

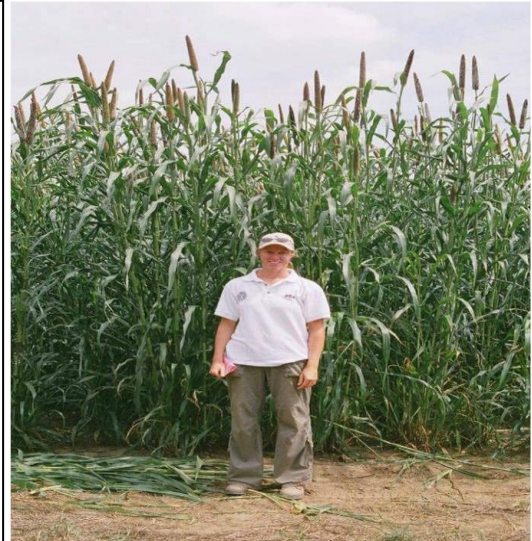
## Canadian Sweet Stem Pearl Millet Hybrid 7 (CSSPMH 7)

### Why sweet stem pearl millet hybrid?

- A highly drought tolerant and induced adaptability and stability in yield to temperate climate
- Performs well on soils low in fertility (sandy to loamy-sandy soils) and low pH (4.5)
- Needs low N fertilizer, has high Nitrogen use efficiency
- When used as a forage crop, high yielding, high protein crop for livestock, sheep and goat with complete absence of prussic acid
- When used in rotation, it provides excellent control of root lesion nematodes in potato, tobacco and other vegetable crops
- Harvested at milky grain stage, stems have sugary sap, hence highly palatable for livestock
- 10-12 tons of biomass per ha, with 15-18% brix and 3500 litres of ethanol

### Characteristics of CSSPMH 7

- Recommended for one time harvest to make silage or extraction of sweet sap (similar to sweet sorghum)
- Dry matter yield of 10- 12 tons/ha
- Very leafy and takes 65 to 75 days in southwestern Ontario and Quebec for grain to reach dough stage.
- With the Brix rate of 15-18%, sap contains 8-10% sucrose, 2-3% glucose and 2-3% fructose
- This hybrid is higher in forage quality and better for dairy, beef and milking goats.



AERC's Sweet Stem Pearl Millet will be released soon. It can be used as an alternative feedstock for ethanol (very similar to sweet sorghum), silage for livestock, in crop rotation to control root lesion nematodes in potato systems, and when ploughed-in and incorporated into soil improves organic matter.

Research on adaptability, stability in yield and other agronomic traits and its utilization of AERC's pearl millet products is conducted in collaboration with research branch of Agriculture and Agri-Food Canada (AAFC), provincial organizations OMAFRA, MAPAQ and other provinces, University of Guelph, Ontario, McGill University and University of Laval, Quebec. It has been also evaluated in other Atlantic provinces of Canada.

### Forage yield and quality and ethanol yield/ha of CSSPMH 7 over locations, Canada, 2005-2008\* and forage pearl millet CFPM 101\*

Hybrids	DM yield (t/ha)	Forage quality parameters (% of dry matter)							
		Sap Brix(%)	Ethanol Yield (l/ha)	CP (%)	NDF (%)	ADF (%)	IVDMD (%)	Ca	P
CSSPMH 7	11.5	16.5	3500	8.3	66.05	44.9	-	0.07	0.15
CFPM 101	10.9	7.7	-	16.1	57.4	30.6	86.3	0.59	0.41

\*Several Agriculture Canada Research Stations. NDF= Neutral Detergent Fiber, ADF= Acid Detergent Fiber, IVDMD = In Vitro Dry Matter Digestibility, Ca = Calcium, P=Phosphorous.

## CROP MANAGEMENT

<b>Planting</b>	Plant in a well-prepared seedbed in late spring, when soil temperatures are above 12 <sup>0</sup> C (54 <sup>0</sup> F) with no risk of frost. In light soils use a cultipacker prior to planting to create a flat and even seedbed.
<b>Seed rate and planting depth</b>	Plant seed at a uniform ½” depth and use a seed rate of 3.5 kg per acre.
<b>Row spacings</b>	Seed in 7.5” rows with spacing of about 3” between plants in the row.
<b>Planting equipment</b>	Use a grain drill, grass seeder, or a no-till drill.
<b>Seedbed packing</b>	Press seed into the ground with a press wheel. Do not pack the ground with a heavy land packer after planting. CSSPMH 7 is <u>not recommended for heavy clay soils</u> .
<b>No-till planting</b>	CSSPMH 7 can be seeded effectively with no-till drills or grain drills. Excessive residues will hinder the establishment. Using press wheels on the drill or a light cultipacker is recommended.
<b>Fertilizer</b>	Fertilize according to soil fertility. Apply nitrogen–N 50-60 lbs and all of P and K fertilizer at planting. After the first cut apply 50-60 lbs per acre of active N. The second N application is critical for re-growth and crude protein levels.
<b>Establishment</b>	Pearl millet normally emerges 4-8 days after planting. Early season growth is slow and it is important to have low weed pressure. The crop is considered established when it forms 3-4 tillers.
<b>Grass weed control</b>	As most weeds are hosts to root lesion nematodes excessive weed pressure can neutralize the nematode suppression benefits of forage millet. If grass weeds are heavy use Glyphosate (Roundup) prior to planting. Two pre-plant tillage operations are recommended, the first (late April and early May) is to stimulate germination of weeds, and the second is to control weed seedlings prior to planting.
<b>Broad- leaf weed control</b>	Use Peak 75 WG plus non-ionic surfactant plus Banvel-280, Basagran forte, 2-4D Amine and Pardner. <i><u>Before application of herbicides ensure that you read all labels and follow instructions.</u></i>
<b>Forage harvest</b>	Harvest with a regular forage harvester. It is ready for cutting in 65-70 days after planting.
<b>Silage</b>	Pearl millet makes high nutritional silage because of soluble sugar contents in stem and leaves.
<b>Harvest for sap</b>	Harvesting for sweet sap is very similar to sweet sorghum. The stems will develop sweet sap when the grains are at dough (early-milky to mid-milky) stage when grains are still green. The window for harvest is seven to ten days and is dependent on growth and development of the plant and environmental factors such as temperature. Test the brix of the sap in the 4-5 inter-nodes, counting from the base of the stem.