MUSK THISTLE

Cardus nutans

WHAT IS IT?

Musk Thistle (MT) is a biennial forb in the Aster family that was accidentally introduced from Eurasia. Its prolific seed production allows it to spread rapidly into a variety of habitats. Its tall stature and spiny leaves crowd out desirable plants and hinder access of animals. MT is now found in most U.S. states.

HOW TO IDENTIFY MUSK THISTLE

STEM AND LEAVES

MT forms a rosette of basal leaves its first year. Leaves are waxy with spiny margins and often have a white mid-rib and white edges. During its second year, it produces a flowering stalk up to 6-feet-tall. Leaves alternate up the stem, which also has spines on it .

FLOWERS

MT produces several flowering stalks that may reach 6 feet in height. Large purple flower heads (up to 3 inches across) form at the end of stalks and in leaf axils. They are surrounded by numerous triangular spine-tipped bracts, and are usually bent over as if nodding. Flowers are insect-pollinated but self-pollination also occurs. A healthy plant may produce 100 or more flowering heads.

FRUITS

Each MT flower produces up to 100 fruits that are aided in dispersal by attached pappus.

REPRODUCTION AND SPREAD

SEEDS	MT reproduces solely by seed. Each plant produces up to 100,000 seeds. These are dispersed short distances by gravity and wind, or further by humans and vehicles. Seeds remain viable in the soil for up to 14 years.
ROOTS	MT grows from a thick, fleshy taproot. It cannot spread from its roots.
LIFE CYCLE	Like most biennial plants, MT forms a rosette of basal leaves its first year and develops a deep taproot. The following year it sends up a tall flowering stalk and produces flowers. Seeds develop shortly after flowers emerge. After seeds mature and disperse, the parent plant dies.

HOW TO CONTROL IT

PREVENTION	MT reproduces only from seed, but produces A LOT of seed. It is critical to prevent seed production. Properly managed land will resist MT invasions.
MECHANICAL	MT can be hand-pulled, tilled under, or chopped out below the root crown. BUT, any buds or flowers on the plant will still produce seeds if left on the ground. All buds and flowers must be removed and safely disposed of. Mowing is not effective, as it stimulates regrowth.
CHEMICAL	Herbicide can be used to control MT if applied before flowering. Herbicides with Aminopyralid and Chlorsulfuron as active ingredients are particularly effective.
BIOLOGICAL	A seed eating weevil was introduced as a Biocontrol Agent on MT. Although it is quite effective in reducing seed production, it also attacks native thistle and is no longer recommended for release. Livestock avoid the unpalatable stem and leaves of MT, but will eat the flowers. When they do, they may pass viable seeds through their digestive tract and spread the plant further.
CULTURAL	Musk thistle is not tolerant of competition and needs light to germinate seeds. Cultural methods should aim to maintain or restore a competitive plant community. Fire is not recommended as a management tool.

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