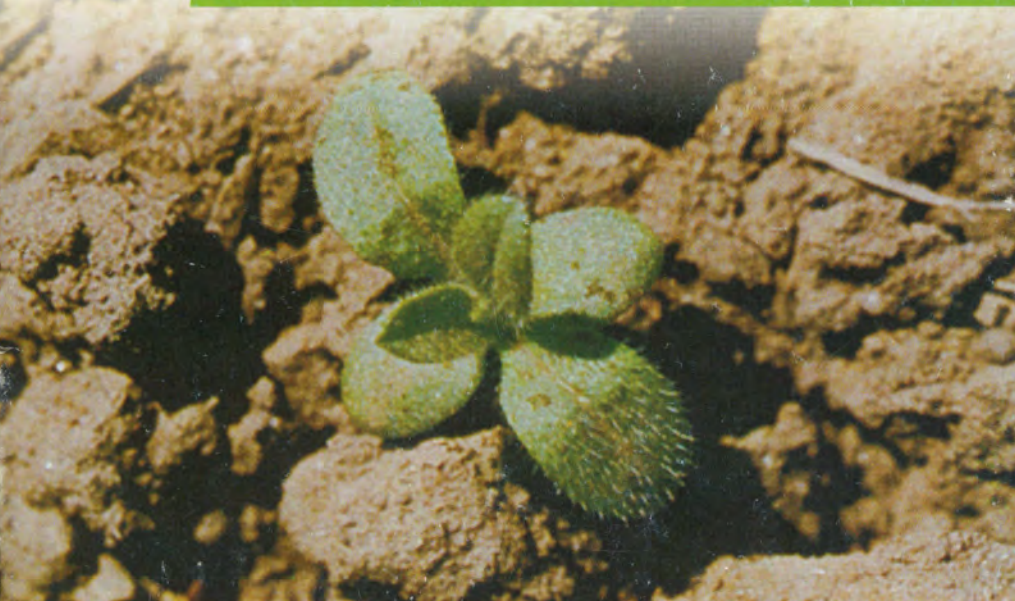




# Weed Seedling Identification Guide



# Weed Seedling Identification Guide

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| Wild oat.....                   | 4    |
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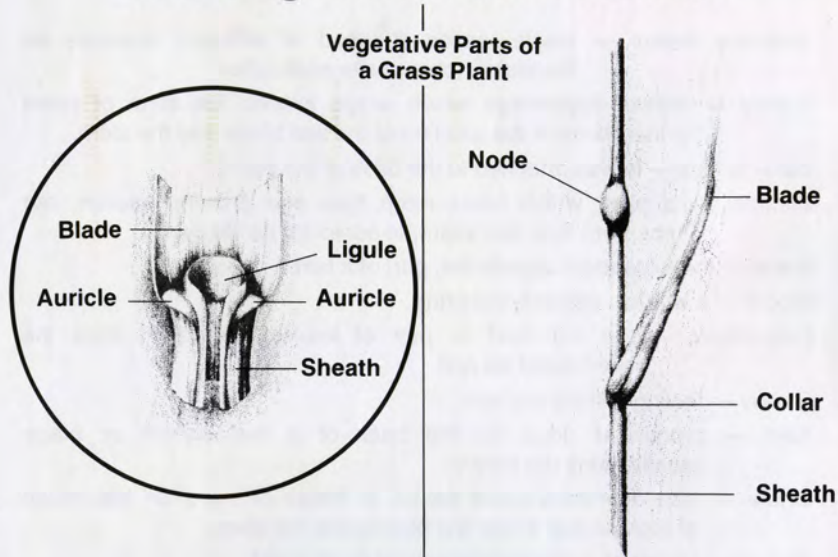
## Glossary

