



THURSTON COUNTY NOXIOUS WEED FACT SHEET

*Milk, Scotch, & Italian
thistles*

*Silybum marianum, onopordum acanthium,
carduus ssp.*



Description: Milk thistle is a sparsely branched thistle, growing up to 6 feet tall, with slightly cobwebby stems. The leaves have deep lobes, pointed tips and bases that clasp the stem. The upper surface of the leaves are shiny and dark green with conspicuous white marbling. Flower heads differ from other thistles by the leathery spine-tipped bracts. The plant produces purple flowers from late April to August.

Scotch thistle often grows 8 feet or more in height. It has branched stems, with vertical rows or prominent spiny ribbon-like leaf material or “wings” that extend to the base of the flower heads. Leaves, which are armed with sharp, yellow spines, can be up to 2 feet long and 1 foot wide. Upper and lower leaf surfaces are covered with a mat of cotton-like or woolly hairs which give the foliage a gray-green appearance. Scotch thistle flowers grow in intensely spiny, globe-shaped heads that occur in groups of 2 or 3 on branch tips. Flowers range from dark pink to lavender.



Italian thistle grows from erect stems to a height of six feet. Leaves are deeply cut forming two to five pairs of spiny lobes. Lower leaf surfaces are whitish with woolly hairs, upper surfaces are green and hairless. Stem leaves continue down the stem as spiny wings. Wings continue up to the flower heads. Numerous purple flowers form in clusters of 5 to 20 heads.

Impacts:

Milk thistle is a nitrate accumulator. Ingestion of milk thistle by grazing animals causes nitrate poisoning, which can be lethal to cattle and sheep. Thistles threaten native vegetation by its aggressive formation of dense stands. Italian thistle threatens agriculture, livestock, wildlife, and native vegetation. Scotch thistle is a weed problem that produces significant economic losses to agriculture. Infestations of Scotch thistle reduce forage and virtually prohibit land uses for livestock. Dense stands of the large, spiny plants constitute a barrier to livestock movement, almost totally prohibiting animals from grazing and accessing water (Hooper et al. 1970; Sindel 1991).

Control Options:

Thurston County’s Integrated Pest Management emphasizes cultural, biological, and manual control methods to keep pests and vegetation problems low enough to prevent damage. The goal of Thurston County’s pesticide use policy is to minimize the use of pesticides by utilizing and providing information about the most effective control options that are available and practical.

► Manual Techniques

Evaluations of thistle infestation sites over three seasons in the 1990’s demonstrated a 45 percent effective control rate from the use of manual control options.

► Chemical Techniques

There are two types of herbicides that can be used to control thistle; selective and non-selective. Selective herbicides kill or inhibit growth of certain types of plants (like broad leaf plants) and do not kill other types (like grasses). Non-selective chemicals kill nearly all types of plants. **Glyphosate** is a non-selective active ingredient found in a number of products (like RoundUp Pro™, with 41% glyphosate) that are effective in controlling thistle. Glyphosate works well because it is a systemic herbicide that is taken in through the stems and leaves and distributed to kill all parts of the plant.

Glyphosate products can be used to treat individual plants or small patches, either by spot foliar application, or by stem injection (instructions from supplemental labeling in table below). Glyphosate will not prevent future thistle seed germination or prevent the growth of more desirable species. Products with an initial glyphosate concentration of 40% or greater should be used to mix to a 2% product spray solution (this excludes pre-mixed/ready-to-use products).

Another effective active ingredient for thistle is **aminopyralid**. It is a selective herbicide for control of broadleaf weeds and is especially effective at targeting plants in the thistle (*asteraceae*) family. It can, however, cause significant damage to other broadleaf plants, including desirable forbs such as clover. Aminopyralid products are currently only sold in agricultural herbicides (like Milestone™). Agricultural herbicides are available in farm supply stores, and are only to be used on areas listed on the label. One quart of Milestone™ can control 18 acres of thistle.

Herbicide & Method	Product Rates	Mix
RoundUp Pro® Spot/Foliar	2%	To 1 gallon of water add 2.66 oz. RoundUp Pro®, apply to foliage at or beyond bud stage.
Milestone® Spot/Foliar	1 tsp per 1000 ft ²	To treat a 1,000 sq. ft. area: Using a 2 to 4 gallon backpack or tank sprayer, add half of the water needed to cover all plants with one teaspoon Milestone®, agitate, then add water to reach desired amount (0.5 - 2.5 gallons total volume, depending on quantity and size of plants). Lightly spray all thistle plants in 1,000 sq. ft. area, then continue lightly spraying the thistle until the tank is empty and all plants have been thoroughly covered. The addition of a non-ionic surfactant (at least 80% active ingredient) is recommended to enhance herbicide activity.

Timing

Glyphosate products: Apply anytime thistles are actively growing, but prior to seed production. Fall treatments must be applied before a killing frost.

Aminopyralid products: Apply in the spring to plants in the prebud to early bud growth stage—the goal is to ensure all plants have emerged. Applications are also effective in the fall before a killing frost.

Foliar applications of aminopyralid (Milestone®):

- Please read the Milestone® label for precautions. Follow all label precautions and safety measures. Always use personal protective equipment that includes long sleeve shirt and long pants, shoes plus socks.
- As a spot treatment only at a rate of 4 to 6 ounces (pastures section) fluid ounces per acre. Do not apply more than 7 fluid ounces per acre per year.
- Do not enter into treated areas during the restricted entry interval of 12 hours. Keep people and pets off treated areas until spray solution has dried.
- Milestone should not be applied on residential or commercial lawns or ornamental plantings. Do not use plant material or hay from treated areas for mulch. Likewise, do not use manure from animals that have grazed or eaten hay from treated areas within the previous 3 days.



READ AND FOLLOW ALL LABEL DIRECTIONS AND RESTRICTIONS. Use of brand names does not imply endorsement and is for reference only; other formulations of the same herbicides may be available under other names. Information provided is current as of the date of the fact sheet. Pesticide product registration is renewed annually and product names and formulations may vary from year to year.



Thurston County Noxious Weed Program
 9605 Tilley Road S
 Olympia WA 98512
 Phone: 360-786-5576
 T.D.D. 360-754-2933
tcweeds@co.thurston.wa.us