

CENTER FOR SUSTAINABLE INTEGRATED PEST MANAGEMENT IN COLORADO



IPM PROJECTS – MARCH 2014

The following is a non-inclusive list of the IPM projects (applied research and extension/outreach) being conducted by CSU faculty in the Department of Bioagricultural Sciences & Pest Management.



AGRICULTURE

Vegetable crops

- The disease management program (Schwartz) seeks (1) to identify and incorporate sources of white mold disease resistance in acceptable cultivars of dry bean and study the variability in aggressiveness of isolates of *Sclerotinia sclerotiorum* and (2) to study the epidemiology involved with Iris yellow spot virus (IYSV) and disease resistance and onion thrips.
- Thrips-resistant vegetable cultivars are being evaluated (Cranshaw).
- The IPM PIPE (pest identification platform for extension and education <http://www.ipmpipe.org/>) is an integrated national system that provides centralized useful tools for IPM practitioners (Schwartz)
- This project focuses on the ecological interactions involved in the competitive displacement of *Cotesia glomerata* by *C. rubecula*, two imported biological control agents of the imported cabbageworm *Pieris rapae*, a serious pest of cruciferous crops worldwide (Ode).
- Herbicide resistance in weed species are being studied (Westra, Nissen).

Grain crops

- Management approaches for Russian wheat aphids that are as environmentally sound and cost effective as possible are being explored, such as wheat varieties resistant to the aphid and effective biological controls (Peairs).

- Management of corn spider mites and other pests associated with water-limited cropping systems (Peairs).

FORESTS & RANGE

Several projects address invasive species management and adaptive strategies to establish desirable plant communities and sustainable plant communities that can resist re-invasion (Nissen). The Invasive Weed Master program includes a course curriculum, with appropriate educational materials and handouts (Beck) and a 46-page booklet (a guide for identifying and managing weeds in schoolyards & landscapes) was completed (Young). Additional materials related to IPM methodology in both cultivated and natural lands are being developed.

Forest insect and disease issues, including exotic pest movement on firewood, mountain pine beetle and wildfires, the effect of magnesium chloride and trees, and dwarf mistletoe and fire fuels are being studied (Jacobi).

GARDENS, LAWNS & LANDSCAPE

Colorado Master Gardener (CMG) volunteers assist CSU Extension staff in delivering knowledge-based gardening information to foster successful gardening. Annually, 1,600 CMG volunteers serving in 36 county/area based programs donate \$1.4 million in volunteer time. Faculty provides beginning and advanced training to volunteers in ornamental pests (Cranshaw, Blunt).

Advanced ornamental pest diagnostics workshops target diverse topics, including production of small fruit, turf, and vegetables. The workshops reach audiences throughout the intermountain west, in Colorado, Wyoming, New Mexico and Utah. External evaluations of training courses from demonstrate a substantial increase in skills and knowledge (Blunt, Camper, Cranshaw).

Since Emerald Ash Borer was found in the state in September 2013, IPM recommendations are being developed.

The nursery & landscape IPM project has developed integrated pest management strategies for insect pests and diseases of ornamental plants in nurseries, landscapes and urban forests (Jacobi).

The CSU plant diagnostic lab provides diagnosis of insect and disease problems (Blunt, Camper).

SCHOOLS & HOMES

Through fact sheets, newsletters, workshops and websites, information on pests of residences and structures is readily accessible to public, pest control operators, and facility managers. A large number of publications address issues unique to the Rocky Mountain States (Cranshaw, Blunt, Camper, Young).

The School IPM program demonstrates best IPM practices by conducting on-site assessments using established IPM measures; providing customized and targeted training in school districts in; and collaborating with other states and regions in methodology and educational outreach (Young).

The Colorado Environmental Pesticide Education Program (CEPEP) is committed to providing accurate, up-to-date information on pesticide laws and regulations, environmental protection, worker protection, and pesticide safety for applicators, trainers, agricultural workers and supervisors, and the public (Walker).

