

# ID Basics of Prohibited & select Noxious Weeds

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# Spotted Knapweed

*Centaurea maculosa*

## Description

- Tap rooted perennial
- **Stems:** single to many upright 30 to 100 cm tall
- **Leaves:** Rosette leaves are twice divided into narrow long lobes
- Leaves closer to top and of young seedlings are less divided



Photos: SA



# Spotted Knapweed

*Centaurea maculosa*

- **Flowers:** Thistle-like flowers form on ends of branches - pink to purple (occasionally white)
- Buds are egg shaped
- Bracts have dark fringed tips creating “spotted” appearance



Photos: SA

# Diffuse Knapweed

*Centaurea diffusa*

Biennial, but can be annual or short lived perennial

- Deep tap root
- **Leaves:** similar to spotted knapweed, but finer lobes and divisions

Photos: California  
Department of Agriculture



Diffuse Knapweed 7/72  
CDFA/IPC- W.J. Ferlitta



# Diffuse Knapweed

*Centaurea diffusa*

**Flowers:** Typically white but can be pink

- Similar size and shape to spotted knapweed
- Bud scales are tipped with a single rigid spine 0.25" to 0.3" long with several pairs of lateral spines rather than black hairs (spotted)
- Hybrids of diffuse and spotted knapweeds have been reported



Photos: B.C. Agriculture & California Department of Agriculture



# Yellow Starthistle

Photos: The Nature Conservancy

*Centaurea solstitialis*

A winter annual with a deep tap rooted; reproduces by seed only

- **Stem:** 1 to 2 m tall
- **Leaves:** fused to stem to create winged appearance
- Rosette leaves similar to Russian knapweed
- Entire plant covered with fine cottony hair over thick stiff hairs = grey



# Yellow Starthistle

Photos: The Nature Conservancy & UC Davis

*Centaurea solstitialis*

## Flowers

- Yellow flower similar in shape to other knapweeds
- Bud scales (bracts) tipped with a stiff spine from 1/4" to 2" long
- Small pair of lateral spines also present
- One plant can produce up to 100,000 seeds
- Seeds can germinate immediately or lay dormant for up to ten years





# Field Scabious (*Knautia arvensis*)

- Originally from Europe where it is a wildflower
- Simple perennial with a strong tap root
- Member of the Teasel family related to domestic Blue buttons (*Scabiosa caucasica*)
- Invasive and aggressive in undisturbed areas
- Prefers moist high organic matter habitats, but will grow in dry as well
- Reproduces by seed and crown will spread gradually from lateral buds
- Found in Birch Hills and south of Yorkton





# Field Scabious (*Knautia arvensis*)

## Plant

- Entire plant covered with ***coarse stiff hairs***
- Growth begins as a large rosette
- Stems grow from 1 to 4 feet tall
- ***Large distances between nodes***
- May have ***several stems*** from one large crown
- Stems are unbranched until high in plant to support flowers



# Field Scabious (*Knautia arvensis*)

## Leaves

- Leaves ***opposite*** on stem and nodes can be one foot apart or more
- Larger leaves near the base of the plant are ***deeply lobed***
- Topmost leaves are ***feather shaped, less coarsely lobed, and much reduced in size***
- Leaves are from 4 to 10 inches long



# Field Scabious (*Knautia arvensis*)

## Flowers

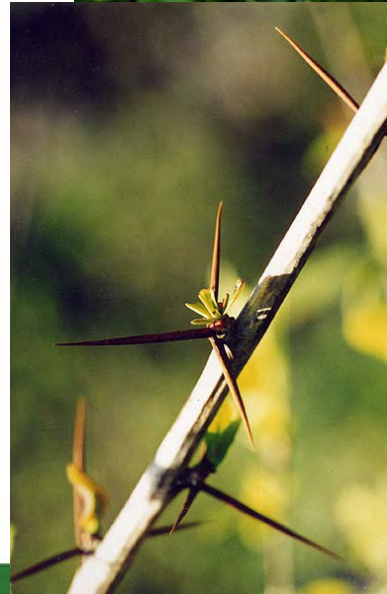
- Disc type flower platform with deep pink to pale blue tubular flowers (occasionally white)
- creates a dome of coarse seeds when mature
- Seeds shatter quickly – some before seed is mature
- Can produce 2000 seeds per plant





