



JEFFERSON COUNTY NOXIOUS WEED CONTROL BOARD

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BEST MANAGEMENT PRACTICES Tansy Ragwort (*Senecio jacobaea*) (Family—Asteraceae—Sunflower Family)

Legal Status in Jefferson County: Class B Noxious Weed (non-native species selected for control by the Jefferson County Noxious Weed Control Board, under State Law RCW 17.10). The Jefferson County Noxious Weed Control Board requires control of tansy ragwort on private and public lands throughout the county. State Weed Law defines control as *to prevent all seed production and to prevent the dispersal of all propagative parts capable of forming new plants.* (See WAC 16-750-003).



BACKGROUND INFORMATION

Impacts and History

- Serious threat to livestock. Contains pyrrolizidine alkaloids that are converted to toxic pyrroles in the liver after ingestion. The damage to the liver is irreversible and cumulative. Continued significant ingestion will usually kill the affected animal.
- All parts of the plant are toxic and the plant can be ingested while the animal forages for grasses and other desirable plants growing close by.
- Dried plants maintain their toxicity but not the bitter taste, and when mixed with hay or other silage it is not possible for the animal to detect or avoid tansy ragwort.
- Cattle and horses are most vulnerable to poisoning but deer, pigs and goats are also at risk.
- Reduces overall pasture productivity and stocking levels in livestock areas.
- First reported in North America in 1913 in British Columbia, reported in Portland, Oregon in 1922 and by the 1950s, had become a serious economic problem west of the Cascades



Tansy ragwort seedling (rosette)

Description

- Tap-rooted biennial or short-lived perennial with 2 to 6 foot tall erect stems, branched near the top, with dense clusters of bright yellow daisy-like flower heads.
 - Each flower head has 10 to 15 ray flowers (petal-like flowers) surrounding yellow disk flowers and the flower clusters grow near the top of the stem.
 - First year plants are dense rosettes with dark green ruffled or lobed leaves on purplish stems.

Habitat

- Typically found in full sun or partial shade in pastures, on roadsides and horse trails, in forest clear-cuts and on vacant lands.
- More common in disturbed habitats and overgrazed or poorly managed pastures.
- Also common on cleared forestlands, adjacent roadsides and fields, and in unmaintained areas in new developments.

Reproduction and Spread

- Reproduces by seed, usually in the plant's second year. Plants that go to seed die at the end of the season.
- Plants can flower from June to October but typically start to form seeds by mid August.
- Seeds are borne a short distance by wind and longer distances by animals, in hay and on equipment and vehicles. Large plants may produce as many as 150,000 seeds.
- Seeds can be viable for as long as 15 years. Seeds in the upper 2 cm of soil generally are viable for 4 to 5 years. Below 2 cm, the seeds remain dormant longer. Tilling, grazing or other disturbance will cause these dormant seeds to germinate.

Local Distribution

Tansy ragwort is common on roadsides and pastures throughout Jefferson County.

CONTROL INFORMATION

Integrated Pest Management

- The preferred approach for weed control is Integrated Pest Management (IPM). IPM involves selecting from a range of possible control methods to match the management requirements of each specific site. The goal is to maximize effective control and to minimize negative environmental, economic and social impacts.
- Use a multifaceted and adaptive approach. Select control methods which reflect the available time, funding, and labor of the participants, the land use goals, and the values of the community and landowners. Management will require dedication over a number of years, and should allow for flexibility in method as appropriate.

Planning Considerations

- Survey area for weeds, set priorities and select best control method(s) for the site conditions and regulatory compliance issues—be aware that tansy ragwort control is required throughout Jefferson County.
- Small infestations can be effectively hand-pulled or dug up. Isolated plants should be carefully removed in order to stop them from infesting a larger area.
- For larger infestations, the strategy will depend on the land use of the site. In pastures, good grazing practices and management of grass and forage species will greatly improve control of tansy ragwort.
- Generally work first in least infested areas, moving towards more heavily infested areas.
- Persistence is necessary. Plan to revisit the site to control plants that have survived initial control efforts.

- Control practices in critical areas should be selected to minimize soil disturbance and reduce the potential for erosion. Minimizing disturbance also avoids creating more opportunities for germination of weed seeds.
- If the control site requires extensive clearing or grading, or is located near a shoreline, steep slope, stream, or wetland, contact the Jefferson County Department of Community Development to find out whether or not a permit may be necessary.
- Because tansy ragwort is a state-listed noxious weed, control (both manual and chemical) in critical areas is allowed as long as the landowner consults with the Jefferson County Noxious Weed Control Board and follows their guidelines.

Early Detection and Prevention

- Tansy ragwort is easy to find once it flowers. Monitor pastures, areas used by livestock, horse trails and roadsides for new populations of tansy ragwort in June and July.
- Small infestations and individual plants can be effectively hand-pulled or dug. Uprooting one plant can prevent thousands of new seedlings.
- Prevent plant spread from existing populations by washing vehicles, boots and animals that have been in infested areas.
- Clean mowing equipment carefully before moving to un-infested areas.
- Off-road vehicles create disturbances and carry weeds. Avoid driving in infested areas.
- Healthy grass will resist invasion by weeds--promote healthy grassy areas by seeding and fertilizing. Use a mix of grass and clover species to improve resistance to tansy ragwort. Fertilize according to the soil needs.

