

Winter pea and lentil offer growers a way to diversify winter wheat systems

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Ag researchers are studying winter peas and lentils to see whether they offer enough yield advantage over spring peas and lentils that they would make a better rotation choice for winter wheat growers.

In Washington and Idaho, winter peas and lentils have typically had 50 percent greater yields than spring-seeded types. This has not always been the case in Montana studies, says Miller. However, in Montana planting date of winter pea and lentil crops has been "absolutely critical" in the past two years of studies near Bozeman and Moccasin, say researchers.



A semidwarf winter pea at Amsterdam, MT

"In the fields near Amsterdam and those at Moccasin, a mid-September seeding date far out-performed a late September date two weeks later," said Perry Miller, Montana State University cropping systems researcher. Coordinated work is underway with Chengci Chen, a cropping systems agronomist at MSU Central Agricultural Research Center at Moccasin, and in Idaho and Washington with Kevin McPhee and Fred Muehlbauer, the USDA-ARS legume breeders stationed at Washington State University - Pullman.

"It's possible that even earlier fall seeding would be more advantageous, but typically Montana doesn't have the rain to get it started," said Miller.

Chen said the Moccasin area is "very suitable for pea and lentil production. The greatest advantage for the winter types is that the crops have a longer growing period and may mature a little earlier before drought conditions. The winter type of peas and lentils generally produce more branches and pods, which could translate into higher yield. Winter lentil yield was much higher than these spring types at Moccasin this year."

At Moccasin, winter lentils planted Sept. 13 yielded 68 percent more and those planted Sept. 30 yielded 34 percent more than spring lentils planted April 11.

The stands at Moccasin have had better over-wintering conditions than those in the past two years at Amsterdam, said Miller.

Miller said he is excited about the potential of winter peas and lentils, partially because new winter varieties suitable for Montana may allow marketing for food in addition to livestock feed markets.

"The Agricultural Research Service in Pullman has come up with clear-coated winter types. The clear coated types have the potential to enter food-grade markets," said Miller.

Muehlbauer has said that the winter lentils being bred now were collected in the highlands of Turkey about 25 years ago. "We are now getting types that are adapted here. They yield well; and they've got decent quality. I think we can start to think about releasing and commercializing them," said Muehlbauer in an interview in 2000.

There's also an exciting annual forage potential, said Miller. In 2003, winter pea yielded 1.1 tons per acre of forage on June 11 in a trial at Amsterdam.

"We're checking to see if this is an effective partial fallow strategy for conserving soil water," said Miller.

There are distinct differences between how the peas and lentils are growing in Washington, Idaho and Montana, said Miller. In Montana, relatively dry spring soil conditions often permit earlier spring seeding dates than in Idaho or Washington.

The expected yield advantage of winter peas and lentils over the spring-seeded varieties didn't show up in the first year of the study at either Amsterdam or Moccasin, said Miller. The improvement in yield at Moccasin this year is encouraging, but more data is needed and the data is not yet in on yields at Amsterdam this year.

Flowering has also been extended in winter pea in Montana, to the point where they are not being harvested any earlier than spring types and sometimes even later. Winter lentil looks a little more promising for increased yield potential but doesn't appear to be as hardy as winter pea.

There are few broadleaf crops that can be planted in the fall now, say the researchers. Fall broadleaf crops would help break plant disease cycles that start when one cereal crop is planted after another in the same field.

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