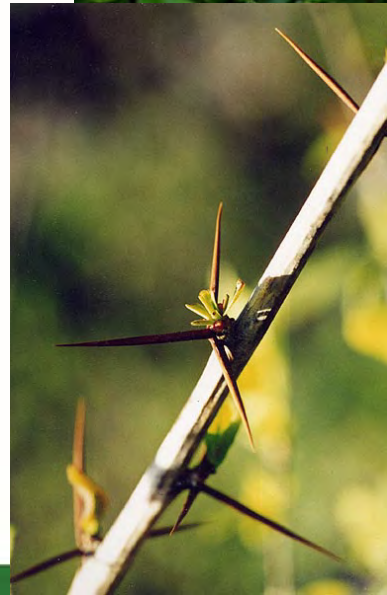
# Common or European Barberry

- A deciduous shrub 8 to 10 feet tall & 6 feet wide.
- **Stems:** Bark gray with sharp spines at nodes and the inner wood is yellow. Spines are double- or triple-branched.
- **Leaves:** small, toothed, ovate, alternate, dull green above and grayish below borne in clusters on branches. Leaves on young sprouts are spiny.



# Common or European Barberry

- **Flowers:** Yellow ½ inch long borne in drooping racemes 1 to 2 inches long with an unpleasant odor.
- **Fruit:** small oblong berries scarlet red to purple containing 1-3 small, black seeds.







**Habit of growth**



**Leaf:**  
Note spiny  
edge



**Spines:**  
Usually three  
or more

# *The Common Barberry*

*(Alternate Host for Stem Rust)*



**Sprouts**



**Berries:**  
Red and in  
clusters



**Seedlings:**  
Note yellow wood  
and roots



# Common or European Buckthorn

- A *shrub or small tree* that can grow to **22 feet tall** with a **trunk up to 10 inches** wide.
- **Stems:** *Bark is gray to brown*, rough when mature; *Inner bark is yellow* and the *heartwood, pink to orange*. Twigs are often **tipped with a spine**.
- **Flowers:** clusters of 2 to 6, yellow-green, 4-petaled flowers from stems near the bases of leaf stalks. Separate male and female plants.
- **Fruits:** Small black ~ 1/4 inch across containing 3-4 seeds, form in the fall.
- **Leaves:** *dark, glossy green without hairs*; broadly oval, rounded or pointed at the tip, with **3-4 pairs of veins curved to the tip**, and have jagged, toothed margins. Stay green late into fall.
- Found in South Sask River Valley in and around Saskatoon as well as Wascana Park (old intention planting in front of legislature as well as escapes)



# Garlic Mustard

- **Stems** : up to 40in. tall,
- **Leaves**: May germinate in the fall; lower stem leaves alternate, broad and *kidney-shaped early on*; then *upper leaves triangular*, 2/5-3in. long and wide, with *acute (strongly pointed) tip* and *coarsely toothed margins*;
- **Flowers**: small, *white, with 4 petals*, the lowermost 1-3 flowers and seedpods may be in the axils of small leaves;





# Garlic Mustard

- The whole plant has a ***distinctive onion-like or garlic-like odour***. Flowers from May to June.
- **Habitat:** moist woods, swampy areas and ditches and along roadsides and railway embankments.
- ***2011 update – reported in Edmonton***





# Red Bartsia

- **Stems:** erect, branching; 1 to 2 ft. tall
- **Leaves:** clasping, narrow tapering to a point; ~ 1.25 in. long; opposite in pairs.
- **Flowers:** Spike-like clusters develop leaf axils. Most found on the top half of the stem. Blossoms reddish-purple resembling tiny snapdragon flowers less than 1/2 inch long.



# Red Bartsia

- **General:** At maturity, infestations give a reddish tinge to hayfields, pastures or ditches.
- **Seeds:** about 1400 seeds/plant; high dormancy. Coarse hairs cover the seeds, enabling them to stick to clothing and equipment.





# Perennial Pepperweed

- **Creeping perennial** Mustard Family
- **Stems:** 0.3 to 1 metre tall or more
- **Leaves:** lance-shaped, **waxy, distinctive white mid-veins**; lower stalked; upper short stalked or stalkless; do not clasp the stem;
- **Flowers:** 4 petal; white borne in dense, rounded clusters at branch tips
- **Seeds:** 2 reddish-brown seeds in each tiny, lens shaped and slightly hairy fruit -
- Distinguished from horseradish by ***plenum running across the narrow part of the pod***





# Poison hemlock

- A biennial member of the carrot family that grows 3 to 8 feet tall. Reproducing only by seed.
- **Highly poisonous**
- **Stems:** thick, ***hollow, ridged, and purple-spotted*** & a thick, white taproot
- **Leaves:** ***shiny*** green, **3 to 4 times divided**, and clasp the stem at the obvious nodes. Crushed foliage and roots have a ***foul odor***.



