Optimizing forage and pasture resources with annual crops
Rhonda Gildersleeve, Ph.D., Extension Grazing Specialist, University of Wisconsin Extension, UW-Lancaster Agricultural Research Station, Lancaster, WI

Introduction
Cover crops are plants seeded into agricultural fields, either within or outside of the regular growing season, with the primary purpose of improving or maintaining ecosystem quality (Midwest Cover Crops Council website definition). Recognition of the many benefits and on-farm use of cover crops is increasing across the Upper Midwest. A number of cover crops, particularly small grains, annual grasses, legumes and brassicas can also provide significant forage value in an integrated crop/livestock production system when utilized as annual pasture and/or harvested forage resources for livestock production.

Increased management flexibility in terms of providing sufficient availability and quality of pasture across the grazing season and opportunities to supplement traditional winter forage resources are major benefits for beef producers. These goals are compatible with addressing nutrient cycling, soil- and water quality improvement, and other cover crop goals typically recognized for crop production systems. While perennial pastures and forages continue to be a cornerstone of efficient and profitable beef production in the Driftless Region, annual forage crops are becoming more widely utilized to strategically address some of the seasonal production challenges found in temperate perennial pasture systems.

Early spring forage production
For beef producers, the last few weeks before spring turnout onto perennial pastures often means juggling the need to stretch remaining winter feed supplies with increased seasonal demand from their herd for abundant and high quality forages. Unpredictable spring weather conditions often add problems: too dry and/or too cold results in slowed early spring pasture growth; during overly wet early spring conditions, cattle may need to be moved off of wintering areas, but can also damage the pasture sod if grazing is initiated before soils are firm and plant growth is sufficient to provide adequate forage. On many farms, pasture renovation activities are often planned for spring and early summer, and annual forages can also serve as an alternative pasture resource while some permanent pasture acres are renovated.

Summer slump
In mid- to late summer, periods of hot and/or dry weather conditions slow perennial pasture growth. Research has shown that overgrazing during this time can severely impact future pasture growth even into the next growing season. Concurrently, nursing calves and beef cattle in both stocker and pasture finishing phases often see stalled gains due not only to hot weather conditions, but from decreased pasture quality and production. Grain supplementation on pasture is a traditional recommendation, but grazing use of summer annuals can also fill the need for maintaining high forage quality and production from pasture during this seasonal challenge. Warm season summer annuals such as sorghum, sudangrass and their hybrids may also provide significant harvested forage to supplement winter feed supplies.

Extending fall pasture season
Planting annual forages for fall use enables beef producers to initiate an extended fall rest and/or stockpile some of their perennial pastures for late grazing season use. The fall season also offers some excellent opportunities to use high quality annual pastures as part of the weaning and preconditioning process for beef calves, and add gains or finish to older pasture-raised cattle. Depending on succeeding crop production use within fields and need for early spring forage, fall annual forage choices include those species that are consumed during fall grazing events before they winterkill, or winter hardy species that are lightly grazed in the fall, then utilized again the following spring.

Other considerations
In addition to farm decisions related to production costs, herd nutrition, and seasonal pasture needs, beef producers must also consider several practical issues with annual forages. Infrastructure needs on croplands for fencing and water, availability of owned or leased land, access to appropriate planting equipment, and other issues may also need to be addressed when grazing annual forages.
References

A few selected resources listed below. Please contact your local Extension, Department of Agriculture, and USDA Natural Resource Conservation offices for additional resources on using cover crops and annual forages in beef production systems.

Midwest Cover Crops Council website: http://www.mccc.msu.edu/index.htm

USDA ARS Northern Great Plains Research Lab (Mandan, ND) Cover Crops Chart: http://www.ars.usda.gov/Main/docs.htm?docid=20323

Sustainable Agriculture Research & Education (SARE) Cover Crops Topic Room: http://www.sare.org/Learning-Center/Topic-Rooms/Cover-Crops