



Practices and Thoughts on the Construction of Scientific Research and Innovative Team of Agricultural Scientific Research Institute

CHEN Yanyu^[a]; MA Zilong^{[a],*}; ZHANG Shuzhen^[a]

^[a]Institute of Tropical Bioscience and Biotechnology, Chinese Academy of Tropical Agricultural Sciences, Haikou, China.
 *Corresponding author.

Received 12 February 2014; accepted 28 May 2014
 Published online 26 June 2014

Abstract

The arrival of the era of agricultural science and technology enables agricultural scientific research and innovative team to become a strong guarantee to improve agricultural scientific and technological innovation, and organize joint scientific and technological research to tackle key projects. This paper takes Sugarcane Research Center of Chinese Academy of Tropical Agricultural Sciences as an example, explores the ideas, objectives, priorities as well as specific measures that agricultural scientific research institutions can build scientific research and innovation teams through its practices and successful experience in scientific and innovative team building.

Key words: Agricultural scientific research institute; Scientific research and innovative team construction; Discussions

Chen, Y. Y., Ma, Z. L., & Zhang, S. Z. (2014). Practices and Thoughts on the Construction of Scientific Research and Innovative Team of Agricultural Scientific Research Institute. *Cross-Cultural Communication*, 10(4), 139-142. Available from: <http://www.cscanada.net/index.php/ccc/article/view/5010>
 DOI: <http://dx.doi.org/10.3968/5010>

INTRODUCTION

With the rapid scientific technological innovation and increasing cross-disciplinary and inter-penetration of subjects, scientific researches have to further strengthen cooperation and complementarity among different majors and subjects, a scientific research alone can no longer meet the requirements of modern scientific researches.

Scientific research and innovative team construction can put together and effectively use limited resources, fully complement and collaborate the strength of members to accomplish major scientific and technological projects, and greatly improve the efficiency of scientific technological innovation and scientific technological competitiveness. Therefore, to enhance the construction of scientific research and innovative team is an effective means to improve scientific research and innovative capability of agricultural scientific research institutes. This paper takes Sugarcane Research Center of Chinese Academy of Tropical Agricultural Sciences as an example (hereinafter referred to as Sugarcane Research Center), analyzes the existing difficulties and shortcomings in building scientific research innovative teams, takes various effective measures and summarize results obtained to explore effective ways and means to build scientific research and innovative teams, and provides references for agricultural research institutes to construct scientific research and innovative teams.

1. THE CONNOTATION OF SCIENTIFIC RESEARCH AND INNOVATIVE TEAM OF AGRICULTURAL SCIENTIFIC RESEARCH INSTITUTIONS

Scientific research and innovative team of agricultural scientific research institutions is a group of scientific researchers who target on the research and development of agricultural science and technology, equipped with professional theories, knowledge, skills and experience complementary to each other, committed to a common scientific research objective with mutual responsibility and team spirit. Scientific research and innovative team of agricultural scientific research institutions is a group who takes the subject leader as the core, composed mainly of scientific researcher backbones, complemented

by professionals and scientific research staffs that can complement and collaborate with each other, and stably engaged in basic and applied agricultural researches.

2. OVERVIEW OF SUGARCANE RESEARCH CENTER

Sugarcane Research Center of Chinese Academy of Tropical Agricultural Sciences was established in March 2011, which integrated the sugarcane resources of the academy and strengthened qualified personnel cultivation through a combination of introduction and training. The center now owns 28 scientific and technical personnel, having initially established a sugarcane science research and technological development team, taking a leading position in the domestic research of sugarcane molecular biology and genetic improvement, sugarcane virus-free seedling cultivation techniques and bagasse utilization. The scientific research and innovative team of Sugarcane Research Center abides by the scientific standard that “paper should be written in the earth so that results can benefit tens of millions of families”, constantly looking for subjects from the productive practices so as to continually ripen research results and serve production.

