

CANADIAN FORAGE PEARL MILLET (CFPM) 101

Pearl millet (*Pennisetum glaucum*) is a tall, tropical cereal that originated in West Africa. In Africa and the Indian subcontinent, it is used as a staple food crop. In the USA and Canada, it is used as a forage crop. Pearl millet will grow to 10 to 14 feet tall during conditions of high temperatures and favorable moisture. Improved varieties such as CFPM 101 are very well suited for multiple cuts. A good stand of CFPM 101 will produce plants with relatively fine stems and profuse leafy growth. Pearl millet has a significantly higher leaf to stem ratio than other forages that results in good forage quality. The plant tends to tiller profusely under favorable climatic conditions and it compensates for uneven stand establishment. Pearl millet, like most crops, thrives best on rich soils, but it tolerates poor, infertile, low pH soils better than most other crops. It can be used for grazing, as a green chop and for silage.

CFPM 101 achieves excellent control of root lesion nematodes (RLN) in potato and tobacco.

CFPM 101 reduces RLN populations in the soil and roots in potato after one-year rotation. Research has shown that total seed and commercial potato yields are greater following CFPM 101 than following rye (non-fumigated) rotation and similar to rye + fumigation. CFPM 101 rotation yielded more premium and marketable quality tubers, and showed a 10% reduction in non-marketable tubers. In addition, it yields high quality forage and adds organic matter to the soil.

Why forage pearl millet?

- A highly drought tolerant crop
- Recommended for sandy loam soils which are low in fertility and pH
- Grazing, green chop, silage for dairy, beef, sheep and horses
- Rapid regeneration capacity
- No prussic acid
- Helps build soil organic matter when used as a cover crop
- Significant levels of nutrients are added to soil improving fertility and soil structure
- Used in rotation, provides good control of root lesion nematodes in potato, tobacco and vegetable crops

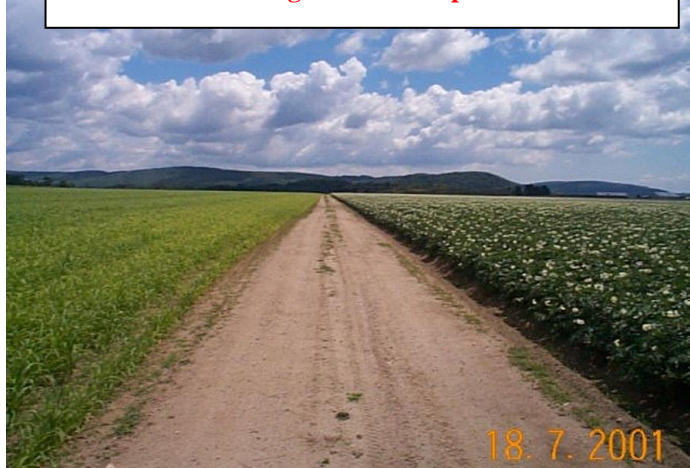


Tobacco following forage millet
CFPM 101

Tobacco following Rye +
fumigation



CFPM 101 Forage Millet with potato rotation



Biomass nutrient content in Forage pearl millet CFPM 101 and Rye¹

Crop	Dry matter Yield (t/acre)	N	P	K	Nutrients \$/acre
		(Kg/acre)			
Forage pearl millet CFPM 101	3.5	44.5	13.3	63.0	74
Cereal Rye	2.0	28.0	4.5	32.0	39

1. Source: Agriculture Canada, Delhi, ON., Total fertilizer equivalent based on two cuts

AS A COVER CROP TO BUILD ORGANIC MATTER (Benefits)

Improves soil productivity	Organic matter from forage millet adds nutrients to the soil, improving fertility and soil structure that benefit the next crop.
Provides erosion control	CFPM 101 cover crop protects soil from wind erosion. Soils that have lost their organic matter are susceptible to wind erosion and will benefit the most from CFPM 101.
Captures snow	CFPM 101 cover crop captures snow over the winter in sandy soils to enhance moisture conditions in the spring.
Suppresses weeds	Forage pearl millet at a high density well suppresses weeds, decreasing the weed pressure in the subsequent crop.
Does not over-winter	CFPM 101 does not over-winter

CROP MANAGEMENT

Planting	Plant in a well-prepared seedbed in late spring, when soil temperatures are above 12°C (54°F) with no risk of frost. Use a cultipacker prior to planting to create a flat and even seedbed.
Seed rate, row spacing and planting depth	Using a grain drill, grass seeder or a no-till drill plant seed at a uniform ½” depth and use a seed rate of 4 kg per acre or 10 kg per hectare (1000 seed weight equals 9g or approximately 245000 seeds per kg or 111000 seeds per lbs). Seed in 7.5” rows with spacing of about 2-3” between plants in the row.
Seedbed packing	Press seed into the ground with a press wheel. Do not pack the ground with a heavy land packer after planting. CFPM 101 is not recommended for heavy clay soils.
Fertilizer	Fertilize according to soil fertility (roughly 50% of forage corn fertilizer)
Establishment	Millet normally emerges four to eight days after planting. It is important to work the land prior to planting to control early weeds. This mechanical weed control gives pearl millet the opportunity to grow faster than weeds. When the plant is 6” tall, it has 3-4 tillers established.
Weed control	Aggressiveness natures of forage pearl millet at high density suppress weeds.

HARVESTING AND STORAGE

Forage Harvesting	Pearl millet provides a wide range of alternative uses when utilized as annual forage. Pearl millet makes excellent forage for beef cattle, dairy cows, and sheep t may be cut for hay, silage, green-chop or pasture. Dry matter yields range from 6-10 tons per ha. The crop attains a height of 40-50 cm in about 50-60 days. Harvest around this stage to 15 to 20 cm stubble to allow optimum regrowth. Pearl millet is known as forage capable of producing high contents of crude protein.
Green chop	Pearl Millet can be used for green chop. As mentioned, pearl millet will not produce prussic acid, but is capable of nitrate toxicity after periods of plant stress such as drought (see below). Allow a period of four to six weeks of growth or height of 60 to 70 cm before first cutting to 10 to 15 cm stubble. Allow at least 40 cm of regrowth before next cutting. This will put the cutting height at 60 to 70 cm again. Remember to apply nitrogen fertilizer following each cut to allow robust and healthy regrowth.
Grazing	Allow cattle to graze until 15-20 cm stubble remains, then remove. Staggered planting dates for later grazed pastures may be desired to coincide with proper plant height and maturity for each pasture grazed in the rotation schedule. Use a stocking rate to maintain 20 to 30 cm stubble. Allow 18 inches of regrowth before re-grazing. Rotational grazing is recommended with pearl millet.
Hay	Pearl millet can provide excellent hay when properly cured. It can be cut for hay when it is 60 to 75 cm tall. Ensure that the weather forecast does not include rain events for 3-4 days soon after harvest. Dried hay can be bundled for later use. It has to be remembered that pearl millet is a robust plant and requires bright sunny days to dry properly.
Silage	Pearl millet can also be considered for silage production. It has to be harvested soon after ear head formations. Follow the local recommendations
Seeding new crop	Direct seed the new crop into the residues.