

Forage Mixture Design for Dairy Farms

Use Grass Mixtures without legumes when the objective is to lower soil N. Add a legume to increase soil N.



▣ Maturity control for quality

Grasses should be harvested in the boot stage to ensure the highest level of forage quality. If dry matter yield is the primary goal, wait until seed heads are beginning to emerge

Choosing Species

▣ **White Clover** - Low growing, drought tolerant and rhizomatous. White clover adds forage quality to a mix as well as adding Nitrogen to the soil.

▣ **Festulolium** - Festuloliums are a new and exciting species that show a lot of promise. There are two main types, tall fescue types or ryegrass types. Choose ryegrass types for high quality and palatability or choose the fescue types for high dry matter yield.

▣ **Orchardgrass** - Good forage quality and high yield are characteristics of this species. Fast regrowth is another benefit.

▣ **Italian Ryegrass** - An upright high yielding plant that needs vernalization before going to seed, much the same as winter wheat. In a practical sense an Italian ryegrass lives for two years. The first year of growth will be extremely high quality if sown in the spring.

▣ **Perennial Ryegrass** - Quick germination for erosion control, weed suppression and high yield in the first year of growth.

▣ Rapid Establishment

Ryegrasses or cereal grains establish quickly and give high yield in the establishment year. If desired, slow establishing species can be seeded at the same time.

▣ Accessibility to the field

During the Spring, it is difficult or impossible to enter fields due to wet conditions. Using a forage that matures before you can get on the field causes a loss of forage quality which means less milk in the tank.

▣ Weed Control

In a pure grass stand, selective broad leaf weed control can be applied. If legumes are desired in the stand, it is possible to sow only the grasses the first year and get the weeds under control and then broadcast legume seed in the fall or early spring after weed control has been achieved.

▣ Nitrogen Fixation

Adding clover to the mixture will allow a cheaper and more sustainable source of Nitrogen. However, in situations where the forage is being used to remove N from the soil, no legumes should be included in the forage stand.

Mixture Design

Mixtures should be composed according to importance of individual goals. As a general guideline, we recommend to:

- ▣ Include a fast establishing species to give quick ground cover.
- ▣ Choose main species according to harvest method and timing.
- ▣ Add White or Red Clover whenever possible to support the grass and cut down on fertilizer use.
- ▣ Be sure to synchronize the maturities of all component of the mixture.

Examples

Grazing Mix:
 40% Calibra Perennial Ryegrass
 20% Zorro Italian Ryegrass
 30% Kemal Festulolium
 10% White Clover

Silage or Green Chop Mix
 30% Hykor Festulolium
 20% Zorro Italian Ryegrass
 30% Polly Intermediate Ryegrass
 20% Sparta Orchardgrass