- Alternate leaves** — single leaves attached at different positions on the stem, not opposite each other.
- Auricle** — earlike appendage which wraps around the stem of some grass plants at the junction of the leaf blade and the stem.
- Basal leaves** — leaves attached to the base of the plant.
- Biennial** — a plant which takes more than one growing season, but not more than two years, to complete its life cycle.
- Blade** — the expanded, usually flat, part of a leaf.
- Bloom** — a whitish, powdery covering.
- Cotyledons** — the first leaf or pair of leaves originating from the seed (seed leaves).
- Glossy** — having a shiny surface.
- Keel** — prominent ridge on the back of a leaf sheath or blade usually along the midrib.
- Ligule** — flap of membranous tissue or fringe of hairs on the inside of a grass leaf where the blade joins the stem.
- Mid-vein** — (midrib) — the central vein or rib of a leaf.
- Node** — joint in the stem where leaves or branches are attached.
- Opposite leaves** — two leaves originating from the same point on the stem and opposite each other.
- Petiole** — the stem of a leaf.
- Rosette** — a flat, circular cluster of leaves formed at the ground surface. Usually an overwintering stage.
- Sheath** — the lower part of a leaf that surrounds the stem or shoot.
- True leaves** — leaves that develop after the cotyledons.
- Whorl** — three or more leaves attached at the stem at the same point (whorled).

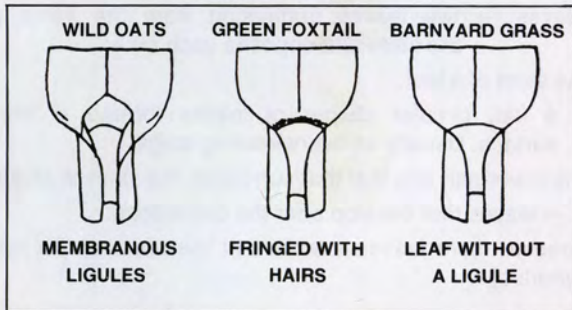




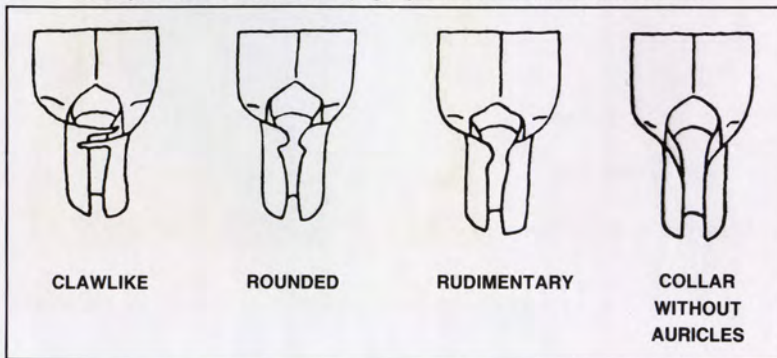
# Seedling Grass Identification



## Types of Ligules



## Shapes of auricles and (right) a collar without auricles.



## Barnyard grass

*Echinochloa crusgalli*

- no auricles
- no ligule
- leaf hairless or 1-3 solitary hairs at base of blade



## Green foxtail

*Setaria viridis*

- no keel
- leaf margins and surface rough with fine upward pointing barbs
- ligule a fringe of hair 1.5-2.0 mm long
- no auricles



## Persian darnel

*Lolium persicum*

- shiny dark green on upper leaf surface
- base of stem is reddish-purple
- membranous ligule to 1 mm long
- auricles usually present







**Proso millet**  
*Panicum miliaceum*

- leaf blade and sheath covered with dense stiff hairs
- ligule a fringe of hairs fused at the base, 3.0-4.0 mm long

