

WEEDS

What you need to know to manage them safely and successfully

What is a weed?

- **Any plant growing where it is not wanted**

Noxious weeds

- “Noxious weed” means any weed designated by the Oregon State Weed Board that is injurious to public health, agriculture, recreation, wildlife, or any public or private property

Noxious weed ratings: A

- “A” – a weed of known economic importance which occurs in the state in small enough infestations to make eradication/containment possible; or is not known to occur, but its presence in neighboring states make future occurrence in Oregon seem imminent
 - Example:
 - Distaff thistle



Noxious weed ratings: B

- “B” – a weed of economic importance which is regionally abundant, but which may have limited distribution in some counties
 - Examples:
 - Gorse
 - Scotch broom
 - Field bindweed
 - Thistles (several)

Gorse



Scotch broom

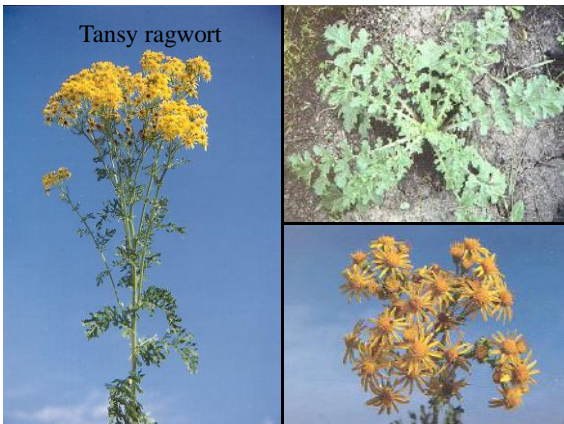


Field bindweed

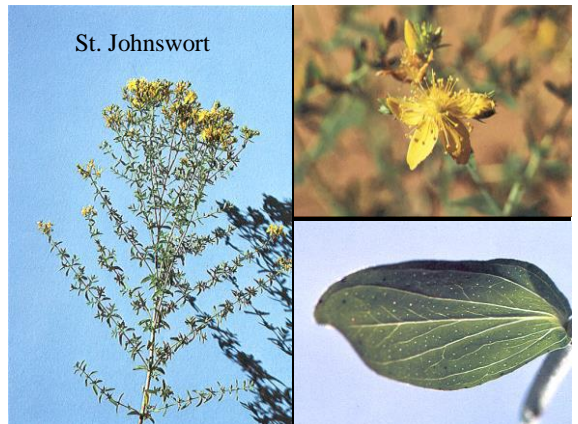
Noxious weed ratings: T

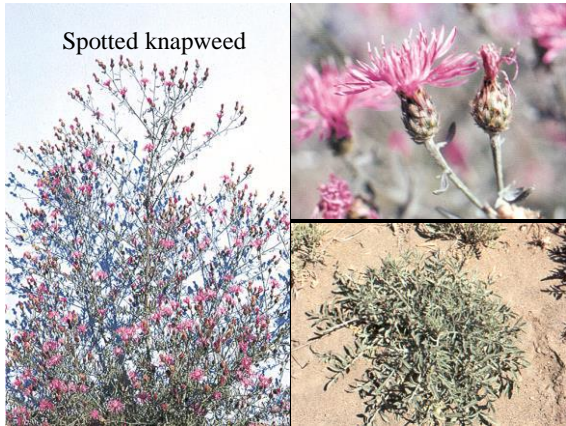
- “T” – a priority noxious weed designated by the State Weed Board as a target weed species on which the Department of Agriculture will implement a statewide management plan
 - Examples:
 - Spanish broom
 - Tansy ragwort
 - St. Johnswort
 - Spotted Knapweed

Tansy ragwort



St. Johnswort





Spotted knapweed

Targeted weeds by ODA

- Distaff thistle
- Gorse
- Tansy ragwort
- Spotted knapweed
- Yellow starthistle



Yellow star thistle

Why do we care about weeds?

- Aesthetics
- Competition with desirable plants for water & nutrients
- Weeds can harbor diseases, insects & rodents

Crop	Yield	
	Weedy	Nonweedy
Carrots	27.9 lb	503.3 lb
Beets	45.9 lb	240.3 lb
Cabbage	129.1 lb	233.6 lb
Onions	3.6 lb	67.7 lb
Tomatoes	23.2 lb	164.2 lb
Potatoes	52.7 lb	148.3 lb

*Plot sizes not specified, but weedy and nonweedy plots were equal in size. With the exception of weed management, both plots were treated the same.

Why are weeds so successful?

