IPM packages deliver food security
For the past 5 years IPM CRSP researchers have been developing sets of agricultural practices for wheat and vegetable production in Central Asia. The anticipated outcome is improved plant health, reduced pesticide use, and a resulting increase in production and food security along with farmer income.

By partnering with scientists, educators, outreach specialists, and farmers in the region, the IPM CRSP is working to improve the livelihood and food security of people living in poverty in Tajikistan, Uzbekistan, Kyrgyzstan and the surrounding area.

An IPM package is a set of practices and technologies that can be used in production to increase yield and reduce pesticide use. Key pests in open fields are fruitworms, cutworms, tomato russet mites, leafminers, aphids, nematodes, bacterial spot, early blight, macroporsion leaf spot, late blight, damping-off, top rot of fruit, septoria blight, tobacco mosaic virus, potato virus–X, mild mosaic, cucumber mosaic virus I, single virus streak, stripe, and tospoviruses. Potential IPM practices to reduce these pest problems include:

**Soil or seed treatments**
Trichoderma lignorum can be released on the soil before planting to help control soil borne fungal and bacterial diseases.

**Grafting on resistant root stock**
Grafting on resistant root stock offers Fusarium disease control.

**Biological control**
Encarsia can be released for biological control of whiteflies, and Trichogramma and Bracon for biocontrol of fruitworms. Biopesticide options are neem, nucleopolyhedrosis virus, Verticillium, Beauveria Bassiana, Metarhizium and others.

**Cultural control**
Mulching in the crop conserves moisture and helps with disease control. Removing disease-infected plants stops further spread.

**Monitoring for pests**
Placing yellow sticky traps in the field helps monitor for whiteflies and aphids and assist in control decisions. Pheromone traps can be used to monitor for tomato fruit worm, and blue sticky traps for thrips.

For more information
www.ipm.msu.edu/central-asia.htm

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