Midwest Forage Research Program

2017

Research Priorities

Forage Production

• Produce sustainable high yields of quality alfalfa while maintaining persistence:
  • Determine actual on-farm alfalfa forage yields under contrasting management.
  • Determine optimum soil fertility levels and practices (e.g., P, K, S, micronutrients, foliar applications, manure applications).
  • Evaluate seeding practices and their impact on yield and profitability (seeding rate, plant density, stem density).
  • Evaluate variety selection and cutting management on alfalfa winter survival.
  • Impact of harvest management: cutting frequency, schedule with GDD or other means, fall harvest timing, etc.
  • Management of disease and insect pests and their impact on yield, quality, and profitability.
  • Develop trait specific varieties that overcome yield-robbing environmental conditions such as salinity and drought.
  • Evaluate alfalfa-grass mixtures (management, species, winter survival, harvest).
  • Predict and measure nitrogen credits and environmental benefits of alfalfa in cropping systems.
  • Evaluate weed control in conventional and glyphosate-tolerant alfalfa.
  • Reduce the impact of field traffic on alfalfa productivity.
  • Evaluation of cutting management strategies for reduced lignin alfalfa varieties and the subsequent effect on yield and forage quality.
• Evaluate methods that speed hay drying and improve preservation (e.g., swath manipulation, hay preservatives).
• Improve management options for forage grass species in livestock-cropping systems.
• Evaluate annual forages (e.g., oat, barley, triticale, sorghum, sudangrass, Italian ryegrass, late-seeded corn, and others) in livestock-cropping systems.

Forage Storage, Quality, and Feeding

• Explore the process by which we determine optimum packing densities of piles/bunkers from a safe distance.
• Evaluate the role and performance of lower lignin alfalfa in livestock feeding systems.
• Improve alfalfa protein utilization.
• Evaluate and compare economics of feeding methods (e.g., chopping, baling, balage, haylage, silage, shredlage).
• Evaluate the role of grass in dairy diets.
• Evaluate the performance of different corn silage/alfalfa feeding ratios.
• Determine optimum packing densities of piles/bunkers with drier haylage moisture levels.
• Evaluate different silage storage alternatives for shrink issues and management challenges (e.g., bags, bunkers, piles or comparable structures).
• Evaluate inoculants and preservatives for high moisture forages.
• Baleage management (e.g., moisture and types of wrap).
• Improve and standardize forage quality testing methods.
Corn Silage

• Evaluate corn silage planting alternatives (narrow/twin rows, plant population, hybrids, BMR corn).
• Evaluate soil nutrient needs for optimum corn silage production (e.g., N, P, K, S, micronutrient needs).
• Determine best management practices for silage harvesting (e.g., timing, height, moisture, etc.).
• Evaluate the advantages and performance of cover crops after corn silage and corn silage after cover crops.
• Evaluate the effects of continuous corn silage on soil compaction and health and develop approaches to overcome adverse effects.
• Evaluate kernel processing.

Grazing

• Determine how to extend the grazing season in rotationally grazed pastures (e.g., with double cropping systems, cover crop mixes, etc.).
• Evaluate pasture yield response to macro- and micro-nutrients.
• Develop tools for graziers to use enterprise analysis as a decision-making tool, allowing them to compare and evaluate the economic benefits of competing enterprises on land.
• Identify ideal species for different soil types (e.g., investigate adaptation of meadow fescue).
• Evaluate mob and other high density grazing systems for economic and environmental outcomes.
• Determine how late-fall grazing affects persistence and yield of different species.
• Survey grazing management practices (e.g., fertility practices, stocking rate, fencing, etc.).
• Improve pasture productivity during drought years.

Last updated: January 2017