SAREC Short Reports

Alternative winter dryland crops

**Investigator:** Carrie Eberle

**Issue:** Wyoming dryland wheat farmers need ways to increase profitability and reduce farm risk through sustainable intensification of acres, development of new cropping rotation strategies, and integrated agricultural systems.

**Goal:** Study the potential to grow the winter crops pea and camelina—in rotation with winter wheat—under dryland conditions in southeast Wyoming.

**Objectives:** Evaluate Austrian winter pea, winter pea ‘WyoWinter’, winter camelina ‘Bison’, and winter camelina ‘Joelle’ for stand establishment, winter survival, water use, and seed and biomass production when seeded into standing wheat stubble and prepared dryland fields.

**Expected Impact:** Results should provide growers information on planting management and production potential of alternative crops for dryland production.

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**Keywords:** winter pea, winter camelina, dryland farming

**PARP:** I:1,2,5,9, X:1

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Pulse crops as a possible rotation with dryland winter wheat

**Investigators:** Amberle Filley and Carrie Eberle

**Issue:** A large portion of winter wheat is cropped in a wheat–fallow rotation, but volatile markets and low rotation diversity make this an unsustainable rotation. With more demand for high-protein crops worldwide, this project looks to help provide High Plains’ producers the information needed to grow pulse crops and take advantage of markets, diversify their rotation, and increase soil fertility.

**Goal:** Determine if pulse crops can be incorporated into the dryland winter wheat rotation to improve the overall sustainability of farming in southeast Wyoming and surrounding areas.

**Objectives:** Evaluate guar, dry pea, lentil, and chickpea yield, water use, and nitrogen (N) fixation in dryland conditions.

**Expected Impact:** Results of this trial should provide information to producers on when to plant, what N gains can be expected in the soil, whether early termination is a viable option (which may be necessary during drought years), and what yield expectations they can have for southeast Wyoming.

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**Keywords:** dryland farming, pulse crops, sustainable farming

**PARP:** I:1,2,5,9, II:5,7,9, X:1

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*Figure 1. Winter pea ‘WyoWinter’ on October 11, 2017, at the James C. Hageman Sustainable Agriculture Research and Extension Center.*