

# Ecologically-based IPM Package for wheat production in Tajikistan



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## 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 of a crop to increase yield and reduce pesticide use.** The key pest problems for wheat production in Tajikistan are yellow rust (stripe rust), Sunn Pest and cereal leaf beetles. Potential IPM components to reduce these problems include:

### Disease resistant varieties

Collaborating international and local wheat breeders have identified several wheat varieties resistant to yellow rust. These have been released for use by Central Asian farmers.

### Seeding rates

Seeding rates are being studied to fine-tune the optimum rates for best yields.

### Planting and harvest dates

Research indicates that planting

wheat earlier in northern Tajikistan can help avoid infestation by the Sunn pest, a group of insects that damages plants and reduces yields and quality by feeding on leaves, stems, and grains. Harvesting wheat immediately after physiological maturity also reduces the effects of these pests.

### Biological control

Native parasitoids exist for Sunn pest and cereal leaf beetle. Planting local native plants such as coriander and dill near wheat fields could provide a nectar source for the beneficial species that can reduce pest insect populations.

### Fertilizer rate and timing

Delivering fertilizer to the plants at the right time and amount will enhance plant health and yields.

### Weed control

Controlling weeds early before they can compete will improve wheat yields.



For more information: [www.ipm.msu.edu/central-asia.htm](http://www.ipm.msu.edu/central-asia.htm)



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