

Timber milk-vetch in the Cariboo

Timber milk-vetch (*Astragalus miser* var. *serotinus*, “TMV”) is a long-lived perennial forage that has caused sickness and death in cattle, sheep and horses. TMV is native to those higher grasslands and open forests in Southern Interior BC that are prone to wild fires, at elevations from 700 m to 1700 m⁴. It is common in parts of the Cariboo, where some stands have been used in cattle trials⁸. The nectar is toxic to domestic honeybees⁵.



TMV at early bloom stage, beside Lac le Jeune Rd, approx. 1320m elevation

TMV belongs to the pea family. Flowers are like tiny elongate sweet peas, ranging from pure white through shades of pinkish lilac; pods droop and there are no tendrils³.

Toxin content is highest just before bloom⁴. In cattle, 4 kg of fresh green stems may kill a mature animal (500 kg)³. On fescue grassland ranges in good condition, cattle avoided it in favour of other forages⁷. In contrast, they preferred it in lodgepole pine forest range where it grew with pinegrass, which is less palatable. In lodgepole pine, toxicity was highest in the most open stands⁶. As the TMV stems bleach and dry out in the summer their toxicity drops, but if summer rains allow continued growth, toxicity can increase again⁹.

A hot fire can destroy all stems plus the top of the tap root, but TMV has adapted to fire:

1. Root sprouts produce top growth in the year of the fire and the plant can produce abundant seed in the year following.
2. The pods twist open explosively to distribute seed widely, so a sparse population in a forest or grassland can be transformed into a significant stand of TMV after a fire.

After tree loss due to such events as logging, disease, or insect kill, TMV evidently does not increase because it cannot compete with other ground cover species. It does not spread into cropland but it often establishes well on roadsides.

Certain bacteria in the cow stomach (rumen) can detoxify TMV, and rumenal detoxification is more effective if the cow has adequate dietary protein⁸. Native consumers such as grasshoppers¹ and evidently bighorn sheep¹⁰ are resistant. Cattle raised on TMV-containing range appear to have greater tolerance to it than ones originating from TMV-free areas⁸. It has been observed in cattle elsewhere that resistance can be shared without contact through transfer of microbes². There is no research on whether ranchers can protect new animals by holding them close to experienced ones before turnout on TMV.

Historical losses have largely been due to heavy range use.

Problems can be reduced by identifying TMV patches and avoiding overgrazing in these areas. Care should be taken when trailing animals and introducing inexperienced ones, those not previously exposed to TMV.

Literature

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