# Poison hemlock

- **Flowers:** small, white, and borne in *umbrella-shaped clusters* about 3 inches across (appearing in early summer). It reproduces from *seeds ridged and flattened*, with 2 seeds borne together. It has that may easily be mistaken for wild parsnips.
- **Habitat:** generally on dry-to-moist soils, and can even tolerate poorly drained soils. It is usually found along streams, irrigation ditches, and the borders of pastures and cropland, and can gradually invade perennial crops.





# Hound's-tongue

- A biennial tap-rooted weed growing 0.5 to 1.2 metres tall;
- **Leaves:** soft, hairy rosette leaves (7 to 30 cm long) produced in first year resemble the *shape of a dog's tongue*; stem leaves are shorter and stalkless;
- **Flowers:** dull *reddish-purple*
- **Seeds:** 4 *rounded triangular* nutlets (seeds) that are covered with *hooked prickles*

Photo by:  
Richard Old  
[www.xidservices.com](http://www.xidservices.com)



# Hound's-tongue

- easily spread by seed attachment to clothing and animals
- contains toxic alkaloids that can cause liver damage in grazing animals
- well adapted to forested areas, roadsides and meadows





# Saltcedar

*Tamarix spp.*



## Description

- Deciduous shrub or small tree
- Reddish brown or dark brown to deep purple
- Small scaly leaves that turn yellow-orange in fall
- White to pink flowers, 4 or five petals

Photos: The Nature  
Conservancy Web  
Site

# Saltcedar

Tamarix spp.

## Description

- Can produce large numbers of small seeds
- Can reproduce from buried stems
- Very tolerant of saline soil
- Concentrates salt in leaves
  - Leaf litter causes salinity to increase under plant
- Displaces native vegetation
- Establishes along riparian areas
- **2011 update – found in Findlater Gravel pit and dugout south of Swift Current**



Photos: The Nature  
Conservancy Web  
Site

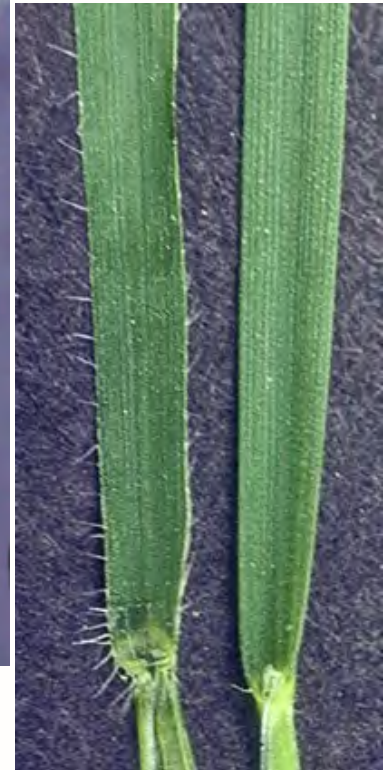




# Jointed Goatgrass

*Aegilops cylindrica*

- winter annual grass; similar habitat to downy brome
  - pasture, winter cereals
- looks very similar to wheat plant
- **Seed head:** long cylindrical spike
- **Leaves:** similar to wheat with evenly spaced hairs at the base
- well adapted to reduced tillage
- No registered controls in winter cereals
  - Odyssey or Adrenalin hold promise
- Manage with burn-off in spring cereals as with downy brome



# Puncturevine

- Annual, branching from the base and spreading along ground to form dense mats;
- **Leaves:** hairy; grow in opposite pairs; divided into 4 to 8 pairs of oval leaflets;
- **Flowers:** yellow borne in leaf axils;
- **Fruit:** has 5 sections that form tough, sharp sometimes curving spines that easily penetrate leather, and skin and can flatten rubber tires





# Giant foxtail

- An annual grass may reach 2 to 5 ft.
- **Leaves:** up to 16 in. long, 0.6-1 in. wide with small hairs covering the top surface. Auricles are absent and the ligule is a fringe of hairs reaching 3 mm in length.
- **Flower:** late summer to early fall; bristly inflorescence resembles that of green foxtail. The seed head is a cylindrical, bristly panicle that becomes drooping with maturity.
- Giant foxtail is generally larger and has a nodding seed head, unlike green or yellow foxtail.



