CLIMATE CHANGE
ADAPTATION PROGRAM

# Agricultural Alert Species for the Cariboo Region

## Fact Sheet

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Quackgrass; S. Dewey, Bugwood.org

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**FACTSHEET**
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# Agricultural Alert Species for the Cariboo Region

Agriculture is an important sector of the regional economy in the Cariboo-Chilcotin, with over a thousand farms in the region. With a changing climate, agricultural operations are expected to experience increased temperatures, changes in ecology and changes in agricultural pest dynamics. New and emerging invasive species may require new management approaches. A key strategy in managing new invasive species is early detection and rapid response. The following invasive species have major detrimental impacts on agricultural production, and climate change may enhance their spread. It is important to report any sightings to help stop their spread and maintain strong management practices to protect agricultural crops, soil, and rangeland. Use the Report Invasives app or contact ISCBC if you spot one of these invasive species.

## True armyworm *(Mythimna unipuncta)*

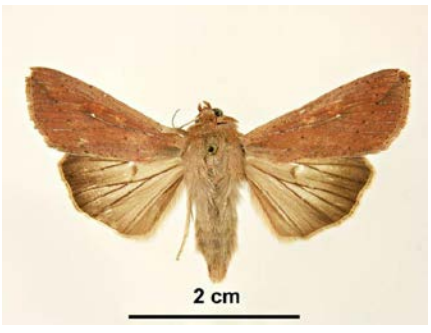
**About:** The True armyworm is an agricultural invasive species that has the potential to migrate from southern United States and Mexico to Canada during the warm summer months via its adult moth form. Not yet present in the Cariboo region, but have been observed in southwestern British Columbia causing significant crop damage. The larvae damage grass, hay, cereal, and corn crops by eating the leaves.

**Identification:** Larvae have many neutral coloured stripes along the length of their brown body, with a net design on the head. The caterpillars turn black when fully mature. Adult moths are about 2 cm long with brown bodies and a small white dot on each wing.

**Prevention:** If possible, modify harvest plans to harvest earlier in the season. Cut or graze earlier and use fertilizer to encourage regrowth in hay fields. Mow grass to decrease hosts and food sources for larvae.

R. Smith, Bugwood.org

F. Peairs, Bugwood.org



## Tall yellow buttercup *(Ranunculus acris)*


J. Carina, Bugwood.org


D. Laubhann

**About:** This plant is a perennial invasive species that only spreads by seeds. Each plant can produce around 250 seeds which are viable for 2-4 years. When eaten by livestock, the enzymes in the animal break down the plant's sap into a compound called protoanemonin which is toxic. It can irritate skin, cause pain, paralysis, or death to grazing animals. Originally from Eurasia, this introduced plant is widely distributed throughout British Columbia and the Cariboo region.

**Identification:** Tall yellow buttercup grows to be 90 cm tall. Stems are hollow, sometimes hairy, and branched in the upper part of the plant. Lower leaves are 3-8 cm long and deeply divided in 3-5 lobes, in a palm arrangement. Upper leaves are hairier and smaller and divided into 3-4 narrow segments. The amount and depth of leaf lobes can vary. Flowers are yellow, round, waxy, and have 5 petals. Each petal is about 1 cm long. Seeds are tiny, brown/black, and prickly. It sets seed in early fall.

**Prevention:** Use certified weed-free seed and grass mixes. Maintain a dense and diverse forage stand in the pasture to provide competition and resist invasion. Hand digging plants is effective for small populations – but make sure to wear gloves as the toxin in the plant can cause blistering and redness. Mowing prior to seed is effective in reducing the spread.

## Western corn rootworm
### *(Diabrotica virgifera)*

**About:** The western corn rootworm cause damage to corn crops by larvae eating corn roots and the adult beetle eating corn foliage and silks. It is the greatest contributor to economic loss for corn growers across North America. It was first found in the Fraser Valley in 2016. Not known currently in the Cariboo region, but it has potential to move into any corn growing region. They can also damage squash and melon crops by eating the flowers.

**Identification:** Eggs overwinter in the soil and hatch in the spring. Larvae are white, 3-15 mm long, with a brown head, dark patch at the end of their abdomen, and 6 small legs. The larval stage lasts for around 4-6 weeks. Adult beetles are about 6 mm long, yellow and black with hard shells. Adult females have 3 long black stripes and yellow abdomens while adult males have a black patch instead of stripes.

**Prevention:** Adult beetles are very active and will fly away or drop if disturbed. Look for larvae in soil and underneath corn plant roots and check roots for any feeding damage such as small boring holes. Inspect corn plants in different areas of the field, as the populations may disperse. If many beetles


J. Obermeyer

are found, consider rotating the field to a different crop for the next 2 years to ensure the Western corn rootworm dies of starvation. Plant as early as possible to help corn plants withstand larvae feeding. Inquire about corn hybrids that are resistant to Western corn rootworm.


G. Graham


B. Ackley, Bugwood.org


G. Graham


S. Dewey, Bugwood.org

## Quackgrass *(Elymus repens)*

**About:** This invasive grass is widespread throughout the Cariboo region. It competes with many crops, including pastures and hayfields. It causes yield losses in corn, wheat, soybeans, and other cereal crops. Quackgrass arrived in North America from Europe and Western Asia as a weed in cereal crops. Each Quackgrass stem can produce up to 400 seeds which remain viable for up to 4 years, and it also reproduces through rhizomes. It is a very competitive plant and can tolerate droughts. It can also act as a host for diseases such as ergot and leaf rusts.

**Identification:** Stems are green-white and can grow up to 1m tall. Leaves are 15-40 cm long. Flower spikes are 10-30 cm long with 3-8 florets per spikelet. The seeds are oval shaped, yellow-brown, and pointed at both ends.

**Prevention:** Mechanical control is not effective due to the rhizomatic reproduction. Some chemical treatments and thick mulching on the soil surface may be effective.

W. Brown, Bugwood.org

## Phytophthora root rot
### *(Phytophthora medicaginis)*

**About:** *P. medicaginis* is an agricultural pathogen which targets alfalfa, chickpea, and carrot plants. It can be soil borne or water borne – the pathogen invades when there is a flooding period, which allows the transportation of zoospores. It is found in areas with poor drainage and creates root rot which kills the plant. Spores can survive up to 3.5 years in the soil and can be spread by tilling and machinery. It is found in eastern and northern subregions of the Cariboo.

**Identification:** Yellow-brown patches form on the roots and the root rot causes yellow, spindly plants. Can appear as black or red-brown root lesions.

**Prevention:** It is recommended to plant resistant cultivars. Monitor crop fields for signs of root rot. Ensure good drainage to avoid flooding and over-saturation of soil.

## References/Links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Additional Contact Info