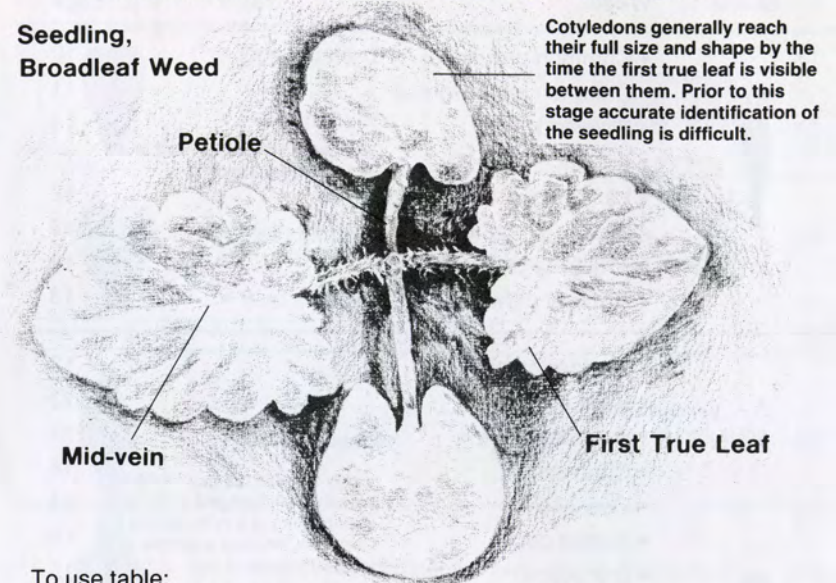


**Wild oats**  
*Avena fatua*

- Counter-clockwise leaf twist
- no auricles
- hairs on leaf margins
- membranous ligule

## Broadleaf Weed Identification

### Seedling, Broadleaf Weed






To use table:


- Compare cotyledon shape with shape in left hand column.
- When similar shape is located turn to pages indicated and compare true leaves in photos with weed specimen for identification.

NOTE: Weed species are arranged according to cotyledon shape.

| Cotyledon Shape | Weed                  | Page  |
|-----------------|-----------------------|---|
|                 | • Corn spurry         | 8   |
|                 | • Russian thistle     | usually less than 1 mm broad, a few mm in length, almost of uniform breadth throughout. 8   |
|                 | • Wild tomato         | 8   |
|                 | • Cocklebur           | at least 10 times as long as broad, top tapering to a point, more or less long stalked, tapered gradually into the stalk, usually broader in the middle than at the ends. 9 |
|                 | • Chickweed           | narrow-oval to ovate, top tapering to a point, base rounded or tapering into the stalk. 9   |
|                 | • Absinth             | with broad base, or slightly narrowed at base, at most 2-3 times as long as broad, compact, occasionally fleshy. 9  |
|                 | • Pineappleweed       | 10  |
|                 | • Scentless chamomile | 10  |



| Cotyledon Shape   | Weed                         | Page   |
|---|------------------------------|--|
|    | • Common groundsel           | 10   |
|   | • Common peppergrass         | 11   |
|   | • Flixweed                   | 11   |
|   | • Kochia                     | elongated, elliptical, with a more or less long stalk. 11  |
|   | • Lamb's quarters            | 12   |
|   | • Prostrate knotweed         | 12   |
|   | • Prostrate pigweed          | 12   |
|   | • Redroot pigweed            | 13   |
|    | • Bladder campion            | 13   |
|   | • Burdock                    | 13   |
|   | • Canada thistle             | 14   |
|   | • Cleavers                   | a very variable group, oblong to broadly oval, rounded at the base or narrowing to a more or less long stalk. All have a compact form with rounded top. 14 |
|   | • Cow cockle                 | 14   |
|   | • Curled dock                | 15   |
|   | • Dandelion                  | 15   |
|   | • Diffuse knapweed           | 15   |
|   | • Milkweed                   | 16   |
|   | • Narrow-leaved hawk's beard | 16   |
|   | • Night-flowering catchfly   | 16   |
|   | • Russian pigweed            | 17   |
|   | • Smartweeds                 | 17   |
|   | • Thyme-leaved spurge        | 17   |
|   | • White cockle               | 18   |
| • Wild buckwheat  | 18                           |  |
| • Yellow whitlow grass  | 18                           |  |
|  | • Bluebur                    | 19   |
|   | • Giant ragweed              | 19   |
|   | • Nodding thistle            | usually markedly stalked (stalk occasionally very short), gradually tapering or rounded at the base, generally broadest at or above the middle. 19         |
|   | • Shepherd's purse           | 20   |
|   | • Sow thistle                | 20   |
|   | • Stinkweed                  | 20   |
|   | • Viper's bugloss            | 21   |

