Winter Field Pea Cultivar

Description of Technology
Wyo #11 is a winter field pea cultivar developed at the University of Wyoming (UW) and the Wyoming Agricultural Experiment Station (WAES) for adaptation and high yield for forage and seed production on the Central Great Plains (CGP). Diverse winter pea genetic lines/cultivars were hybridized and then selected over six generations. Wyo #11 ranked as the top line and proved to be statistically superior to most other lines tested. Wyo #11 is a tall, indeterminate type pea with wild-type leaves (stipules, leaflets, and tendrils). Flowers are purple. Seed coat is pigmented ranging from green to brown (green predominant), and with numerous small purple flecks. Cotyledon color is yellow. 1000-seed weight is 110 grams. Seedlings emerge with multiple shoots.

Applications
Winter pea (Pisum sativum ssp. arvense L.), as a nitrogen-fixing, cool-season annual legume, that might serve as a partial or complete replacement for fallow in the winter wheat–summer fallow farming system in the CGP. This could help farming and ranching in the region become more economically and environmentally sustainable, considering all the benefits of a legume in the rotation and the potential to integrate cereal and livestock production.

Features & Benefits
Benefits resulting from rotation of wheat with legumes include:
- Increased soil nitrogen
- Increased soil organic matter
- Reduced soil erosion
- Pest control
- Increased soil water-storage efficiency
- Increased economic diversity
- Possible sequestration of carbon via more intensive cropping in an age of climate change
- Growers in Europe, Australia, and the U.S. Pacific Northwest’s Palouse region have successfully integrated cereal and livestock production with winter field pea in crop rotation.

Market Opportunity
No cultivars of winter pea have been bred for local adaptation and productivity on the CGP. Wyo #11 Winter Field Pea Cultivar is the first product of this project.

Plant breeders have demonstrated that field pea can be improved for local adaptation and yield potential.