Kansas Rural Center
SUSTAINABLE AGRICULTURE
MANAGEMENT GUIDES

AUSTRIAN WINTER PEAS

AUGUST 1998 MG1G.1

Austrian winter peas are a fall seeded cover crop that can be used for grazing, hay, and a green manure plow-down. One to two tons of dry matter can be produced. Austrian winter peas do best in a pH range of 6.3-7.0. It requires adequate phosphorus and potassium ("Cover Crop Guide," 1988). Austrian winter peas perform poorly under low light levels. Hence, it doesn't interseed well into corn ("Cover Crop Guide," 1988). Delaying planting by one month in the fall reduced an organic matter yield by almost 2 tons per acre ("Austrian Winter Peas," 1983).

Establishment

The suggested drilled seeding rate is 30 pounds per acre into a seedbed similar to that prepared for wheat (French). If mixing Austrian winter peas with a cereal nurse crop, seed at 15 pounds per acre. If overseeding into soybeans at leaf yellowing, broadcast at 60 pounds per acre (Delang Seed Company). In southcentral Kansas, plant in mid-September. However, there has been some farmer success when drilled as late as the beginning of October (French). Plant at a depth of 1/2-1 inch ("Cover Crop Guide," 1988).

Winter Hardiness

This is one of the more limiting factors of Austrian winter peas. Severe fluctuations between warm temperatures and cold exposure will increase winter kill. In April of 1989, temperatures that bounced from 90 to 11 degrees over a relatively short time killed an estimated 70% of the stand. However, the harsh sub-zero temperatures of December of 1989 seemed to only burn the peas back (French).

Nitrogen Credits

KSU station trials near Hutchinson with Austrian winter peas had fall ground cover that ranged from 26 to 36 percent. Pea growth terminated May 16 was about one-half of the peas terminated June 4. The first increment of fertilizer nitrogen had the greatest effect on whole plant nitrogen and grain yield. Under the June termination, approximately 30 pounds per acre nitrogen fertilizer following the cover crop produced comparable sorghum yields to no cover crops with 90 pounds per acre nitrogen (Heer, 1996).

In Idaho research, nitrogen credits were equal to 80 pounds per acre the first year. Residual nitrogen in soil will significantly reduce nitrogen fixation so that the peas' nitrogen needs are met by residual soil nitrogen. Peas will reduce residual soil nitrogen leaching beyond the root zone. The nitrogen stored in the organic matter will be released over a period of 2-3 years. Most of the nitrogen in the pea crop is stored shortly after flowering. Allowing an extra month of growth (June 6 to July 6) only increased total vine-contributed nitrogen back to the soil by 25 pounds per acre. Fall-planted and spring-planted peas produced nearly equivalent yields of organic matter. However, the fall-planted peas can be plowed down two weeks earlier. The spring-planted peas accumulated 70 pounds per acre more vine nitrogen than the winter-planted peas ("Austrian Winter Peas," 1983). In other Idaho research, the green manure Austrian winter peas contributed 60-80 pounds per acre of nitrogen credits (Mahler and Auld, 1989).

Seed Yield

Varieties ranged in seed production from 340-830 pounds per acre (Offutt, 1955).

Varieties

Melrose produced the highest organic matter yield and accumulated the most nitrogen of the five varieties (Melrose, Fenn, Romack, Common, ID 89-1) in Idaho research ("Austrian Winter Peas," 1983).

Crop Rotation Management

Austrian winter peas fit well into a rotation from wheat to grain sorghum. To be effective, a green manure crop such as Austrian winter peas should be included in a crop rotation every 3-5 years ("Austrian

Winter Peas," 1983). In addition to the nitrogen benefit, the peas in a rotation may reduce the severity of soil borne diseases that attack winter wheat and spring barley (Mahler and Auld, 1989).

Grazing Management

Cows and calves graze peas in April through the first half of May on the farm of Jim and Lisa French in Reno County. The Frenchs find that integrating livestock grazing into their wheat/pea/grain sorghum rotation is important to overall profitability. The high forage quality of the peas stimulates cow lactation, reduces winter hay feeding, and provides a nice transition into the native grass season. Fall born calves may be weaned following the pea pasture. The Frenchs have had no problems with bloat. The peas are grazed to the ground before spring tillage (French).

REFERENCES

"Cover Crop Guide." 1988. Rodale Research Center.

Observations of Jim and Lisa French who farm in Reno County.

Delang Seed Company. Girard, KS.

"Austrian Winter Peas." 1983. University of Idaho Cooperative Extension Service.

Offutt, M. S. 1955-1958. "Lupin, Vetch, and Winter Pea Variety Yield Trials in Arkansas." University of Arkansas.

Mahler and Auld. 1989. "Evaluation of the Green Manure Potential of Austrian Winter Peas in Northern Idaho." Agronomy Journal.

Heer, Bill. 1996. "Effects of Termination Date of Austrian Winter Peas Winter Cover Crop and Nitrogen Rates on Grain Sorghum." KSU South Central Experiment Field. Hutchinson, Kansas.

CREDITS

The author of this publication is Jerry Jost with the Kansas Rural Center.

Funding for this management guide came from USDA's Environmental Quality Incentives Program. Additional funding is from the Clean Water Farms Project, a project of the Kansas Rural Center in cooperation with the Kansas Department of Health and Environment (KDHE), and funded by the U.S. Environmental Protection Agency (EPA) Section 319 Non-Point Source Funds.

The Kansas Rural Center is a private, non-profit organization that promotes the long term health of the land and its people through education, research and advocacy. The Rural Center cultivates grassroots support for public policies that encourage family farming and stewardship of soil and water. The Rural Center is committed to economically viable, environmentally sound, and socially sustainable rural culture. For more information, contact the Kansas Rural Center at PO Box 133, Whiting, Kansas 66552 or (785) 873-3431.