# Halogeton

- annual reproduces by seed only,
- **Stems:** erect, many stems 3 to 15 inches. Blue/green in spring, turning yellow or red in fall. Toxic to livestock, especially sheep, from high oxalate content.
- **Leaves:** Alternate, in bunches along the stem, **fleshy, tube-like**, blunt end; tipped with **delicate needle-like spine**. Tufts of cottony hairs at leaf attachment.
- **Flowers:** Green, **inconspicuous**, borne in leaf axil.
- **Seeds: Two types:** Black – non-dormant; brown, dormant for several years.





# Flowering Rush

- aquatic perennial introduced as an ornamental plant;
- reproduces by seeds and vegetative bulblets formed on the roots. Both the seeds and the bulblets move by water currents.
- **Stems:** three feet tall and triangular in cross section.
- **Seeds:** are quite long-lived which also enhances their ability to disperse.
- **Flowers:** borne in umbel, with three showy white or pale pink petals per floret



# Dalmation Toadflax

*Linaria dalmatica*

- **Clump forming** perennial with stout taproot and short creeping lateral roots
- **Leaves:** Hairless, waxy, **heart shaped** up to 2 inches long. Clasp the stem.
- **Flowers:** Snapdragon-like with orange throat, bright yellow petals and basal spur. Mirror symmetry.
- **Stems:** Hairless, branched up to 3 ft tall. Up to 20 per crown/plant.





# Noxious Weeds

# Yellow Toadflax

*Linaria vulgaris*

- **Patch forming** perennial with deep tap root and moderately creeping roots
- **Leaves:** very *narrow tapering* at both ends and stalkless
- **Flowers:** Snapdragon–like with deep yellow throat, pale yellow petals and basal spur. Mirror symmetry.
- **Stems:** two feet tall, mostly unbranched



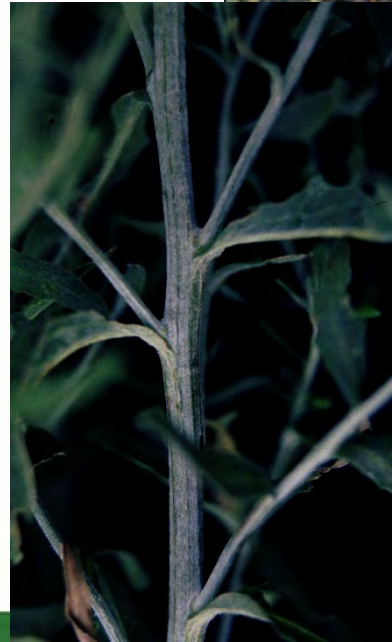


# Russian Knapweed

Photos: SA

*Acroptilon repens*

- Deep rooted, persistent perennial
- **Roots:** Stout, dark, woody tap root with moderate creeping lateral roots
  - Forms dense colonies from root buds
- **Stems:** Entire plant covered with fine hair; grey-green appearance
- **Leaves:**
  - Lower shallowly lobed or toothed, stalkless, alternate on stem
  - Upper leaves smaller not lobed with a soft spine at the tip
- **Flowers:** pale pink to pale purple & fade with age; Form at ends of branches
  - Scale like bracts that form flower bud are greenish at base to papery translucent and blunt at tip



# Field Bindweed

*Convolvulus arvensis*

- Deep rooted, persistent perennial
- **Roots:** deep tap root with 2-3 years of energy to grow from buds; long creeping lateral roots that bud
- **Stems:** horizontal or twine up vertical structures (counter-clockwise turns)
- **Leaves:** alternate, entire, stalked, nearly narrow arrow shape with rounded tip. Blunt basal lobes that flare back or outward.
- **Flowers:** bell or trumpet shaped; white to pink; 1 inch across. Borne on a long flower stalk with small bracts (flower leaves) halfway along the flower stalk



Photos: Sask Ag and Washington State  
University



# Bull thistle

*Cirsium vulgare*

- Biennial - flowers and dies in year 2
- **Year 1:** large rosette - up to 5 ft. across
- **Year 2:** produces many branches with large vase shaped flowers with purple/pink tops and long spines on bracts
- long fleshy tap root



Photos: Department of Crop and  
Soil Sciences, Michigan State  
University and Ronald Calhoun