- Rapid growth
- Reproduce quickly & in high numbers
- Well-adapted seed dispersal techniques
- Long-lived seeds
- Adaptable to various environmental conditions
- Delayed dormancy allows seeds to germinate when conditions are favorable

Weed species	Number of seeds per plant	Seed survival (years)
Lambsquarter	72,450	40
Purslane	52,300	40
Dandelion	15,000	6
Pennsylvania smartweed	19,300	30
Canada thistle (per stem)	680	21
Pigweed	117,400	10
Barnyardgrass	7,160	3
Crabgrass	25,000	3

Note: Seed survival means that some viable seed remains. Generally, however, most seeds germinate or lose viability within 3 to 10 years or less, depending on soil conditions. A few, however, will hang on to aggravate future gardeners.

Classifications of weeds

- Growth habits
- Life cycles
- Vascular systems
- Root systems

Growth habits

- Basal rosette
- Prostrate
- Vining
- Woody

Why is this important?

This information aids in the proper identification of the plant

Life cycles

- Annuals
- Biennials
- Perennials

Why is this important?

A weed's life cycle dictates the proper timing of management techniques

Example: Little western bittercress is a winter annual that flowers from March to July



Vascular systems

- Monocotyledonous (grasses)
- Dicotyledonous (broadleaves)

Why is this important?

Herbicides often target one while not harming the other (selectivity)

Selective broadleaf herbicides:

2,4-D, dicamba, mecoprop (MCP), triclopyr (lawn weed killers)

Selective grass herbicides:

Sethoxydim (Poast)

Root systems

- Fibrous
- Taproots
- Stolons/rhizomes

Why is this important?

Root systems often dictate the appropriate management practices

Example: Don't till quackgrass!



Management techniques

- Prevention
- Cultural control
- Biological control
- Chemical control

No one technique alone will likely be successful; an integrated approach is always best!

Prevention

- Monitor imported soils, soil amendments and nursery stock for “new” weeds
- Use mulches and/or preemergent herbicides to prevent weeds where appropriate
- Coordinate efforts with neighbors to manage hard-to-control weeds, such as field bindweed (morningglory)

Cultural control

- Designed to suppress the growth or starve the entire plant.
- All leaves and stems need to be removed or light needs to be excluded from the plant.
- Repeated hoeing or cutting every three weeks for 2-4 years to kill some perennials.
- Mulches and landscape cloth

Cultural control

- Till, hoe or pull weeds (early & often!)
- Rotation (aggressive/non-aggressive crops)
- Fallow (clean till or cover crop)
- Close plant spacings
- Flaming
- Water management
- Solarization

Biological control

- Some success stories, Tansy ragwort, St. Johnswort, rush skeleton weed.
- Works on some introduced plants that have minimal natural pressures. Host specific.
- Usually insects or diseases released and will take 3-5 years for impact to be seen.

Chemical control

- Knowledge and precision required
- I.D. the weed
- Proper timing for maximum affect
- Know what plants to protect
- Use personal protective equipment
- **READ THE LABEL!**

Chemical control

KNOW THE MODE OF ACTION

Types of herbicides:

- Selective/non-selective
- Preemergent/postemergent
- Contact/systemic
- Organic/inorganic (organic/synthetic)

Chemical control hints

- Foliar- coincide spray with period of maximum translocation to the roots.
- Avoid drift by- increasing droplet size, spray when minimal breeze <5mph.
- Amine or Ester- use amine, lower vapor drift. Don't spray if temps over 80f.
- Granular- apply at low temps, water in.

General Rules

- Don't let weeds go to seed
- Kill weeds when they are young
- Weeding is a good family project
- If a little is good a lot is not better
- Follow the label
- **1 years seeding equals 7 years weeding**

Weed Identification & Control

Common weeds, their characteristics, and how to manage them

Poison oak: an example of nature's adaptability

- *ID*: leaves three, leave it be! Often a climbing shrub.
- *Control*:
 - Roundup (glyphosate)
 - Best results if applied after fruit has formed & before leaves lose their green color; use higher *labeled* rates for plants that have reached the woody stage of growth.
 - Garlon (triclopyr)
 - Apply when plants are actively growing; foliage must be thoroughly wet.



Himalayan blackberry

- *ID*: weak-stemmed shrub with leaves that are palmately compound, typically with five large, oval, toothed leaflets.
- *Control*:
 - Tordon
 - Apply in late spring after leaves are fully developed; foliage must be thoroughly wet, and reapplication will be required as regrowth occurs.
 - Roundup
 - Apply when canes are actively growing and after flowers or berries are formed; fall treatments before a killing frost not as good.
 - Garlon
 - Apply when plants are actively growing; foliage must be thoroughly wet.



