

# Tall Hawkweed

*Pilosella piloselloides* (formerly *Hieracium piloselloides*)

ALBERTA REGULATORY STATUS:  
WEED CONTROL ACT  
NOXIOUS

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## Overview:

Tall hawkweed is a perennial forb in the Aster family native to Europe. It has fibrous roots and produces milky latex in its stems and leaves. Invasive hawkweeds were first detected in western Canada approximately 50 years ago.<sup>1</sup> It is regionally common in Alberta.

Recent taxonomic revisions have divided hawkweeds into two genera: *Pilosella* and *Hieracium*.<sup>1</sup> In Alberta, invasive hawkweeds belong to the genus *Pilosella*, while *Hieracium* includes both native and invasive species.<sup>1</sup>

Approximately half of the *Pilosella* species in Alberta produce stolons (above-ground runners), including meadow hawkweed, queendevil hawkweed, and orange hawkweed.<sup>1</sup> **Tall hawkweed does not have stolons.** *Pilosella* species typically form basal rosettes and have few, if any, well-developed stem leaves, in contrast to the *Hieracium* species that usually have well developed leaves along the stem.<sup>1</sup> In Alberta, invasive hawkweeds

in the *Pilosella* genus can generally be distinguished in the field by carefully examining the type and density of hairs on stems and leaves.<sup>2,3</sup> Genetic analyses may not reflect these visible differences, making morphology the most practical approach for ID.<sup>3</sup> See the [AISC's Quick Reference Guide to Invasive Hawkweed Species of Alberta](#) for more information on identifying species.

Tall hawkweed differs from some invasive *Pilosella* species in that it does not spread by (or have) stolons, instead reproducing by seed and vegetatively through rhizomes and occasional regrowth from root fragments.<sup>2</sup> *Pilosella* species produce wind-dispersed seeds. Most invasive hawkweeds can produce viable seed without pollination, allowing a single plant to establish a new infestation.<sup>2</sup>

Flower heads can continue to mature viable seed even after plants have been pulled, and seeds may remain viable in the soil for up to seven years.<sup>2</sup>

## Habitat:

Prefer well drained, coarse textured soils, low in organic matter.<sup>1</sup> Found in disturbed areas, open fields, mountain meadows, permanent pastures, along edges and in clearings in forest zones.<sup>1</sup>

## Identification:

**Stems:** Upright with single, erect stems 40-90cm tall that sometimes branch near the top.<sup>1</sup> Stems have **sparse simple hairs** and have a waxy feel.<sup>9</sup> **Stolons absent.**<sup>1</sup> Despite its name, plant height is not a reliable diagnostic feature of tall hawkweed.

**Leaves:** Basal leaves are long and narrow to oval or egg-shaped with mostly smooth edges (sometimes very finely toothed) and usually narrow gradually where they attach to the stem.<sup>2</sup> Upper leaf surfaces are mostly smooth with few or no hairs, sometimes limited to sparse long white hairs along the margins. Star-shaped hairs are absent. **The lower leaf surface is also smooth**, though a few longer white hairs may occur along the mid-

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vein.<sup>1</sup> Occasionally, 1–2 small leaves may be present on the lower stem.<sup>1,2</sup>

**Flowers:** Yellow flower heads are arranged in open, rounded clusters, typically with 11–20 heads.<sup>1</sup> The bracts surrounding each flower head often have yellow, gland-tipped hairs.<sup>2</sup>

**Seeds:** Seed heads are surrounded by small, hairy bracts (leaf-like parts at base of seed). Seeds are ribbed, with dirty white to tawny fluffy tufts (like dandelions).<sup>1,2</sup>

**Lookalike species:** Queendevil hawkweed (*P. praealta*): Most similar to tall hawkweed, with some star shaped hairs on the underside of the leaves, shorter leaves and stolons present, in comparison with tall hawkweed. Yellowdevil hawkweed (*P. glomerata*): Leaves appear hairless but are rough due to the presence of short white and star-shaped hairs. Stolons absent. Orange hawkweed (*P. aurantiaca*): distinguished by orange flowers, stem and leaf hairs like meadow. Stolons present. Meadow hawkweed (*P. caespitosa*): Stem and leaves are covered with star-shaped, simple and gland-tipped hairs, similar to orange. Stolons present. *Hieracium* spp. (native and invasive hawkweed species): typically have well-developed stem leaves. Stolons absent. Hawksbeard (*Crepis* spp.): differ in leaf shape and structure.