# Bull thistle

*Cirsium vulgare*

- Usually found in undisturbed places like pastures, roadsides and waste areas
- Can reach heights of 2 m
- Stem has ***spiny wings*** that are extensions of the leaves
- lobes of leaves are irregular and are ***tipped with long yellow spines***
- Leaf surface is rough and covered in ***stiff coarse hairs***





# Nodding thistle

*Carduus nutans*

- Biennial - flowers and dies in year 2
- **Year 1:** large rosette - up to 5 ft. across
- **Year 2:** Grows up to 7 ft tall
- Produces many branches with **large (2" across) purple/pink flowers** in second year
- Leaves (rosette or stem) are **hairless** sometimes fringed with **white or pink halo**
- long fleshy tap root
- flower droops to the side hence the name "nodding thistle"



# Nodding thistle

*Carduus nutans*

- Seed head weevil  
*Rhinocyllus conicus* prevents  
majority of seed production



Photos: Sask Agriculture



# Dame's Rocket

*Hesperis matronalis*

- Biennial to short-lived perennial member of the mustard family reproducing by seed only
- **Roots:** shallow and fibrous
- **Stems:** Erect, hairy and leafy; mostly unbranched. Less hairy near the top. Up to 4 ft tall.
- **Leaves:** elongated triangular, alternate on stem, with a mix of simple and forked hairs. Slightly wavy edges.
- **Flowers:** *Magenta to purple, four petals*. Borne in clusters at the top of the plant in the axils of the leaves. Sweet odor.





# Wild Parsnip

Pastinaca sativa

## Description

- Member of the ***carrot family*** (Umbelliferae)
- Monocarpic perennial – produces fruit once then dies – may take 2 or more years requiring a cold period to flower
- Grows from 1 to 5 ft. high on hollow & deeply grooved stems.
- Large fleshy tap root resembling domestic parsnip
- The general colour of the plant is light green



Photos: Sask Agriculture



# Wild Parsnip

*Pastinaca sativa*

## Description

- Reproduces only by seed
- The flowers are borne in umbels at the terminal ends of branches
- Wild parsnip and dill are only members of the carrot family with **yellow flowers**
- Seeds survive in the soil for up to 4 years



Photos: Sask Agriculture



# Wild Parsnip

Pastinaca sativa

## Description

- The leaves are pinnately compound (leaflets opposite along central vein) and borne on long petioles that encircle the stem lower on the plant
- Leaves have 2 to 5 leaflets that are roughly shaped like mittens with serrated edges
- Terminal leaflet is diamond shaped



Photos: Sask Agriculture



# Wild Parsnip

Pastinaca sativa



## Biology and Impacts

- Grows in sunny occasionally disturbed environments in roadsides, waste places, wet areas and occasionally fields
- Somewhat dedicated to edge environments
- Sap of the plant ***causes severe photosensitivity that can result in severe burns*** to areas of the skin that contact the plant
  - furocoumarins

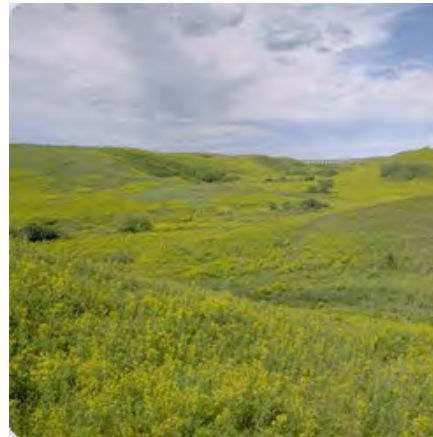


Photos: Sask Ag, Wisconsin  
Natural Resources Magazine  
and Centre for Disease Control,  
Atlanta, GA

# Leafy Spurge

*Euphorbia esula*

- Deep rooted, persistent perennial with **milky sap**
- **Root:** up to 23 ft deep; lateral roots up to 10 ft; many pink buds
- **Stems:** hairless, unbranched except at top; up to 3 ft tall.
- **Leaves:** long, thin, entire (straight edges) and attached directly to the stem.
- **Flowers:** yellow to yellowish green; modified leaves. Appear shortly after plant emergence in May-June.





