

Pasture Blends for New Plantings in Massachusetts

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Many farmers contact UMass Extension and USDA-NRCS seeking information and recommendations on pasture species and varieties suited to Massachusetts soil and weather conditions. This topic was mentioned often by farmers at meetings and The Northeast Pasture Consortium also reaffirmed this in 2006 as a research priority.

Our hypotheses are (i) that improved information on forage species and varieties will have economic benefit to farmers, and (ii) that use of this information can be integrated into farm practices through participatory research with farmers, complementing outreach and education. Twenty eight pasture blends and mixtures obtained from commercial companies were seeded at the UMass Crop and Animal

Research and Education Center (CAREC) in South Deerfield, MA in late August 2007 in 4 replicated blocks. Seed mixtures varied from 2 to 7 species, sometimes with more than one variety within a species. Pastures were rotationally grazed with beef cattle. Four of the blends were also planted at commercial farms on a variety of soils. The blends contained species which are commonly found and planted in Massachusetts pastures. Table 1 lists the species included in the experiment.

Table 1. Species planted in various combinations at the CAREC in August 2007.

| Grasses | Legumes |
|--------------------|-------------------|
| Orchardgrass | White Clover |
| Perennial Ryegrass | Red Clover |
| Tall Fescue | Alfalfa |
| Meadow Fescue | Birdsfoot Trefoil |
| Kentucky Bluegrass | |
| Bromegrass | |
| Timothy | |
| Festolium | |
| Annual Ryegrass | |

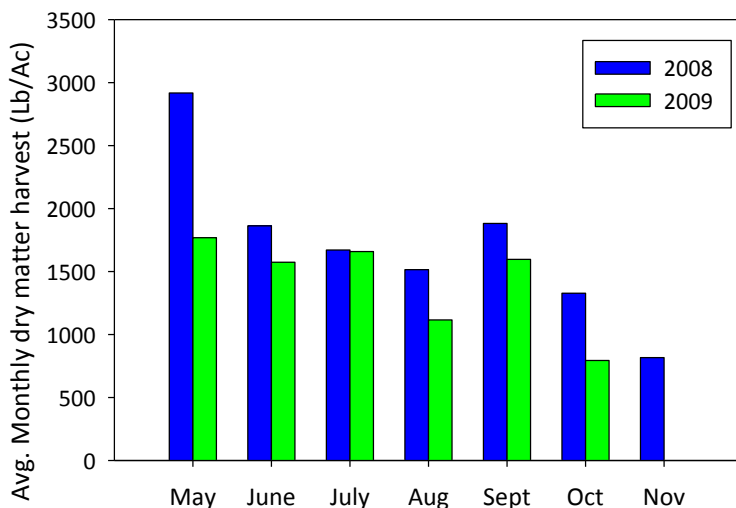


Figure 1. Monthly forage yields in 2008-2009 (averaged over all 28 blends)

Results of analysis of forage yields at CAREC for the first two years of the project, 2008 and 2009 follow. In the early life of a pasture, yield would be expected to increase from the first to the second year of grazing. However, this was not the case in the CAREC plots. The summer of 2009 was unusually wet and cold. Many crops, including corn (grain and silage), as well as vegetables, did not yield well in 2009.

Forage yield was estimated by clipping measured squares in the plots once a month directly before the cattle were grazed. In 2008 six cattle were grazed one day a month from May through November approximately 24 hours on

each of the four 70 ft x 100 ft plots. In 2009 nine cattle were grazed, generally for less than a full day. Animals were removed from the plots when forage height approached 4 inches. This intensive grazing system provides maximum recovery time for regrowth of the plants without animals trampling on the pasture.

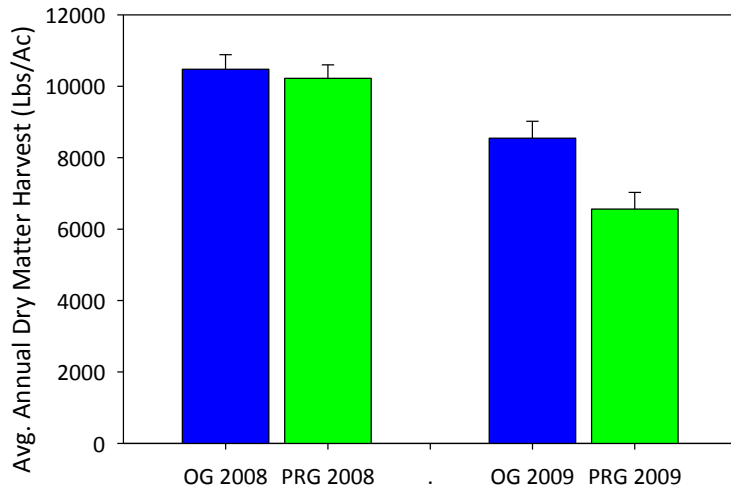


Figure 2. Yield comparison of blends including white clover with either Orchardgrass (OG) or Perennial Ryegrass (PRG).

After only 2 years' grazing, it is too early to make specific blend recommendations, but one observation made was that the 5 mixes of orchardgrass plus white clover (OG) outperformed the 5 mixes of perennial ryegrass plus white clover (PRG) in the cool, wet summer of 2009. Yield differences had been negligible in 2008 (Figure 2). The difference between vigor of orchardgrass and perennial ryegrass is just an example of weather related species vigor differences.

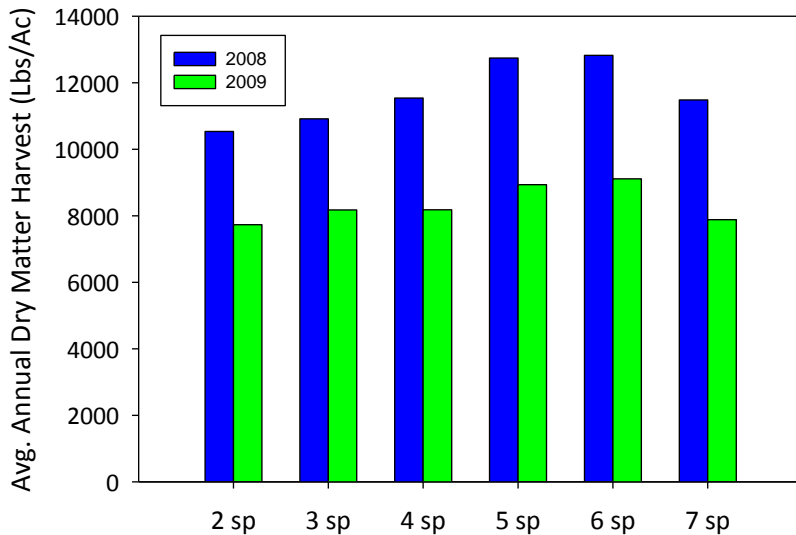


Figure 3. Average annual forage yield based on number of species in blend.

Because Massachusetts summers vary so greatly in temperature, rainfall, and light, there will not be one species that stands out in all years or all parts of a pasture growing season. Blends including several different species will likely perform better than those with fewer species. All blends used in this study contained at least one grass species and one legume. Figure 3 shows that in both 2008 and 2009, more species in the planting blend led to higher forage yield (exception being the one blend which contained 7 different species).

As the pasture matures, some species will likely outperform others in a measurable way. Contribution of individual species within each blend will be calculated. Reports will continue as the pasture matures.