

Pearl millet (*Pennisetum glaucum*) has been used in the southeastern United States as a summer grazing and hay crop for over 60 years. Pearl millet was introduced by AERC Inc. into Canada in 1994 for use as a forage crop and control of root lesion nematodes. AERC Inc. has recently developed adapted and productive grain pearl millet hybrids for eastern Canada giving crop producers a suitable alternative feed grain to the traditional cereal grain crops. AERC Inc. conducts its research on hybrid development, agronomic recommendations and feed potential in collaboration with research branch, Agriculture Agri-Food Canada (AAFC), Ontario Ministry of Agriculture and Food OMAF), Universities of Ontario, Le ministère de l'Agriculture, des Pêcheries et de l'Alimentation of Québec (MAPAQ), Agricultural Universities of Quebec and other agricultural ministries of various provinces in Canada and their respective agricultural universities. The details of Canadian Grain Pearl Millet Hybrid (CGPMH) 90 are as follows:

Why Grain pearl millet?

- High grain yield (3 to 3.5 t/ha) under non-irrigated and drought conditions in acid (pH 5.5) soils
- High grain and protein (12-14%) quality, with feeding value similar to corn for poultry and swine
- Used in layer rations produces eggs enriched in n-3 fatty acids
- Negligible pre-harvest aflatoxin contamination
- In rotation, provides control of root lesion nematode
- Relatively low production costs compared to other traditional cereal crops in Canada
- Frost sensitive, no volunteer plants in the following season



CGPMH 90 at AERC Research Station, Ottawa, Ontario

Characteristics:

- Canadian Grain Pearl Millet Hybrid (CGPMH) 90 is early maturing (100 days), dwarf (100 cm) and yields 3 tons grain per hectare, with harvest moisture of 14%.
- CGPMH 90 tillers profusely and all tillers have synchronous maturity.
- This hybrid takes 100-105 days to mature and can be grown in the latitude of 43.8N-48.8N in all over Canada



Hybrid Seed Production of CGPMH 90 at AAFC, Delhi, Ontario

On-farm demonstrations have shown that pearl millet can produce yields of 2500 to 3100 lbs of grain per acre with good management. Pearl millet can replace corn or sorghum in poultry, cattle and swine rations without adversely affecting feed efficiency or weight gain.

Crop Management

Seedbed preparation	Prepare the soil and seedbed in a similar manner to that for corn. Control emerged weeds prior to planting by application of Roundup.
Soil pH	Optimum soil pH is 4.5 to 7.5
Planting date	Plant in mid-May to early-June for best yields in southwestern Ontario. Early plantings help avoid summer droughts. Do not begin early plantings until soil temperatures are between 18-20 ⁰ C.
Fertilizer	Use 70% of corn fertilizer recommendation based on soil test or apply 50 lbs N, 25 lbs P and 30 lbs K per acre at planting and side dress 50 lbs N 3-4 weeks after planting.
Seeding rates	Use precision planters capable of planting 2 to 5 pounds of seed/acre. Pearl millet tillers profusely and makes up for large within row gaps without loss of yield. Planter and plates that place seed 1 to 2 inches apart, such as air or vacuum planters are recommended.
Seeding depth	Plant seed ½ to ¾ inch deep. Firm the soil over seed with a press wheel. Soil crusting results in loss of plant stand.
Row spacing	Row spacing of 30'' or less are good for cultivation and production. Pearl millet in narrow rows will form a dense canopy and shades out most weeds.
Establishment	The crop normally emerges 4-8 days after planting. Early season growth is slow and it is important to have low weed pressure. When the seedling is about 6'' tall, has 4-5 tillers it is considered established.
Bird damage	Birds consume pearl millet grain and can cause severe yield losses in small fields or when harvest is delayed for an extended period after maturity. Grain is borne on open panicles unlike corn where the kernels are covered by husk hence timely harvest is critical to minimize bird damage.
Weed control	There are no registered herbicides for weed control in grain millet. If grass weed pressure is heavy use Roundup before planting. Cultivation is the best option for controlling most weeds. Seeding into a stale seedbed is another viable option. Prepare the soil 2-3 weeks ahead of planting, allow weeds to emerge and broadcast a burn-down herbicide Glyphosate. Plant pearl millet by no-tilling into the stale seed bed.
Harvest and handling	Harvest as early as possible after maturity. Harvesting can begin when grain moisture is 18% or less. Drying below 11-12% moisture is needed for storage. Pearl millet grains do not separate easily from the glumes on seed-head, so careful adjustments in the combine cylinder speed (900-1000 rpm) and concave spacing are necessary for efficient harvest. Use low wind speed of the fan to avoid carrying away of small seed with heavier chaff. Dry grain using wagons with fine-mesh floor screens and blowing warm air (38 ⁰ C) air through the grain.