

Central Asia Regional IPM CRSP Project Report: October 2007-March 2008
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A. Research/Outreach Achievements:

Collaborative Research on Enhancing Efficiency and Product Lines of Biolaboratories:

A.cucumeris and *A. mckenziei* are commercially important as biological agents for controlling pest on cotton and vegetable crops in Central Asia. Research focusing on colonization and acclimatization of *Amblyseius cucumeris* on bran mites, spider mites and other prey has been conducted in laboratories in Uzbekistan and Kyrgyzstan. The reproduction cycle of predatory mites has been understood. New methodology for rearing predatory mites *A.cucumeris* has been determined. Laboratory research conducted in Uzbekistan and Kyrgyzstan to assess the effectiveness of predatory mites in colonizing spider mites reveal that predatory mites can be potential biological agent against spider mite. Favorable conditions for spider mite colonization were determined. Field releases of *A. mckenziei* for spider mite control in cotton fields in the Andijan region (Uzbekistan) and Osh region (Kyrgyzstan) resulted in suggested guidelines for releases of the predatory mite at different predatory: prey ratios depending on high and low spider mite densities. *A.mckenziei* was effective against *Tetranychus urticae*. It was established that the optimal ratio of predatory mite application at pest density 300 - 400 per plant is 1:7. At a higher spider mite density *A.mckenziei* should be applied 2 times every 12 days at ratio of 1:50. In addition, studies have been conducted on developing methods for maintaining predatory mite stock cultures during winter time. The survival ability of *A.cucumeris* in winter time at low and normal temperatures was determined in laboratory condition on *Acarus farris* as prey, adding pollens of wild plants and orchard trees as additional food sources. The experiment showed that survival and reproduction capacity of *A. cucumeris* during winter time is enhanced by a complex source of pollens. Dr. Tashpulatova has finished searching for literature for additional studies on reproduction of *Amblyseius cucumeris* and its prey (grain mites) at low temperature and at different level of humidity. Data on *Amblyseius sp* worldwide rearing and application in different crops against spider mites and thrips have been found. A small pocket book guide for farmers covering predatory mites and their preys as well as a study of *A. mckenziei* effect on *Thrips tabaci* on onions have been revised for publication.

Collaborative Landscape Ecology and Biological Control of Pests:

Research plots established in Tajikistan and Kyrgyzstan to test native plants for their attractiveness to natural enemies of pests continue. In collaboration with the Tajik State National University and the Institute of Zoology and Parasitology, 24 local nectar plants are being tested in Tajikistan. In Kyrgyzstan only 10 plants are being tested.



As an initial step for introducing successful local nectar plants into existing vegetable farming systems, a workshop on “Landscape Ecology Concept” was conducted in Tajikistan on February 27, 2008. The workshop was attended by 15 participants (1 female and 14 male) from Ministry of Agriculture of Tajikistan, Farmers Association of Tajikistan, National Biodiversity Conservation, Agrobiodiversity conservation, Institute of Zoology and Parasitology, Institute of Plant Protection and Quarantine and International NGOs such as ACTED and CARE International. Representative of

Farmers Association of Tajikistan and Agrobiodiversity conservation agreed to work with the IPM

CRSP Project in establishing Nectar plant strips (8-10 nectar plant species) into existing vegetables crops in Hissor valley of Tajikistan. In collaboration with the Institute of Plant Protection and Quarantine a screening of wheat varieties for resistance to Cereal leaf beetle (CLB) was conducted. Experiment consists of 130 wheat entries obtained from the Biodiversity and Integrated Gene Management Program (BIGMP) of ICARDA.

Strengthening IPM Outreach and Educational Programs:

To enhance the university education, Dr. Aitmatov has conducted an inventory and analyzed IPM education programs in Central Asian and Russian Universities. These IPM programs were used to design course programs for Student Farm School (SFS). The first teaching program on IPM –SFS was established at the Kyrgyz Agrarian University in November 2007. Fifteen students (3 female and 12 male) were selected for the SFS and they are working on various research topics including: Introduction of nectar plant into existing vegetables farm systems as method of conservation of natural enemies in agroecosystems, impact of mulching on soil microflora, resistant of different of wheat varieties to Cereal Leaf Beetles and design of landscape. Drs. Saidov and Aitmatov are providing the supervision for these research projects. Dr. Murat has published many extension bulletins for use by farmers. Various trainings are also held focusing on methodology of IPM technology transfer to ToT, FFS and SFS.

