

Defoliation of *Cirsium vulgare* and *Cirsium arvense* rosettes by goats

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Summary Goats are generally thought to graze only flowering thistles, usually avoiding vegetative rosettes. In our previous grazing trials (Beskow 2001), rosettes of both *Cirsium vulgare* (Savi) Ten. and *Cirsium arvense* (L.) Scop. were occasionally heavily grazed, and a trial was conducted to determine if this defoliation was influenced by surrounding pasture conditions.

The defoliation of rosettes of both *C. vulgare* and *C. arvense* was determined by measuring the space volume (basal area × height) of 40 plants of each species selected at random in two 0.1 ha paddocks of perennial ryegrass/white clover near Palmerston North, New Zealand. Before grazing, the pasture in a band 20 cm wide around the plants was either clipped to ground level or left undisturbed. Each paddock was grazed for three days by 41 wether goats in January 2000, with pasture being grazed from an initial herbage mass of 2550 kg DM ha⁻¹ (21 cm high) down to 1700 kg DM ha⁻¹ (10 cm high). The goats were mainly cashmere and had an average weight of 32 kg LW.

Exposed *C. vulgare* rosettes had 75% ± 6.8 SE of their volume eaten, compared with 3% ± 0.2 SE when

surrounding vegetation was not clipped. Comparable values for *C. arvense* were 97% ± 8.8 SE and 5% ± 0.4 SE.

Goats approached exposed *C. arvense* rosettes sideways with their heads parallel to the ground, apparently to minimise contact with the tips of spines. With exposed *C. vulgare*, goats were often seen using their horns to rearrange the leaves first, allowing better access to leaves from the side.

The results suggest that goats would give better control of vegetative thistles if other livestock classes such as sheep and cattle are used to graze pasture down before goats are used to graze the weeds.

Keywords Goats, pasture weeds, thistles, *Cirsium arvense*, *Cirsium vulgare*.

REFERENCE

Beskow, W.B. (2001). Integration of goats into sheep and cattle grazing systems as a permanent weed control tool. PhD thesis, Massey University, New Zealand.