



## *Pennleaf Hybrid Pearl Millet*

### **Introduction**

Hybrid pearl millet provides forage just like conventional sorghum/sudans that is of equal or better quality and more leafy. Seed size is much smaller (80,000-90,000 seed/lb.) than sorghum/sudan thus seeding rates must decrease. Relative to sorghum/sudans (60-65 F) warm soils are critical for success for hybrid pearl millet (65-70 F). Yields are somewhat lower than sorghum/sudans but this leafy forage tends to have higher quality. Hybrid pearl millet is drought tolerant, can be grazed by horses, and does not develop prussic acid problems (a good forage choice for fall grazing when frosts come). This material may be grazed sooner than sorghum/sudan. It should be harvested in boot stage for maximum total digestible nutrients per acre, or in pre-boot if higher quality is desired. Regrowth potential is somewhat less than sorghum/sudan so if haying leave 4 – 6 inches (10 – 15 cm) of stubble, or if grazing do not allow livestock to trample the stalks.

### **Seedbed Preparation**

A firm, well-prepared seedbed is needed for good seed-soil contact.

### **Seeding Dates**

Soil temperatures should be at least 65°F (18°C), preferably warmer, and nighttime temperatures above 50°F (10°C), before Pennleaf Hybrid Pearl Millet is planted. Stagger planting dates 10 days to 2 weeks to spread out production for a realistic feeding and cutting schedule. It takes at least four to six weeks after planting before usable forage is available.

### **Planting**

Pennleaf Hybrid Pearl Millet can potentially be planted as a double crop after winter wheat or winter canola. Seeding rate is recommended at 12-15 pounds per acre (12-15 kg/ha) drilled, 25-30 lbs (25-30 kg/ha) broadcast. An exact seeding rate is not critical, because Pennleaf Hybrid Pearl Millet can partially compensate for a poor stand by increasing the number of tillers. Seeding depth should be 0.25 and 0.5 inch (0.5 to 1.25 cm). No-till seeding is feasible, although the shallower seeding depth compared to corn or soybeans can make proper control of planter depth (through surface residue) more challenging. Narrow rows have usually given a yield improvement over wide rows, with yields optimized at 15 inch (38 cm) spacings.

### **Fertilization**

Pennleaf Hybrid Pearl Millet does not have a high nutrient demand. About 50 pounds of nitrogen fertilizer per acre (50 kg/ha) should be applied on most soils. Since nitrogen needs are modest, fertilizer nitrogen can be applied sidedress rather than preplant if appropriate. Phosphorous and potassium needs of pearl millet have not been well studied; the rule of thumb is to use rates recommended by a soil test lab for sorghum. Pennleaf Hybrid Pearl Millet will tolerate low soil pH but will respond to lime application.

## Harvesting and Use

Pennleaf Hybrid Pearl Millet is slightly better for grazing and hay than green chop, but will work fine in a green chop program. Pennleaf Hybrid Pearl Millet will **not** produce prussic acid, but is capable of nitrate toxicity after periods of plant stress such as drought. Allow a period of four to six weeks of growth or height of 24 to 30 inches (61 to 76 cm) before 1<sup>st</sup> cutting to a 4 to 6 inch (10 to 15 cm) stubble. Allow at least 18 inches (46 cm) of regrowth before next cutting. This will put the cutting height at 24 to 30 inches again.

Resting between cuttings or grazing will allow the forage to quickly regrow and recover. In good fertile soil with adequate moisture and temperatures this should occur in about 20 to 30 days. A good rotation will keep the forage at the highest quality.

### Product Quality

Crude Protein (CP) 10 – 14%

Laboratories measure the nitrogen (N) content of the forage and calculate crude protein using the formula:  $CP = \% N \times 6.25$ . Crude protein will include both true protein and non-protein nitrogen. Cattle can use both types to some varying degree. Crude protein values give no indication if heat damage has occurred, which may alter protein availability

Acid Detergent Fiber (ADF) 35 – 40%

This value refers to the cell wall portions of the forage that are made up of cellulose and lignin. These values are important because they relate to the ability of an animal to digest the forage. As ADF increases, digestibility of a forage usually decreases

Neutral Detergent Fiber (NDF) 55 - 70%

The NDF value is the total cell wall, which is comprised of the ADF fraction plus hemicellulose. Neutral detergent fiber values are important in ration formulation because they reflect the amount of forage the animal can consume. As NDF percentages increase, dry matter intake will generally decrease. Many laboratories analyze for ADF but may not include NDF values.

Total Digestible Nutrients (TDN) 50 – 60%

As the percent ADF increases, TDN will decrease.