| Cotyledon Shape   | Weed                  | Page  |
|---|-----------------------|---|
|    | • Dog mustard         | top flat with slight indentation, base gradually tapering into the stalk, broadest above the middle. 21                 |
|   | • False ragweed       | 21  |
|    | • Field bindweed      | top deeply indented, base gradually narrowed into stalk. 22   |
|   | • Wild mustard        | 22  |
|    | • Yellow toadflax     | top rounded, sides incurved, gradually tapered into stalk at the base. 22   |
|    | • Round-leaved mallow | triangular shape, top rounded. 23   |
|    | • Wild cranesbill     | broader than long. 23   |
|   | • American dragonhead | 23  |
|   | • Hempnettle          | outline of the cotyledons orbicular-oval, the base has a pointed auricle on either side of the stalk, or is rounded. 24 |
|   | • Tartary buckwheat   | 24  |
|  | • Stork's-bill        | three-lobed or deeply divided into three. 24  |
|  | • Biennial wormwood   | indented at top. 25   |
|  | • Wild cucumber       | with a broad base very large and fleshy. 25   |





**Corn spurry**  
*Spergula arvensis*

- leaves similar to Russian thistle but occur in whorls on the stem
- leaves may be slightly sticky and have blunt tips



**Russian thistle**  
*Salsola pestifer*

- long, fleshy, needle-like leaves and cotyledons
- leaves have sharp tips



**Wild tomato**  
*Solanum triflorum* Nutt.

- leaves deeply lobed with scattered hairs



**Cocklebur**  
*Xanthium* spp.

- coarse-veined true leaves
- first two leaves paired, later leaves alternate



**Chickweed**  
*Stellaria media*

- cotyledons slightly constricted at tip
- conspicuous line of hairs on one side of stem later in development



**Absinth**  
*Artemisia absinthium*

- leaves silvery, hairy on both surfaces
- characteristic odor





### Pineappleweed

*Matricaria matricarioides*

- extensively divided leaves, resembles a coarse carrot top
- leaves have strong pineapple odor when crushed



### Scentless chamomile

*Matricaria maritima*

- similar to pineappleweed
- leaves have no odor when crushed
- more finely divided than pineappleweed



### Common groundsel

*Senecio vulgaris*

- cotyledons and leaf stalks deeply grooved at base
- leaves alternate, prominent keeled mid-vein underneath
- forms rosette in early stages

### Common peppergrass

*Lepidium densiflorum*

- granular bloom on leaves
- base of leaf stalk downy, whitish appearance
- forms rosette



### Flixweed

*Descurainia sophia*

- first two true leaves are 3 lobed
- other leaves finely divided, grey-green
- covered with fine hairs
- leaves alternate except for first two
- odorless



### Kochia

*Kochia scoparia*

- cotyledons bright pink underneath
- leaves covered with soft, fine hairs
- no odor







### Lamb's quarters

*Chenopodium album*

- underside of cotyledons and young leaves pinkish
- young plant covered with silvery particles, especially conspicuous on underside of leaves



### Prostrate knotweed

*Polygonum aviculare*

- cotyledons long and narrow
- papery sheath at base of leaf
- common on hard packed areas



### Prostrate pigweed

*Amaranthus blitoides*

- cotyledons longer than redroot pigweed
- first true leaves longer than they are broad

### Redroot pigweed

*Amaranthus retroflexus*

- underside of cotyledons and base of stem dark red
- first true leaves prominently veined, as long as broad
- mid-vein of first true leaves extends as a small temporary bristle in the notched tip