B. Networking in the Region and Internationally:

- Dr. Nurali Saidov attended the “Organic Week workshop in Tajikistan” organized by the Oxfam



GB in Tajikistan from 17-20 October 2007. The goal of workshop was to introduce organic agriculture concepts in Tajikistan. Participants came from Avalon (Netherlands), Azerbaijan, Georgia and Kyrgyzstan. A Farmer Field Day was organized at the end of the workshop with the participation of various stakeholders from the Tajik Ministry of Agriculture and Natural Protection, Tajik Agricultural University, local farm group and represented of UNDP, UNIFEM, FAO, ACTED, Germane Agro Action, Save the Children, Caritas, Counterpart and CARE.

- In collaboration with Dr. Chrystopher Martius (Head of ICARDA-PFU), Dr. Tashpulatova has submitted a proposal to the World Bank.

C. Publications:

1. K. M. Maredia and D. Baributsa (eds). 2008. Integrated Pest Management in Central Asia. Proceedings of the Central Asia Regional IPM Forum, Dushanbe, Tajikistan, May 2007.
2. K. M. Maredia and D. Baributsa. 2008. Ecologically-based Participatory and Collaborative Research and Capacity Building in Integrated Pest Management in Central Asia Region. In K. Maredia and D. Baributsa (eds). *In* Integrated Pest Management in Central Asia. Proceedings of the Central Asia Regional IPM Forum, Dushanbe, Tajikistan, May 2007.

3. N. Saidov, D. Landis and M. Bohssini. 2008. A History of Habitat Management in the Former USSR and the Commonwealth of Independent States and Current Research in Central Asia. 2007. *In* K. Maredia and D. Baributsa (eds). *In* Integrated Pest Management in Central Asia. Proceedings of the Central Asia Regional IPM Forum, Dushanbe, Tajikistan, May 2007.
4. B. Tashpulatova and F. Zalom. 2008. Enhancing the Efficiency and Product Lines of Biolaboratories in Central Asia. *In* K. Maredia and D. Baributsa (eds). *In* Integrated Pest Management in Central Asia. Proceedings of the Central Asia Regional IPM Forum, Dushanbe, Tajikistan, May 2007.
5. M. Aitmatov, G. Bird, W. Pett and D. Baributsa. 2008. Development and Dissemination of IPM knowledge through Outreach and University Education Programs in Central Asia. *In* K. Maredia and D. Baributsa (eds). *In* Integrated Pest Management in Central Asia. Proceedings of the Central Asia Regional IPM Forum, Dushanbe, Tajikistan, May 2007.
6. B. Tashpulatova. 2008. Integrated Pest Management in Uzbekistan. *In* K. Maredia and D. Baributsa (eds). *In* Integrated Pest Management in Central Asia. Proceedings of the Central Asia Regional IPM Forum, Dushanbe, Tajikistan, May 2007.
7. A. S. Saidov, N. S. Saidov, V. K. Nazirov. 2008. Pest Management Practices and Strategies in Tajikistan. *In* K. Maredia and D. Baributsa (eds). *In* Integrated Pest Management in Central Asia. Proceedings of the Central Asia Regional IPM Forum, Dushanbe, Tajikistan, May 2007.
8. D. A. Landis, M. M. Gardiner, A. K. Fiedler, A. C. Costamagna and N. Saidov. 2008. Landscape Ecology and Management of Natural Enemies in IPM Systems. *In* K. Maredia and D. Baributsa (eds). *In* Integrated Pest Management in Central Asia. Proceedings of the Central Asia Regional IPM Forum, Dushanbe, Tajikistan, May 2007.
9. R. Mavlyanova, M. Aitmatov, N. Saidov and M. Shodmonov. 2008. Field guide “Weeds on your field” in vegetable crops (in Russian). 36 p. 170 copies published.
10. M. Aitmatov, B.U. Masaidov and N. Saidov. 2008. Brochure on “Botanical pesticides against of vegetables and fruit pests” (in Kyrgyz and Russian). 46 pages. 100 copies published.
11. A. Murat, G. Bird and G. Kaseeva. 2008. Strengthening Student Research Capacity Through Student Field School. Article published in the Bulletin of the Kyrgyz Agrarian University. 6p. March 2008.
12. Translation of “Sunn Pest Management” brochure from English into Tajik and Kyrgyz. 100 copies published. Distributed to farmers in Tajikistan and Kyrgyzstan.

D. Presentations: Two power point presentations by Dr. Nurali Saidov at the “Organic Week workshop in Tajikistan” organized by the Oxfam GB in Tajikistan from 17-20 October 2007:

- Introduction to Organic Agriculture
- Pest management in organic crops.