monster. Thus, these agents should be stored in special cabinets. Some open laboratories have

Table 3 Registration form for use of special materials

Name of material purchased	Purchasing date	Purchased amount	Date of requisition	Quantity of requisition	Handled by	Application	Remarks
			_____Date				
			_____Month				
			_____Year				

5 Establishing general ledger of special materials, to realize accounts agree with physical inventory

It is recommended to establish auxiliary account for accounting of special materials, and reinforce financial accounting management of special materials. Material safekeeping and use departments (research teams) should establish and improve general ledger for purchasing, selling and storage of materials, strengthen physical management of special materials, and do well in registration of account books, to ensure accurate and complete data of special materials.

6 Conclusions

From the above analysis and discussion, we can reach following conclusions. Firstly, it is required to take effective management of special materials, enhance organization leadership, reinforce procurement procedure of special materials, establish and perfect procurement system, strengthen physical management, and establish general ledger of special materials, to make accounts agree with physical inventory. In addition, it is required to strengthen training of personnel in procurement management department, fully un-

derstand market situation and price trend, find out strength of suppliers, know whether quotation of suppliers is reasonable, and visit suppliers to check their supplying capacity^[6], and improve professional quality of purchasers and strengthen professional ethics and sense of duty.

4.2 Warehouse exit should be registered Before using special materials, each research team should handle warehouse exit formality, and make registration of use of special materials (see Table 3), to ensure tracing of all materials.

References

- [1] ZHANG D. Thinking of risk management for procurement of electric power materials[J]. Technology Innovation and Application, 2012(26): 277 – 278. (in Chinese).
- [2] SUN KH. On construction of supervision mechanism of material purchase in telecommunication enterprises[J]. Business Economy, 2009(6): 80 – 83. (in Chinese).
- [3] ZHENG ZH, MAO XL. Practice of scientific managements in material procurement[J]. Xinjiang Iron and Steel, 2012(2): 54 – 57. (in Chinese).
- [4] ZHANG WQ. Thinking of how to implement purchasing management[J]. Market Modernization, 2005(6): 15 – 16. (in Chinese).
- [5] TANG J. How to enhance material management in universities' lab construction[J]. Journal of Southwest University for Nationalities (Humanities and Social Science), 1999, 20(10): 180 – 181. (in Chinese).
- [6] SHEN XX. On the material purchasing management for enterprises[J]. Inner Mongolia Coal Economy, 2006(2): 48 – 49. (in Chinese).

(From page 113)

- [15] BURATTINI E, CAVAGNA M. Vibrational imaging of a J-aggregate microcrystal using ultrabroad band multiplex coherent anti-Stokes Raman scattering microspectroscopy[J]. Vibrational Spectroscopy, 2008(47): 139 – 147.
- [16] CHEN XY, RU Y, CHEN FL, *et al.* FTIR spectroscopic characterization

of soy proteins obtained through AOT reverse micelles[J]. Food Hydrocolloids, 2013(31): 435 – 437.

- [17] SAKUDO A, KURATSUNE H, KATO YH, *et al.* Secondary structural changes of proteins in fingernails of chronic fatigue syndrome patients from Fourier-transform infrared spectra[J]. Clinica Chimica Acta, 2009402(1): 74 – 78.