### Bladder campion

*Silene cucubalus*

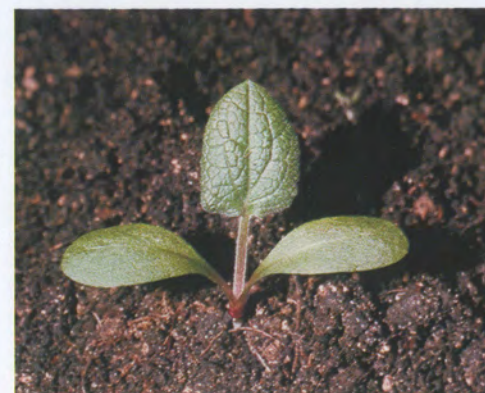
- hairless
- cotyledons slightly petioled
- true leaves in pairs, united at base



### Burdock

*Arctium minus*

- waxy surface on cotyledons
- true leaves petioled
- true leaves coarse-veined and downy on undersurface
- leaf stalk flared and clasping at base to form a tubular sheath







### Canada thistle

*Cirsium arvense* (L.) scop.

- leaves ovate to lanceolate, margin with numerous triangular indentations and sharp spines



### Cleavers

*Galium aparine*

- square stem with stiff, downward pointing hairs (clings to clothing)
- true leaves in whorls of 4



### Cow cockle

*Saponaria vaccaria*

- leaves hairless, long, narrow, fleshy, keeled mid-vein
- leaves opposite, united at base

### Curled dock

*Rumex crispus*

- large distinct true leaves with veins prominent beneath
- papery sheath at base of leaf
- emerging leaf has sides tightly rolled under



### Dandelion

*Taraxacum officinale*

- cotyledons not fleshy, margins vary
- milk sap



### Diffuse knapweed

*Centaurea diffusa* lam.

- leaves alternate, divided into narrow segments, with short stiff hairs







### Milkweed

*Asclepias* spp.

- milky juice
- cotyledons have few granules above, shiny beneath
- true leaves in pairs, prominent mid-vein beneath, short hairs on margin
- leaves enlarge greatly as plant ages



### Narrow-leaved hawk's-beard

*Crepis tectorum*

- leaves not hairy
- distinct barbs on margin of true leaves



### Night-flowering catchfly

*Silene noctiflora*

- leaves in pairs, spoon-shaped, widen towards end before tapering to a point, hairs on margins



### Russian pigweed

*Axyris amaranthoides*

- first true leaves tapered toward both ends, prominent mid-vein



### Smartweeds and Lady's thumb

*Polygonum* spp.

- cotyledons attached at 180° from each other when viewed from above
- papery sheath circles the stem at base of leaf petiole



### Thyme-leaved spurge

*Euphorbia serpyllifolia*

- cotyledons and leaves pinkish underneath
- true leaves have indented edges around top of leaf, pinkish line in middle of leaf
- plants have white, milky sap





**White cockle**

*Lychnis alba*

- cotyledons often somewhat constricted at the tip
- hairs on margins of true leaves



**Wild buckwheat**

*Polygonum convolvulus*

- cotyledons attached at 120° to each other when viewed from above
- papery sheath at base of leaf petiole
- true leaves arrowhead shaped, longer than they are broad



**Yellow whitlow grass**

*Draba nemorosa L.*

- cotyledons very small
- forms rosette
- flowering quite early in the spring



**Bluebur**

*Lappula echinata*

- covered with stiff hairs
- mousy smell
- distinct central crease in true leaves



**Giant ragweed**

*Ambrosia trifida*

- leaves and stem rough to touch
- true leaves after first pair are distinctly 3-lobed

