Results of the activity of Michigan State University in Central Asia region

Collaborators: Michigan State University, University of California-Davis, University of Kansas, ICARDA, AVRDA and others.

Executors: Drs: Douglas Landis, George Bird, Walter Pett, David D, Muvish Maredia, Frank Zalom, Mustafa Bossini, Nuraly Saidov, Barno Tashpulatova, Murat Aitmatov and others

Research associate from Central Asia region:
- Dr. Nuraly Saidov - Tajikistan
- Dr. Barno Tashpulatova – Uzbekistan
- Dr. Murat Aitmatov - Kyrgyzstan

ICARDA

The Institute of International Agriculture Michigan State University

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The first phase of the project

Components:

- Strengthening of the interrelation of bioloaboratory of Central Asia;
- Landscape ecology;
- Development of guideline for national trainers of IPM – FFS and introduction of FFS in Tajikistan, dissemination of them in Kyrgyzstan.

Situation of the agricultural knowledge and informational system (AKIS) in Central Asia

- 155 farmers from Kyrgyzstan .
- 135 farmers from central region of Tajikistan .
- 70 owners – Kazakhstan

- 71%-90%- on management of pests – heads of the family
- 390 -500 liters of pesticides for season
- Has no conception about entomophages and others
- 64%- use chemicals, 30%- resistant varieties, 10%-и\irrigation
- Lack of information on various spheres of agriculture



Data base

- Entomologists.
- Phytopathologists.
- Pecsticide management.
- Soil.
- Plant immunity
- Biomethods

Introduction of entomophages

Amblyseius mckenziei

IPM- landscape ecology

Traineeship and development of conception
of landscape ecology

Progress

- Collection of flowering plants

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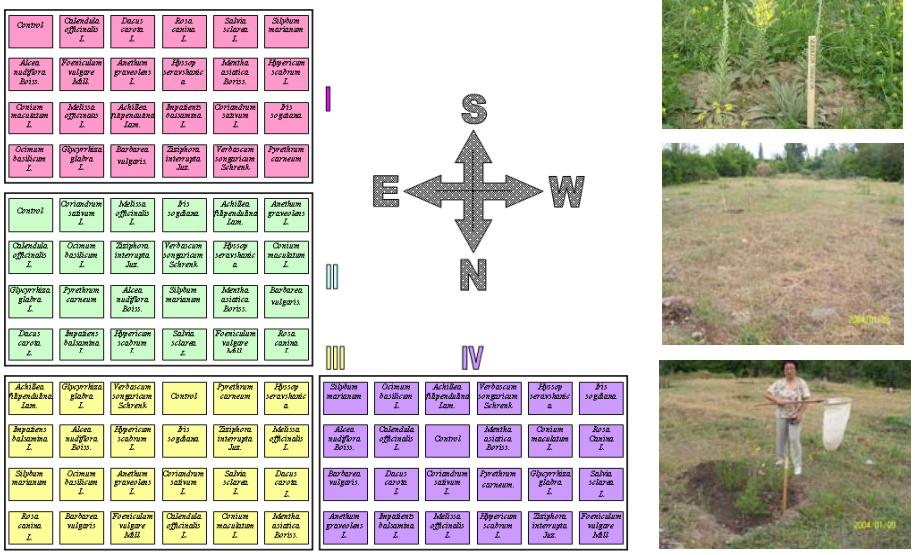
Methods of plant choice

- Local perennial plants.
- Plants with various period of flowering beginning from early spring to late autumn.
- Types of plants of various kinds
- Flowering diversity.
- Diverse types of plants (herbaceous, shrub).

Scheme of practice ground



Results

Issued:
The guideline for trainers in two tomes, brochures, pocket books, posters and agro Entomological cartogram

2nd phase of the project

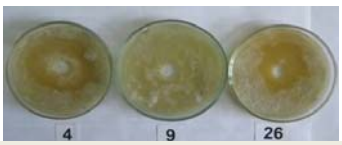
- **IPM – wheat** - Tajikistan
- Dr. Nuraly Saidov

- **IPM – vegetable culture** (tomato)- Uzbekistan
- Dr. Barno Tashpulatova, Gulnara Zhumaniyazova.

- **IPM – potato –** Kyrgyzstan
- Dr. Anara Chakaeva, MSDSP- Aga Khan Foundation
- **Expert** on teaching Dr. Murat Aitmatov

Development of tomato IPM in Uzbekistan

Antagonistic activity of Trichoderma harzianum against Fusarium ((1) trichoderma spore in mid; (2)-control)



Antagonistic activity of Bacillus subtilis(4, 9, 26) against F. oxysporum

Action B. subtilis (4 и 9) and Association B. subtilis to germination and growth of tomato (laboratory experiment after 90 days)

Action of association of three B.subtilis (second on left) to germination and growth of tomato in soil infected F.oxysporum

Testing of microbial drug in greenhouse

Action of B.subtilis +T.harzianum to growth of tomato in greenhouse (1 line on right – seedling cultivated B.subtilis+T. harzianum and spraying it with biofertilizer «Serchosil» during the plant growth; 2 line – seedling, cultivated «Phytovac» (stimulator of the growth) ; 3 line – control: usual way of tomato cucltivation

Drugs of useful microorganiozms have notably pressed кладоспориоз of tomato in greenhouse – fungal disease of leaves in greenhouse Cladosporium Fulvum

Development of wheat IPM in Tajikistan

- Development and introduction of IPM package for wheat
- Choice of resistant varieties of wheat against diseases (rust)
- Learning and identification of resistant varieties of wheat against the harmful bug and pyavitsa
- FFS for farmers of Sogdy, Gissar and Hatlon oblasts of Tajikistan

Development of potato IPM in Tajikistan and Kyrgyzstan

- Development and introduction of IPM package for potato
- Choice of resistant varieties of potato against diseases (фитофтороз)
- Learning and identification of resistant varieties of potato against pests (colorado beetle)






Role of growing medium of the soil to growth and development of potato

1) Fosstim -3 (*B. subtilis* BS-26 used for treatment of seeds or tubers before seeding);

2) Serkhosyl (drug contenting bacteria and weeds which was sprayed to leaves of potato before flowering);

3) Biocom (compost developed in laboratory of soil mikrobiology).

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Without fertilizer

control - NPK – 100%

control - NPK-50%

experience - NPK-50% + Fosstim-3 + Serhosil

Personnel training

- Present time three young scientists are studying PhD in MSU in the framework of the project:
- Eshkanov Bakhodyr from Uzbekistan

• Shahno –Tajikistan

- Saltanat Mambetova from Kyrgyzstan , she is doing her scientific works in laboratory of selection and genetics of potato under the supervision of Dr. David Douches