Scotch broom

- *ID*: woody shrub.
- *Control*:
 - Roundup
 - Apply to actively growing plants in the spring.
 - Garlon
 - Apply any time the plants are actively growing; a thorough wetting of the foliage is essential.



Large crabgrass

- *ID:* summer annual 6" to 2' in height; leaf blades are flat and ¼ to ½ inch wide with sheaths that have long, stiff hairs.
- *Control:*
 - Roundup
 - Poast (sethoxydim)



Annual bluegrass

- *ID:* annual that, even when fertilized, tends to remain a light green; seedheads commonly visible from March to August.
- *Control:*
 - Roundup
 - Casoron



Little western bittercress

- *ID:* annual, winter annual or biennial, 2 to 12 inches tall with seeds that often eject explosively.
- *Control:*
 - Roundup
 - 2,4-D
 - Casoron



English daisy

- *ID*: perennial with a prostrate growth habit.
- *Control*:
 - Roundup
 - Dicamba
 - Triclopyr



Field bindweed (morningglory)

- *ID*: perennial, vining habit, from taproot up to 10 feet deep with extensive lateral roots.
- *Control*:
 - Roundup
 - Apply at full bloom to early seed stage of maturity; application on fall regrowth may provide some control.
 - Tordon
 - Apply as a coarse, low-pressure spray in sufficient volume for adequate coverage; timing is not critical, but results are most consistent if bindweed is early but to full bloom.
 - Dicamba or Weedmaster (dicamba + 2,4-D)
 - Apply during fallow prior to planting and when weeds are actively growing for suppression; apply in late summer or fall, prior to killing frost for control (best control is achieved when weeds are actively growing and in postbloom stage).



Dandelion

- *ID*: perennial herb with milky juice from an often branched taproot up to several feet long; leaves from 2 to 12 inches long, lobed and pointed or blunt at the tips.
- *Control*:
 - Roundup
 - Casoron
 - 2,4-D
 - Triclopyr
 - MCPA



Spotted catsear (false dandelion)

- *ID*: perennial, $\frac{3}{4}$ to 2 feet tall with leaves 2 to 8 inches long, lobed, rough-hairy & borne in a basal rosette.
- *Control*:
 - Roundup
 - 2,4-D
 - Triclopyr



Canada thistle

- *ID*: colony-forming perennial with deep and extensive horizontal roots, 1 to 4 feet tall.
- *Control*:
 - Roundup (glyphosate)
 - Apply when thistles are actively growing but past the bud growth stage; fall applications must be made before the first killing frost.
 - Stinger (clopyralid)
 - Control is best when applied to actively growing thistle after the majority of the leaves have emerged but prior to bud stage.
 - 2,4-D
 - Apply at the early bud stage of thistle. May require repeated applications.
 - Casoron
 - Apply in winter or spring before active growth of crops or thistle before a rainy period to allow for activation and to avoid volatilization.



Horsetail & scouringrush

- *ID*: perennials with tuber-bearing (horsetail) or deep, spreading (scouringrush) roots.
- *Control*:
 - Casoron (dichlobenil)
 - Apply any time as long as treated areas are mulched and watered to carry chemical into soil and reduce volatilization.
 - MCPA (4-chloro-2-methylphenoxyacetic acid)
 - Rhomene is one of many trade names.
 - Apply when horsetail rush fully emerges.
 - This herbicide will give 20 to 30% reduction in field horsetail stands with each spray application. Repeat applications are necessary and may be most effective with more than one application per year.





Bracken fern

- *ID:* perennial with branched, creeping, woody rhizomes.
- *Control:*
 - Banvel (dicamba)
 - Apply in late winter before fronds emerge; management for maximum vegetative competition aids control.
 - Roundup
 - Apply when fronds are at least 18 inches long; adequate foliar coverage is necessary.



Yellow nutsedge

- *ID:* perennial with creeping rootstocks and underground nutlets.
- *Control:*
 - Roundup
 - Apply when nutsedge is actively growing in midseason but before new tubers begin to form, usually by June 15 to July 1.
 - Casoron
 - Apply in winter or spring prior to applying bark mulch in landscape plantings; water into soil.