3. THE GOAL AND DIFFICULTIES OF BUILDING SCIENTIFIC RESEARCH AND INNOVATIVE TEAM

3.1 The Goal of Building

By strengthening scientific research and innovative team construction, Sugarcane Research Center will further improve management level, complete professionals and staffs, establish systems and rules, inspire people with mechanism, and make efforts to build Sugarcane Research Center as soon as possible to be a sugarcane research team in the world first class, with complete subjects, reasonable professional structure, and a strong scientific and technological innovation capability in accordance with the requirements of a national team, in order to better serve our main sugarcane production areas, and to promote the healthy development of national sugarcane industry.

3.2 The Difficulties

Sugarcane Research Center is a newly established research institution, the construction of scientific research and innovative team has many difficulties and shortcomings, which seriously hampered the development of the center. The main challenges are:

A. Weak background and foundation. Sugarcane Research Center is a loose structure formed on the basis of the former sugarcane project team of Tropical

Biotechnology Institute of Chinese Academy of Tropical Agricultural Sciences and other five institutes of the academy. The number of scientific and technical personnel is small, professional structure and disciplines supporting is unreasonable, and experimental and test conditions are insufficient. Researches have focused on specific points without a systematic connection, so it is difficult to form competitive innovative results to support the development of the national sugar cane industry.

B. The management team is weak, and management personnel are insufficient. Sugarcane Research Centre currently has only one director as the full-time management personnel, other personnel belong to different institutes, therefore it lacks effective internal management and cannot well utilize inadequate human resources.

C. A lack of scientific evaluation and incentive mechanism. The scientific and technological innovation and services for “three dimensional rural issues” of Sugarcane Research Center is based on scientific and technical personnel’s sense of responsibility and mission, not by the scientific and reasonable evaluation and incentive mechanism, thus the vitality of innovation and service is deficient.

4. COUNTERMEASURES OF SUGARCANE RESEARCH CENTER TO STRENGTHEN SCIENTIFIC RESEARCH AND INNOVATIVE TEAM CONSTRUCTION

A. System construction should be strengthened to provide a guarantee for the development of scientific research and innovative teams. Good research condition is the basis to carry out scientific research, sophisticated equipment and perfect scientific experiment base are the essential elements for scientific research and innovative teams to smoothly work. Sugarcane Research Center has completed the declaration to be qualified as a scientific research base, and upgraded water, electricity, and roads of the base to provide a good condition for field experiments; purchased a lot of scientific equipment and facilities to greatly improve experimental conditions of the center. The increasingly improved research conditions provide a guarantee to enhance the scientific innovation capability of Sugarcane Research Center.

B. Planning and Construction of the Talents Should Be Strengthened, Reasonable Subject, Major and Personnel Structure Should Be Established. The center will constantly improve the structure of subjects and majors, making subjects and majors which have introduced and trained the talents cover the sugarcane industry chain (such as genetic breeding, nutrition and cultivation, pest control, etc.); the team is

longitudinally composed of the subject leader, scientific and technological backbone layer, cooperative layer and auxiliary layer, and transversely composed of all kinds of talents for scientific and technological innovation, achievement promotion, and services for three rural issues, training a sugarcane scientific research team that not only has the ability of scientific and technological innovation but also can serve the “three rural issues”.

C. Management team and culture construction should be strengthened, management level and efficiency should be improved. The center has added 2 to 3 part-time management personnel who have received training with management knowledge and skills, established regulations and rules based on which personnel are managed, and strived to improve management level of the center. The center also strengthened the innovative cultural construction which emphasized “people-oriented cooperation and competition, encourage innovation, pay attention to accumulation and truth-seeking innovation, and avoid impetuosity”, as a result a positive, realistic and innovative, cooperative and harmonious scientific research atmosphere has been initially formed.