# Hoary Alyssum

*Berteroa incana*

- Annual to short-lived perennial in the Mustard Family growing erect to 0.7 metres tall
- the whole plant covered with star-shaped hairs
- **Leaves:** upper leaves are elliptic and clasp the stem
- **Flowers:** white with 4 deeply notched petals ( appear as eight)
- Fruits: oval seedpods are 5 to 8 mm long, somewhat flattened and held close to the stem
- Each plant can produce and estimated 100,000 seeds



# Common Tansy

*Tanacetum vulgare*

- Long-lived clump forming perennial reproducing by seed
- **Roots:** large stout perennial crown with short lateral roots
- **Stems:** many largely unbranched; somewhat woody.
- **Leaves:** deeply divided, deep coarse serrations on divisions. Glandular.
- **Flowers:** yellow buttons. Daisy like flowers with insignificant petals





# Absinthe

*Artemisia absinthium*

- Long-lived perennial plant
- Reproduces only by seed
- Sage odor and bitter tasting
- Usually produces several stems each year 2 to 4 ft. tall
- Fine hairs over entire plant giving a light ghostly grey blue-green appearance
- Leaves 2 to 4 in. and divided several times



# Absinthe

*Artemisia absinthium*

## Flowers

- Wind pollinated
- Produced in large numbers
- Borne on spike-like panicles
- Individual heads contain about 20 seeds
- Plant can produce up to ~9000 seeds per year

## Seed

- <1/16" long
- Shaped like a small light bulb
- Seed is short lived - 4 years
- Germinates all year long
- Germinates over a wide range of temperatures



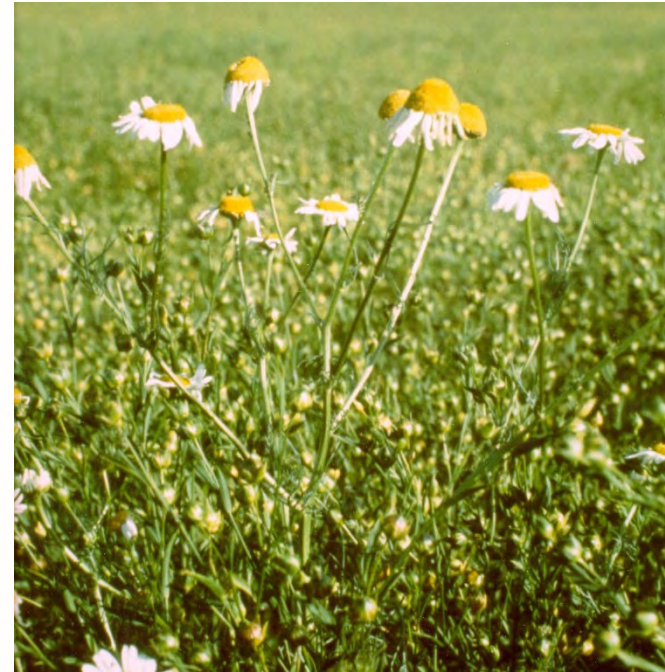


# Scentless chamomile

*Tripleurospermum perforatum* (*Matricaria perforata*)

- Annual, winter annual, biennial, short lived perennial
- reproduces by seed only
- produces up to 1,000,000 seeds
- likes moist occasionally disturbed environments
- causes significant yield losses particularly in wet years

Photos: SA & Agri-Food  
Innovation Fund

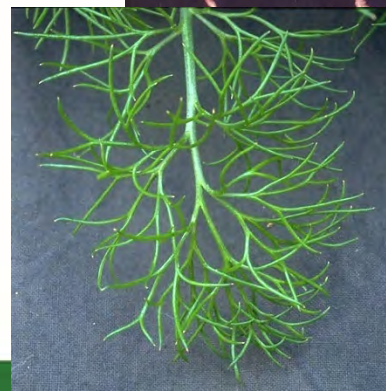


# Scentless chamomile

*Tripleurospermum perforatum* (*Matricaria perforata*)

- Flowers are white pedaled daisy like flowers
- finely divided leaves
- hairless
- short tap root with fibrous secondary roots
- pulls out easily by hand

Photos: SA, Agrium Weed Identification CD-ROM and G. Bowes, AAFC





# Oxeye Daisy

*Leucanthemum vulgare*

- Perennial with short creeping roots
- **Leaves:**
  - **Rosette:** spoon shaped, ***not divided***, with scalloped edges.
  - **Stem:** sparse, elongated with coarse serrated edges; attached directly to stem with no petiole (leaf stalk)
- **Flower:** white petals and yellow button borne at the ends of stems



End





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