Tall fescue

- *ID*: deep-rooted perennial up to 4' tall.
- *Control*:
 - Roundup
 - Poast



Quackgrass

- *ID*: perennial that spreads readily by rhizomes; stems are 1 to 3 feet tall, and leaf blades are ¼ to ½ inch wide, flat and pointed.
- *Control*:
 - Roundup
 - Foliage must be thoroughly wet, but avoid runoff.
 - Casoron
 - Apply midwinter immediately before a cold rain to reduce volatility and enhance weed suppression



Orchardgrass

- *ID*: perennial up to 4' tall; leaves are more or less roughened, and blades are 1/8 to 1/2 inch wide.
- *Control*:
 - Roundup
 - Poast



Speedwell

- *ID:* annuals.
- *Control:*
 - Roundup
 - Preen (trifluralin)
 - Dacthal (DCPA)
 - Can be applied any time *Veronica* is present; Dacthal is phytotoxic to fine fescues and may injure bentgrasses.



Chickweed

- *ID:* annual or winter annual (mouseear chickweed is a perennial)
- *Control:*
 - Roundup
 - Casoron
 - Preen
 - 2,4-D, dicamba, MCPP
 - Spreader/stickers may aid in control of mouseear chickweed with these products.



Creeping buttercup

- *ID:* perennial that roots at lower nodes of stems.
- *Control:*
 - Roundup
 - MCPA
 - Dicamba



Oxalis (woodsorrel)

- *ID*: a prostrate, creeping perennial with a slender taproot.
- *Control*
 - Roundup
 - Triclopyr
 - Spreader/stickers aid in control.



Common groundsel

- *ID*: annual, sometimes biennial, from taproot; 6 to 18 inches tall.
- *Control*:
 - Roundup
 - Casoron
 - 2,4-D



Tansy ragwort

- *ID*: biennial or short-lived perennial from taproot; 1 to 6 feet tall.
- *Control*:
 - 2,4-D
 - Apply in the spring before any flowers appear; the earlier the application in relation to plant growth, the better the control.
 - Tordon, dicamba
 - Can be used at the flowering stage with good results.
 - Weedmaster (2,4-D + dicamba)
 - Crossbow



Field mustard

- *ID:* a winter annual or biennial from 1 to 4 feet tall; roots resemble a small turnip.
- *Control:*
 - Roundup
 - Casoron
 - 2,4-D



Fireweed

- *ID:* perennial with spreading rootstocks, up to 9' tall.
- *Control:*
 - Roundup
 - 2,4-D (fair: 60-80% control)



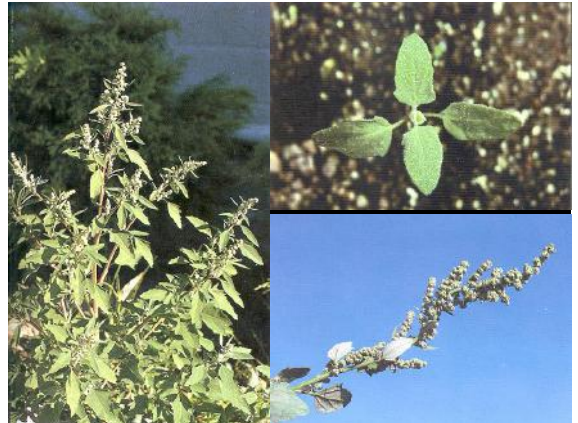
Vetch

- *ID*: annual with stems up to 6' long.
- *Control*:
 - Triclopyr
 - Dicamba
 - MCPA
 - 2,4-D



Lambsquarters

- *ID*: extremely variable annual, 1 to 6 feet tall.
- *Control*:
 - Roundup
 - Casoron
 - 2,4-D
 - Preen
 - MCPA
 - Dicamba



Redroot pigweed

- *ID*: annual, usually 2 to 3 feet tall; lower stems are often red or red-striped, with color continuing down the taproot.
- *Control*:
 - Roundup
 - Casoron
 - 2,4-D
 - Preen



Palmer amaranth

- *ID*: annual, commonly 1 to 6 feet tall; hybridizes with other pigweeds.
- *Control*:
 - Roundup
 - Treflan
 - 2,4-D
 - MCPA
 - Dicamba
 - Casoron



Poison hemlock

- *ID*: biennial from 6 to 8 feet tall, occasionally to 10 feet; can be mistaken for wild parsley.
- *Control*:
 - Weedmaster (dicamba + 2,4-D)



Western waterhemlock

- *ID*: highly poisonous native perennial from 3 to 7 feet tall; horizontally-divided, enlarged taproot is its most easily-recognized feature; occurs along streams and irrigation canals.
- *Control*:
 - 2,4-D or MCPA
 - Apply in early bolting stage of growth.



Queen Anne's lace (wild carrot)

- *ID*: biennial herb, 2 to 4 feet tall, basal rosette with a deep taproot.
- *Control*:
 - MCPA
 - Apply in spring or fall when wild carrot is actively growing but before bolting.
 - Roundup
 - Casoron
 - 2,4-D

