

## Use of risk assessment to screen the wusu (NW China) biotype of *Altica carduorum* (Coleoptera: Chrysomelidae) for the biocontrol of *Cirsium arvense* in Canada

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The purpose of pre-release screening of candidate weed biocontrol agents is to exclude those that threaten desirable plants. Traditionally this has been done by rejecting candidates which develop on economic plants in no-choice tests. However, there is increasing concern for congeneric native plants, which normally support development in these tests. 'Risk' is the product of the probability of an event and its consequences. The wusu biotype of *Altica carduorum* from *Cirsium arvense* in Xonjiang, NW China was used to try the risk-assessment approach since there are 96 North American taxa of *Cirsium*. The probability that native thistles will be exploited depends on their suitability for acceptance and development. This probability is then multiplied by the consequence of exploitation, which is greater for endangered than common species. Using five multiple-choice tests to determine the worst case scenario, the probability rating was 0.0375 compared to 1.0 for *C. arvense*. The use of risk assessment requires testing several parameters in which the test plant is inferior to the normal host and we suggest several new ones.

## Collaboration on biological control of water hyacinth in south-east Asia

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Water hyacinth, *Eichhornia crassipes* (Mart.) Solms is a major weed of south-east Asia. During the 1970s and 1980s, several countries investigated the use of biological control to check growth and spread of the weed. By the mid-1980s *Neochetina eichhorniae* Warner (Coleoptera: Curculionidae) was present in Australia, Thailand, Indonesia and Malaysia. The moth *Sameodes albiguttalis* (Warren) was also present in Australia. Formal collaboration between CSIRO Australia and NBCRC Thailand commenced in 1990 with a three-year project sponsored by the Australian Centre for International Agricultural Research (ACIAR). Under this project, the weevil *Neochetina bruchi* Hustache was introduced to both countries and also to Malaysia. In Australia, releases of *N. bruchi* were undertaken by the CSIRO Division of Entomology, the NSW Department of Agriculture and the Queensland Department of Lands with assistance from local government officers. In Thailand, releases were made by NBCRC, Bangkok. In Malaysia, releases were controlled by a Working Group with representatives of MARDI, the Department of Agriculture (DOA), ASEAN-PLANTI and others. Because of increasing interest in biological control of water hyacinth in the region, ACIAR agreed to fund a new three-year project between Australia, Thailand, Malaysia, Indonesia (SEAMEO-BIOTROP, Bogor) and Vietnam (VNBCRC, Hanoi) from January 1995.

The project allows for further introductions and distribution of *N. bruchi* and other agents including *S. alboguttalis* and research on agent/plant interactions. Collaboration at state, national and international levels has resulted in cost-effective, widespread releases of agents, training of personnel and closer links between scientists.