Western Barley Genetics Alliance
Murdoch University
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23 February 2017

The Secretary
Joint Standing Committee on Treaties
Canberra ACT
jsct@aph.gov.au

Dear Sir/Madam

Western Barley Genetics Alliance (WBGA) is a partnership between Murdoch University and the Western Australian (WA) government Department of Agriculture and Food that collaborates and co-invests in areas of barley genetics research.

Barley is the second largest crop in Australia and we are the world's largest malting barley exporters. Asian countries are the major market for Australian barley. WBGA undertakes collaborative Research and Development in barley genetic improvement and focuses on barley quality, increased yield and reducing risk. Our second task is to train a new cohort of scientists capable of translating cutting edge genetics to applied industry outcomes. Our aim is to enhance the competitiveness of the Australian malting barley industry in the international market over Canada, European, South American and the Black Sea countries.

Prior to my current position of Director, WBGA my previous role was as a Principal Research Officer within the WA government Department of Agriculture and Food and I have worked closely with the Australian barley industry.

I have participated in three RCA projects:

1. Pyramiding of mutated genes contributing to crop quality and resistance to stress affecting quality
2. Supporting mutation breeding approaches to develop new crop varieties adaptable to climate change

3. Promotion of the application of mutation techniques and related biotechnologies for the development of green crop varieties (current).

I have conducted a training workshop for the RCA Regional Training Course on the application of molecular markers to mutation breeding programme which focused on traits contributing to better adaptation (biotic and abiotic stress tolerance) to climate change. This workshop is part of the Asia and Pacific Regional Technical Cooperation Program - Supporting Mutation Breeding Approaches to Develop New Crop Varieties Adaptable to Climate Change. Nineteen delegates participated in the workshop from Bangladesh, China, India, Indonesia, Malaysia, Mongolia, Myanmar, Philippines, Sri Lanka, Thailand and Vietnam.

The main theme of my RCA projects is to develop new crop varieties adapted to the emerging challenges of climate change. These challenges need to be continuously addressed due to the increasing severe occurrence of insects and diseases, water shortage and increasing occurrence of drought. This issue is further exacerbated by the growing population and disappearing large areas of crop lands with economic development. All the countries in the region, including Australia, face the same challenge. For the regional countries there are some missing links and technological gaps in doing research and developing new crop varieties in terms of new plant type construction and new integrated techniques. The RCA approach has enhanced technical cooperation among member countries through research collaboration, training, sharing of knowledge and harmonization of procedures and methods. The Australian team has made key contributions to fill in these gaps.

RCA projects provide an excellent platform for Australian scientists to collaborate with regional countries. Without such a platform it is unlikely that we can work together, with so many countries, for crop improvement. The RCA project has significantly enhanced Australia's standing in the region as the leader for scientific research, education, training and production of the best quality food in the world. As Australian agricultural products are predominantly exported to other countries in the region, the RCA project indirectly promotes Australian trade relations, especially with China, Japan, Indonesia, Vietnam and South Korea. Other tangible benefits include: attracting students to Australian universities and accessing advanced facilities in the region (specifically in China, Japan and Korea). For example, Australia has participated in the China's Space Breeding Program to explore the cosmetic ray effects on crops.

Yours Sincerely

Professor Chengdao Li
Director, Western Barley Genetics Alliance