## Impacts:

Hawkweeds' rapid growth and ability to exploit disturbed ground allow them to spread quickly and dominate sites. Even small, easily overlooked patches can develop into persistent infestations that are difficult to control. Dense mats can form, displacing native vegetation and overtaking yards, gardens, pastures and natural areas. Some studies suggest that invasive hawkweeds may also release chemicals into the soil that inhibit the growth of

surrounding plants (allelopathy),<sup>2</sup> which may further contribute to their ability to dominate sites.

In BC, invasive hawkweeds were projected to cause up to \$60 million per year in economic damages by 2020 if left unmanaged, driven by impacts to forage production, recreation, biodiversity, and human health.<sup>5</sup>

## Prevention:

Reduce the risk of establishment by maintaining healthy, competitive plant communities and regularly monitoring high-risk areas, including properly identifying unknown species before they spread. Prevent introduction and movement by working from clean sites to infested sites, cleaning equipment and gear between locations, and minimizing soil disturbance. Use weed-free products where available, avoid generic wildflower seed mixes, and obtain seed certificates for large-scale seeding to assess for potential contaminants.

## Control:

Effective control of invasive hawkweeds requires repeated treatment and ongoing monitoring, using an integrated approach to address both seed production and aggressive vegetative spread. Plants should be treated before flowering to prevent seed production. If flowers or buds are present, they should be removed and properly disposed of to prevent viable seed development. Root systems must be fully removed or effectively controlled to prevent regrowth from fragments. Pulled material must be bagged and disposed of in a landfill or incinerated, as plants can continue to produce viable seed after removal. Maintaining healthy, competitive vegetation helps reduce reinfestation, while regular monitoring is essential to detect regrowth and new seedlings from the seed bank. Cleaning

equipment is also key to prevent the spread of seeds and root fragments.

**Grazing:** Can be an effective IPM tool in some contexts; however, due to limited information on plant response and grazing parameters, it is not currently recommended for invasive hawkweeds, including tall hawkweed.<sup>6</sup>

**Mechanical:** Mowing before flowering will prevent seed production of taller plants but will not inhibit vegetative reproduction. Hand digging of small infestations, ensuring all roots are removed, may be effective. Root fragments can generate new plants; therefore, any mechanical tilling or cultivation is not recommended. If manually removed while flowering, hawkweeds may still produce viable seed, so timing and disposal are important considerations to prevent seed dispersal.

**Cultural:** Long-term management of hawkweeds requires maintaining healthy plant communities. Fertilizing and seeding desirable vegetation can help outcompete hawkweeds.<sup>1</sup> Use caution when sourcing seed for revegetation, reviewing the seed analysis certificate for the lot can help reduce risk of contamination.

**Chemical:** Registered herbicides for managing hawkweeds in Canada may include products containing active ingredients such as 2,4-D, acetic acid, aminopyralid, aminocyclopyrachlor, chlorsulfuron, dicamba, florypyrauxifen, glyphosate, hexazinone, MCPA, metsulfuronmethyl, pelargonic acid, and picloram.<sup>7</sup> Some herbicide products list specific hawkweed species on their labels, always check the product label to confirm that the herbicide is registered for use on the target plant in Canada. Consult your local Agricultural Fieldman or Certified Pesticide Dispenser for more information.

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**Biological:** The stolon-tip gall wasp (*Aulacidea subterminalis*) was first released in BC in 2011.<sup>8</sup> Establishment has been confirmed only on whiplash hawkweed (*Pilosella flagellaris*), where populations are spreading within large infestations.<sup>8</sup> The root-feeding hoverfly (*Cheilosia urbana*) has also been released in Canada to target several invasive hawkweed species, including tall hawkweed; however, establishment has not yet been confirmed.<sup>8</sup> Research is ongoing to identify and evaluate additional potential biological control agents for invasive hawkweeds.

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