Grasses in the Northeast

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Much of the cropland in the Northeast is better suited to perennial grass production than to legumes or row crop production. In the Northeast, grass species selection is strongly influenced by soil conditions. The less than ideal soil conditions in much of the region result in many alfalfa seedings being sown with a companion perennial grass, including over 80% of alfalfa seedings in New York State. Selecting forage species that are best suited to a particular soil type and forage use provides the most efficient land use. In NY and PA, forage species are recommended using a web-based program based on potential yield, intended forage use, and soil type (www.forages.org or http://www.forages.psu.edu/selection_tool/index.html). The number of perennial grass cultivars has increased dramatically in the past few years. Yield and persistence of cultivars have improved, and it is likely that palatability also has improved with selection. "Hi-Mag" tall fescue is one example of selection for altered chemical composition. In general, however, there has been very little documented improvement in chemical composition, in particular digestibility or fiber digestibility. A method for comparing forage quality of grass cultivars that differ significantly in maturity will be needed in the future to evaluate quality improvements anticipated from genomics advances.

Millions of acres of marginal lands in the Northeast US are currently idle, and are available for grass bioenergy production in the region, particularly if this biomass could be used locally. The current Federal mandate for bioenergy production, however, demands the production of liquid biofuels in centralized conversion facilities, not a very practical system in the Northeast for several reasons, including biomass transportation logistics. New England, including New York, represents approximately 80% of the nation's heating oil consumption. A bioenergy source that would directly replace liquid fossil fuel use in the region would free up liquid fossil fuels for transportation uses. The Northeast has available land, abundant water resources, and an existing production system familiar to producers. Numerous attempts have been made in NY, PA and VT to densify (pellet, briquette, cube, etc.) grass and burn the densified grass in stoves and boilers. Combustion emissions from grass pellet biofuel are currently being evaluated at multiple sites in New York State, funded by the New York State Energy Research and Development Authority.

Perennial grass has always been a key forage crop in the Northeast, and is equal or greater in importance than alfalfa for dairy cattle in much of the region. Dairy feeding trials have shown that grass can produce as much milk per cow as alfalfa, when rations are properly balanced. Intensive grass management for lactating dairy cattle forage has increased in the region, but the average level of management is still not nearly as high as with alfalfa. The proliferation of new grass cultivars offers the possibility of increased yield and persistence, and genomics advances offer the hope of significant improvements in forage quality.