

11 – Organic Weed Management Approaches - Onions Evaluating Organic Weed Management Approaches and Onion Cultivar Trials in Northern Colorado

Faculty Mentor

Mark E. Uchanski, Ph.D.

Associate Professor of Horticulture, Extension Specialty Crops Specialist

Department of Horticulture and Landscape Architecture

Phone: 970-491-4885

mark.uchanski@colostate.edu

Field-Based Mentor

Thaddeus Gourd, Ph.D.

Colorado State University Extension Director for Adams County

9755 Henderson Rd. Brighton, CO 80601

Office phone: 303-637-8117

tgourd@adcogov.com

Weed Science Adviser

John Spring, Ph.D.

Colorado State University Area Extension Agent-Agronomy for Golden Plains Area

315 Cedar, Suite 100 County Courthouse Julesburg, CO 80737

Office phone: 970-474-3479

john.spring@colostate.edu

A student intern is needed to evaluate organic weed management tools for an onion crop and to help the researcher who oversees the Northern Colorado Onion Cultivar Trial in 2019. The internship will occur at the research field plots (with grower cooperation) associated with Adams County Extension in Brighton. The student intern will need to have his/her own transportation to the Extension office in Adams County, but a work vehicle will be made available to travel to the participating off-site specialty crop farms.

Onions are an economically important crop to Colorado growers. In 2015, Colorado ranked 6th in the nation for onions sales (\$28,000,000). Field research in Adams County will continue this season to help Colorado onion growers stay competitive by providing them with timely, science-based information. The 2019 trial will evaluate 30 onion cultivars for yield, marketability, storability, and pest problems.

The goal of this internship is to afford a student the opportunity to have an extension-based learning experience and to learn the aspects that go into managing a research trial. The aim of the trial is to provide research-based options that will help onion growers make the right cultivar selection each year for their farms. In addition, weed management technology research is needed to address weed pressure, particularly from Venice mallow. The intern, with guidance, will be expected to plan the experimental design, and evaluate the results throughout the 2019 onion growing season (June-August). In addition, the intern will share real time results with specialty

crop growers through images and videos. A publication including results from the study will be written by the intern.

Learning outcomes:

1. Professional development through grower meetings and on-farm evaluations.
2. Expand student's professional network through industry interactions at the onion field day in August, among other opportunities.
3. Gain vegetable crop management experience with Colorado specialty crops.
4. Research and report results by writing a publication for specialty crops growers.

This internship would provide support to an ongoing project through Adams County Extension to help Colorado onion and other specialty crops growers. Many growers have expressed interest in adding organic to their production portfolios, but they need more options for weed control. This project would address this stakeholder need by evaluating a nonsynthetic desiccant herbicide (caprylic/capric acid) approved for use in organic systems, with restrictions. Interns will have the opportunity to provide efficacy and crop phytotoxicity information to help growers decide whether to incorporate an organic herbicide into their suite of weed management tools.

In addition, onion growers would benefit from knowing cultivar characteristics such as level of pink root resistance, long-term storability, marketability, and yield. An intern will have the opportunity to research and provide results based information to help support the competitiveness of the Colorado onion industry.

Research project goals:

1. The adoption of more integrated weed management tools on specialty crops farms across the spectrum of production practices from certified organic to conventional management.
2. Help onion growers make educated decisions on cultivars based on environmental conditions and pest pressure experienced in Northern Colorado.

*Housing is NOT available for the internship.