

LABORATORY COMMUNICATION

Brief introduction to the State Key Laboratory of Arid Agroecology

The State Key Laboratory of Arid Agroecology is a laboratory doing research and teaching on arid agricultural ecology. In 1995, the Laboratory was assessed by the Government and opened up to the scholars and scientists. Now, Prof. Chen Jiakuan of Fudan University is the director of the Laboratory. The academic committee of the Laboratory consists of 15 professors in the fields of ecology and agricultural science. Currently, the chairman of the academic committee is Sun Rujong, professor of Beijing Normal University and academician of Chinese Academy of Sciences. The Laboratory is well organized with a team of 20 people, including 16 researchers (8 professors and associate professors, 8 lecturers and associate research fellows), 4 technicians and administrators. Among the 16 researchers, 11 are with Ph. D. degrees.

1 Research fields and main goals

Ecology is a discipline studying the relationship between organism and environment as well as the relationships among various organisms. The ecology-related studies are very much influenced by geological regions. The basic eco-environment of northwest China is characterized by a very dry and cold climate due to its high altitude. Therefore the Laboratory concentrates its effort on the research fields of arid farming ecology and grassland ecology in cold plateaus aiming at solving agricultural problems in arid and semi-arid areas, increasing crop production and improving the quality of eco-environment.

2 Main research achievements

Researches in the Laboratory are focused on the hot subjects in the fields of ecology and arid agroecology. Some new theories have been proposed by the scientists in the Laboratory. They include competition theory, evolutionary stable strategies and ecological field theory. The researches conducted in arid agroecology are of great theoretical significance and closely related to the economical development in China. The theory and practice of rainwater harvesting agriculture proposed have widely influenced the economical development in semi-arid areas. The Laboratory has published 180 research papers and 17 academic books since 1995 (when the Laboratory was evaluated and accepted as a State Key Laboratory). Among them more than 40 papers were published in the journals indexed by SCI. Seven research projects have obtained appraisal, and 12 won the prizes awarded by provincial and ministerial authorities.

3 Training of talents

The State Key Laboratory of Agroecology provides both undergraduate and graduate training programs leading to MS or PhD degrees for students. A postdoctoral training station also accepts several PhD for training programs each year. Since its opening in 1995, the Laboratory has trained 27 MS students, 26 PhD students, and 3 postdoctoral fellows. At present, there are 33 MS students, 41

PhD students and 3 postdoctoral fellows being trained in the Laboratory. Now the Laboratory has become an important base for training qualified young scientists.

4 Academic exchange and cooperation

The Laboratory is active in developing domestic and international academic exchange and cooperation. It has organized 5 national academic conferences, and the people in the Laboratory have also attended domestic and international conferences, at which their research results were presented. The Laboratory often organizes seminars and invites scientists from home or abroad to give lectures. More than 20 people have been sent to the western countries for doing research or being trained. The Laboratory has established relationships with many universities and scientific institutions of Israel, Russia, Finland, the USA and some other countries.

The Laboratory provides the grant for those distinguished scientists to conduct research on the most interesting and the hottest subjects related to the economical development of China. The applicants may refer to the "Applying Guide to Open Foundation of the State Key Laboratory of Arid Agroecology". The grant application should include a clear research goal, detailed plan, expected results, and the project should be possible to be finished within 1—2 years. The Laboratory will provide technical support and equipments for the researches.

5 Main instruments

The Laboratory is well equipped with the following instruments. (i) Remote-sensing and GIS local net systems for processing the information of local agricultural ecology. (ii) Plant growth chambers for cultivating plants and simulating environmental conditions of plant living. (iii) Analytical instruments and equipment for soil sciences, including Kjeltex auto 1030 analyzer, spectrophotometer of atom absorption and others. (iv) Instruments for molecular ecological studies, including DW2000 UV-VIS spectrophotometer, microplate reader, rapid cyclist, ultrasonic cell homogenizer and auto-electrophoresis system. (v) Portable equipment, including Model CI-301PS photosynthetic meter, and a Model CI-203 laser leaf area meter.

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