



Biological Control for Greenhouse Growers

MICHIGAN STATE UNIVERSITY | Extension



Michigan State University Extension and Kansas State University Extension are now offering a fall term of the non-credit pre-recorded online course on biological control. It is the third course in the College of Knowledge Online series offered on [the eXtension campus](http://theextensioncampus.org), the national Extension website. The course is intended for greenhouse growers and others interested in learning about the fundamental concepts of biological control and the challenges and opportunities associated with a biological control pest management program. The content of the course covers introductory materials to more advanced concepts such as utilizing banker plants.

The 4-hours of pre-recorded lecture and video demonstrations are divided into six units:

- Unit 1: Introduction to Greenhouse Biological Control
- Unit 2: Commercially Available Biological Control Agents
- Unit 3: Using Banker Plants in Biological Control Programs
- Unit 4: Implementing a Biological Control Program
- Unit 5: Interactions of Pesticides and Biological Control Programs
- Unit 6: Greenhouse Examples of Biological Control Systems

The course is taught on the eXtension campus by Heidi Wollaeger, Greenhouse and Nursery Extension Educator, with Michigan State University Extension. Dr. Raymond Cloyd (Kansas State University Extension) co-authored the course and provided supplemental video content.

Individuals enrolled in this self-paced course will take a pre-test and a final exam to assess their progress on the topics associated with the course. Self-assessment quizzes will engage individuals with the material. The course also provides links to additional resources on pertinent biological control topics.

Biological Control for Greenhouse Growers is available through campus.extension.org.

Course offerings: This non-credit course is offered twice a year (summer and fall). **Register by October 21, 2016 for the fall session at:** <http://events.anr.msu.edu/BiologicalControlforGreenhouseGrowers/> Individuals enrolled in the fall session will have access to the course material from October 14, 2016 through January 13, 2017. The summer session opens for enrollment on May 1, 2017 and the course material will be available to registrants from June 1, 2017 to August 31, 2017.

Cost: \$129* per individual

**Once individuals have paid for the course, completed the pre-test, final exam, and the post-course evaluation, they will be eligible for a \$20 refund. The individuals must complete all course work by January 13 and emailed the instructor, Heidi Wollaeger (wollaeger@anr.msu.edu) by January 13 to receive the refund. If all conditions are met, the cost of the course is \$109. Cancellation policy: Due to the online nature of this course, individuals wishing to cancel their registration are subject to a \$129 fee. There are four scholarships available for those that are interested in the course but do not currently have the means to take it. Please see the registration website for more details.*





MICHIGAN STATE UNIVERSITY | Extension

Greenhouse and Horticultural Lighting

Michigan State University Extension is now offering a non-credit pre-recorded online course on greenhouse and horticultural lighting. It is the second course in the College of Knowledge Online series offered on the [eXtension campus](http://extensioncampus.org), the national Extension website. The course is intended for greenhouse and ornamental plant growers and others interested learning about the fundamental concepts about how plants respond to light quality, quantity, and in duration. It provides introductory to moderately-challenging content based on experiments performed at Michigan State and Purdue Universities.

The 3-hours of pre-recorded lecture and video demonstrations are divided into seven units:

- Unit 1: What is Light?
- Unit 2: Importance of Light for Plant Growth
- Unit 3: Light Quality
- Unit 4: Light Intensity
- Unit 5: Light Quantity
- Unit 6: Photoperiod and Photoperiodic Lighting
- Unit 7: Low- and High-Intensity Lighting

The course is instructed by Heidi Wollaeger, Greenhouse and Nursery Extension Educator, with Michigan State University Extension. The course was adapted and updated from the original College of Knowledge unit developed by Dr. Royal Heins (Professor Emeritus, MSU) and includes a substantial amount of recent research by Dr. Erik Runkle (Professor of Horticulture, MSU). Supplemental content including videos demonstrating concepts are from Dr. Roberto Lopez and Garrett Owen (Purdue University).

Students enrolled in this self-paced course will take a pre-test and a final exam to gauge their progress on the topics of the course. Self-assessment quizzes will engage students with the material throughout the course. The course also provides links to 36 trade articles published on pertinent lighting topics.

Greenhouse and Horticultural Lighting is available through campus.extension.org. **Cost: \$129.00***

**Once students have paid for the course, completed the pre-test, final exam, and the post-course evaluation they will be eligible for a \$20 refund. The students must complete all criteria by February 28 and have emailed the instructor, Heidi Wollaeger (wollaeger@anr.msu.edu), by February 28 to receive the refund. If all conditions are met, the cost of the course is \$109. There are four scholarships available for those that are interested in the course but do not currently have the means to take it. Please see the registration website for more details.*

The winter session of this course will be offered from December 2016 through February 2017. Register from October 7th to November 30th for the winter Greenhouse and Horticultural Lighting Course: <http://events.anr.msu.edu/GreenhouseHorticulturalLighting/> The next session after the winter session will be the summer session will be July, August, September 2017.