Manual

- Pulling plants after they have “bolted” – grown a long stem – is usually easier than pulling them in the rosette stage. Typically this is from late May onwards. Because this is a toxic plant, gloves and protective clothing should be worn.
- Plants in flower, or even those with visible flower buds, can form viable seeds **even after they are pulled**. Flower or seed heads should be clipped and bagged and disposed of in the trash. If plants are seeding, it is very difficult to bag the seed heads without dispersing the seeds, so plants should be pulled before seeds mature.
- In areas where mature plants are pulled, there are usually many small rosettes and seeds left in the soil. Carefully search the area for rosettes and dig them up. Roots break off easily and re-sprout with new plants, so use a digging tool. Completely removing plants is easiest when the soil is loose or wet.
- Return to the same location in the following spring and summer to remove plants coming up from seeds already in the soil and continue to monitor the area for several years.

Mechanical

- Mowing will **not** control tansy ragwort effectively. Plants are able to re-sprout and flower again in the same season when mowed. Plants that are regularly mowed can persist as short-lived perennials and can flower below the level of the mower.
- Mowing may increase the amount of toxin ingested by the animals because grazing animals are often unable to avoid eating small tansy ragwort plants growing among pasture grasses.

Biological

- Biological control can take up to six years to have a significant impact on the infestation. Population density and the number of flowering plants can be reduced but some plants will always remain when using biological control agents.
- Any biological control plan needs to incorporate another non-chemical control method to be able to prevent all seed production as required by state law.
- Biological control is not recommended or prescribed for small infestations.
- The ragwort flea beetle (*Longitarsus jacobaeae*) larvae mine the roots of the rosettes and kill plants in the spring when they start to bolt. Heavy feeding by adult flea beetles on the leaves can kill rosettes in the fall and winter. Flea beetles are most effective in sunny pastures that do not flood and are below 2400 feet in elevation.
- The larvae of the ragwort seed fly (*Pegohylemia seneciella*) (which resembles a house fly) emerge in June and penetrate and feed on the developing seed heads. They attack up to 40% of the seed heads and consume 75-95% of the seeds. Uneaten seeds often fail to germinate. The seed fly by itself is an ineffective control method.
- The cinnabar moth (*Tyria jacobaeae*) does best in sunny, warm areas at elevations less than 3000 feet where the tansy ragwort densities are greater than 4 per 10 sq. ft. (4/m²). It does not do well on the coast and in shady areas under trees or where the plant density is below 1 plant per 20 sq. ft.

Chemical

- Effective chemical control of biennial and perennial weeds can be achieved only with *translocated* herbicides (ones that move through the plant and kill the roots).
- If desirable grasses or other monocots (sedges, rushes or cattails) are present, use a selective herbicide (one that affects only broadleaved plants), or carefully spot-spray only the tansy ragwort.
- Herbicides are most effective on actively growing plants in warm, dry weather.
- Herbicides should only be applied at the rates and for the site conditions and/or land usage specified on the label. **Follow all label directions.**
- It is important to establish new vegetation after treating an area. Follow the label for the timing because some herbicides stay active longer than others.
- **If using herbicide on plants that are about to flower, the flower heads need to be removed and bagged before applying herbicide.**

For questions about herbicide use, and specific herbicide recommendations, contact the Jefferson County Noxious Weed Control Program at 360-379-0470 ext 205, or noxiousweeds@co.jefferson.wa.us.

SUMMARY OF BEST MANAGEMENT PRACTICES

Small Infestations in Desirable Vegetation

- Pull plants by hand if soil is wet; the plants may need to be dug out if they are large or in dry compacted soil.
- If the plants are in flower, cut off and bag all flower heads because they can form viable seeds after they are cut or dug up. If there are already seeds, bag and cut off the seed heads before digging up the rest of the plant.
- Apply appropriate herbicide to actively growing plants if hand removal is not practical.
- Monitor site throughout growing season and remove any new plants.

Large Infestations \ Monocultures

- If enough labor is available, even large infestations can be controlled manually – see recommendations above.
- Mowing is not effective for controlling tansy ragwort. Mowing can be used if the infestation is found later in the year to keep the plants from flowering until an approved control method can be used. Do not mow tansy ragwort that has gone to seed.
- OR, large infestations can be controlled with herbicides. (See the Chemical section of this BMP).
- Suppression of large infestations of tansy ragwort with a selective herbicide will greatly increase grass production, which in turn increases the suppression of tansy ragwort.
- If needed, apply a nitrogen fertilizer after herbicide application and then manage grazing so that 4 to 6 inches of grass re-growth remains at the end of the growing season so that grasses can effectively resist re-invasion by the tansy ragwort. For more information on pasture management, contact the Jefferson County Conservation District (<http://www.jeffersoncd.org/links.html>).
- Biocontrols can also be used. (See the Biocontrol section of this BMP.)

Riparian and Aquatic Area Control

- Focus on manual removal for small infestations if possible, and prevent seed production.
- Mowing can serve in the interim until more effective control measures can be utilized.
- If manual control is not feasible, use an appropriate herbicide – see guidelines above.
- When large areas of weeds are removed, the cleared area needs to be replanted with native or non-invasive vegetation and stabilized against erosion.
- **Any herbicide application over or near water can be done only by a specially-licensed applicator using an approved aquatic formulation, and may require a permit from the Washington State Department of Ecology.**

Road Right-of-Way Control

- Pull small infestations if possible, and prevent seed production.
- If plants are about to flower, they can be mowed until a more effective control strategy can be used, BUT seed heads or flower heads should be bagged and disposed of.
- If manual control is not feasible, use an appropriate herbicide – see guidelines above. Be sure to look for small rosettes and seedlings near the larger plants.
- Revegetate with desired species if necessary.

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