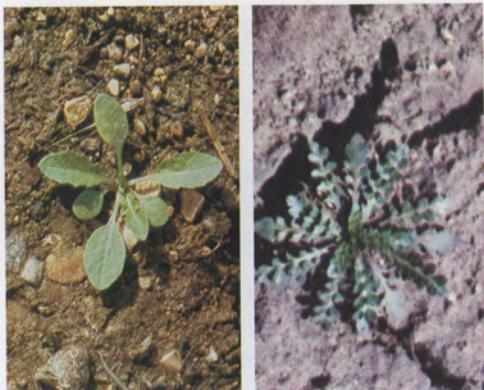


**Nodding thistle**

*Carduus nutans*

- cotyledons have broad white veins
- margins of true leaves prickly
- veins prominent on undersurface of true leaves
- rosette first year (biennial), silver-grey color





### Shepherd's-purse

*Capsella bursa-pastoris*

- forms a rosette
- upper surface of true leaves slightly hairy
- basal leaves narrow into a stalk



### Sow thistle

*Sonchus spp.*

- cotyledons fleshy
- milky sap
- soft prickles on later leaves



### Stinkweed

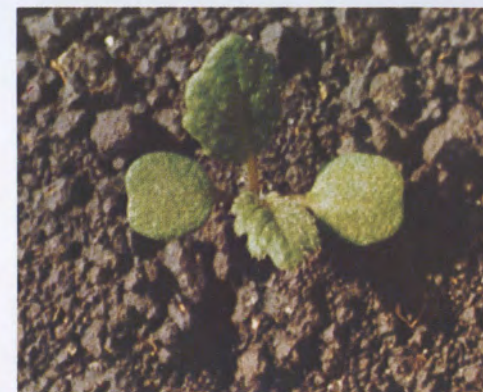
*Thlaspi arvense*

- hairless plant
- true leaves can be variable in shape, prominent and shiny veins beneath
- distinct odor especially when bruised
- often grows in rosette form

### Viper's bugloss

*Echium vulgare*

- covered with short, stiff hairs
- rosette first year (biennial)
- upper surface of leaf is rough or warty



### Dog mustard

*Erucastrum gallicum*

- cotyledons less notched than wild mustard
- germinates late



### False ragweed

*Iva xanthifolia*

- hairs on margins of cotyledons
- true leaves opposite
- fine whitish-hairs on leaf blades





### Field bindweed

*Convolvulus arvensis*

- no papery sheath at base of stem as in the buckwheat family
- prominent veins on undersurface of true leaves



### Wild mustard

*Sinapis arvensis*

- hairs on leaf and stem
- leaf shape is variable
- indented cotyledon tip



### Yellow toadflax

*Linaria vulgaris*

- cotyledons have a distinctive bump near tip
- first true leaves smooth and egg-shaped, later leaves longer and more slender
- no milky juice

### Round-leaved mallow

*Malva pusilla* = *M. rotundifolia*

- distinct cotyledons appear prominently veined with glossy surface
- leaves crinkly, indented margins, cup-shaped, long stalks



### Wild cranesbill

(Bicknell's geranium)

*Geranium bicknellii*

- cotyledons covered with granular bloom above, veins are depressed
- scattered, short hairs on leaves and leaf stalks



### American dragonhead

*Dracocephalum parviflorum*

- cotyledons rounded with backward pointing projections
- lower 2/3 of first true leaves round-toothed
- forms a rosette (biennial)







**Hemp nettle**  
*Galeopsis tetrahit*

- cotyledons distinctly notched
- true leaves are opposite and hairy
- square stem



**Tartary buckwheat**  
*Fagopyrum tataricum*

- cotyledons broad and notched
- papery sheath at base of leaf
- triangular leaves, as broad as long



**Stork's-bill**  
*Erodium cicutarium*

- three-lobed cotyledons
- finely divided true leaves



**Biennial wormwood**  
*Artemisia biennis*

- cotyledons united at base to form a small fleshy cup
- leaves grey-green and mealy, ridged veins on upper surface
- wormwood or sage scented when bruised



**Wild cucumber**  
*Echinocystis lobata*

- cotyledons thick green, a few veins evident
- leaves pale green rough on both sides





**COVERING NEW GROUND**  
Manitoba Agricultural Sustainability Initiative

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