



A Conservation Plant Released by the Natural Resources Conservation Service
Brooksville Plant Materials Center, Brooksville, Florida

‘Chapingo’ Mexican teosinte *Zea mexicana* (Schrad.) Kuntze



‘Chapingo’ Mexican teosinte *Zea mexicana* (Schrad.) Kuntze (synonym *Zea mays* L. ssp. *mexicana* (Schrad.) Iltis) was released in 1995 by the USDA, Natural Resources Conservation Service (NRCS), Brooksville Plant Materials Center in Brooksville, Florida.

Description

Mexican teosinte is closely related to and resembles maize or Indian corn; however, teosinte plants branch to produce several stems, whereas most modern corn varieties are single-stemmed. It is an annual grass that can grow 6- to 13-foot tall (rarely to 16-feet). The sword-like leaves are 23-48 inches long and 2-3¼ inches wide. Male and female flowers are borne in separate structures on the same plant. Male flowers, are held in a branched flower cluster (tassel) at the top of each stem. Female flowers are in elongated, unbranched spikes borne in the leaf axils along the upper portion of the stems. The flower spikes are surrounded by leafy structures, somewhat like those that enclose ears of corn. Each “ear” contains 3 to 8 triangular, tough, glossy seeds that are about ¼ inch long. They are arranged linearly end-to-end and when mature each seed splits away from the others on the spike.

Source

Seeds were collected in Chapingo, Mexico and introduced into the United States by the Texas Agricultural Experiment Station. Seeds were distributed to the Tall Timbers Research Station in Tallahassee, Florida in 1965. Lewis Yarlett, who was then the State Range Conservationist for the Soil Conservation Service (now NRCS), obtained a seed sample from Tall Timbers and provided it to the Brooksville PMC, where it was initially planted in 1971.

Conservation Uses

Chapingo Mexican teosinte provides a long-term food supply for several types of wildlife. Deer forage on the young growth and the hard-coated seeds persist on the ground providing birds with a late-season food supply. A vigorous stand of teosinte provides cover for both deer and turkeys. It can be used as a summer forage source for livestock and the stalks can be harvested and used for fodder and silage. It can also be used as a summer cover or green manure crop. Chapingo seeds shatter when ripe and will voluntarily reseed in areas where planted.

Area of Adaptation and Use

The Brooksville PMC established field plantings of Chapingo Mexican teosinte throughout Florida and found that it was well adapted for use in a majority of the state. It is probably best adapted to the climate of the southern US; however, if seed production is not desired, it can likely be grown in many other areas where field corn is produced.

Establishment and Management for Conservation Plantings

For best results, plant on fertile soils ranging from somewhat poorly drained to well-drained. Establishment will be reduced when sown on sites with poor, droughty soils during the dry season, or wet, heavy soils during the rainy season. The planting area should be plowed and thoroughly disked to remove weed competition. Seeds should be broadcast at a rate of 10-12 pounds per acre followed by shallow disking for seed coverage followed by rolling. Early growth of the seedlings tends to be somewhat slow, but once established, plants grow quickly and produce a large amount of biomass.



Figure 2. Male flowers in tassels (left) and female flowers are enclosed in a leaf-like sheath (right)

Ecological Considerations

Some seeds of Chapingo Mexican teosinte can withstand passage through the digestive tracts of mammals and birds. Seeds also exhibit dormancy and will remain viable for several years. These characteristics indicate that this release has the potential to become weedy and displace native vegetation in some areas if not properly managed. Plants of Chapingo Mexican teosinte can readily hybridize with maize. Few insect or disease problems were noted during PMC evaluations.

Seed and Plant Production

Chapingo requires a long growing season with high temperatures to produce seed. Row plantings result in higher per acre seed production and more robust plants, so broadcast seeding is not recommended for seed production fields. Seeds should be placed at a depth of 1-2 inches, using 8-10 pounds of seed per acre. Recommended spacing for maximum seed production is 24 sq. ft. per plant. A spacing of 12 sq. ft. per plant produced less than one half the amount of seed.

In Florida approximately 112 growing days are needed to permit tasseling and seed-set. Planting in April to June provides ample growing days; later planting dates produce smaller plants and less seed. For best productivity, fertilizer should be applied at planting and supplemented periodically, according to soil test.



Figure 3. Mature seeds of Chapingo Mexican teosinte vary in size, shape, and color

Availability

For conservation use: Seed of Chapingo Mexican teosinte was distributed to Florida seed growers.

For seed or plant increase: Breeder seed is being maintained at the Brooksville Plant Materials Center and is available for distribution to interested commercial producers. Seed may be obtained by contacting the Plant Materials Center.

Citation

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<http://Plant-Materials.nrcs.usda.gov/flpmc>

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