D. Scientific Evaluation and Incentive Mechanism Should Be Established, the Enthusiasm and Creativity of Scientific and Technical Personnel Should Be Fully Mobilized. According to the characteristics of Sugarcane Research Center, the center established and improved the scientific evaluation system, endowed various elements of the scientific and technological activities with a reasonable value, and formed a scientific and rational system of quantitative evaluation. At the same time, the center also established corresponding incentive mechanism, competition mechanism and evaluation mechanism, making the evaluation results linked with the performance based salary of scientific researchers, and provided the necessary material reward and spiritual encouragement to the scientific researchers.

5. REMARKABLE ACHIEVEMENTS OF SCIENTIFIC RESEARCH INNOVATIVE TEAM CONSTRUCTION

By strengthening the construction of scientific research innovative team, various aspects of Sugarcane Research Center has been qualitatively promoted: subject structure has been gradually improved, scientific research conditions have been enhanced, the capability to undertake scientific research projects has been promoted, scientific and technological outputs have been diversified, and international exchanges and communications have shown a good trend. Scientific research has made good progress, achievements transformation and the three rural issues service has made remarkable results, as follows:

A. The center strengthened the planning and construction of the talents, established a reasonable

subject structure, cultivating a sugarcane scientific research innovative team which can conduct scientific innovation and service “three rural issues”; an abundance of innovative talents has come forward. The center now owns 1 national sugarcane industry system post scientist and 1 national agricultural advanced individual. The team has made significant performances, bearing 2 national “the eleventh five year plan” and “the twelfth five year plan” modern agricultural industry technology system projects, 5 national natural science fund projects, and 2 Spark Plan projects of Ministry of Science and Technology and so on. Popularization and application of the results have covered 497.2 thousand mu of lands, newly increased sugarcane output value has reached 335 million yuan, and newly increased net income of peasants has come up to 235 million yuan. Remarkable social and economic benefits have been realized, and team award of Chinese agriculture scientific and technological innovation has been won.

B. The center has established an efficient management team and positive culture, and improved the management level and efficiency; established a scientific and reasonable evaluation system for researchers and corresponding incentive and reward mechanism, which fully mobilized and exerted the enthusiasm and creativity of scientific and technological personnel.

C. Instruments and equipment have been purchased through the construction and renovation of Sugarcane Research Center, which greatly improved the scientific research condition of the sugarcane center.

CONCLUSION

Through strengthening the construction of scientific research innovative team, Sugarcane Research Center has made scientific planning for subjects, majors and the structure of the team, and clarified construction object of scientific research and innovative team. Through improving the scientific research conditions, and strengthening the construction of scientific and technological team, management team and culture, the center established measures of scientific and reasonable performance evaluation and reward mechanism, preliminary built a sugarcane scientific research innovative team with strong scientific innovation capability and service capability for “three rural issues”, and have achieved encouraging results. The practices and successful experience to build scientific research and innovative team of Sugarcane Research Center provided references for agricultural scientific research institutes.

REFERENCES

- Chen, Y. Y. (2013). Thoughts on the construction of scientific and technological innovative team. *Horizon of Science and Technology*, (30), 64-107.

- Huang, G., & Geng, W. (2011). Thoughts on the construction of scientific and technological team of new agricultural scientific research institutes. *Agricultural Science and Technology Management*, (4), 90-93.
- Thoughts on Construction of Scientific and Technology Innovative Team*. Retrieved from <http://wenku.baidu.com/link?url>
- Wu, L. F., & Fu, Q. L. (2012). Study on the construction and management of scientific research and innovation team of agricultural scientific research institutes. *Agricultural Science and Technology Management*, (4), 79-85.
- Zhang, L. (2007). *Several Thoughts about Construction of Innovative Team of Scientific Research Institutes*. Retrieved from http://www.360doc.com/content/10/1010/19/3797803_59925729.shtml
- Zhao, H. Y., & Cui, K. (2010). Exploration and thoughts on construction of innovation of agricultural scientific research institutes. *Agricultural Science and Technology Management*, (10), 86-91.