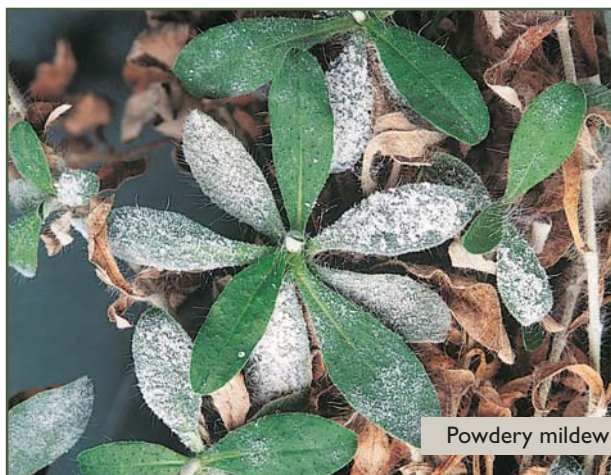


HIERACIUM RUST

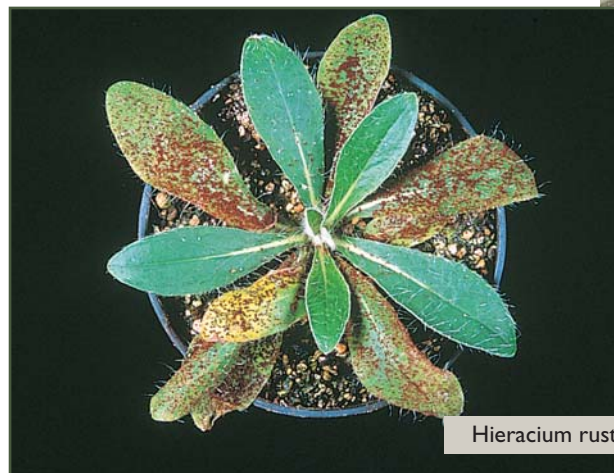
Puccinia hieracii var. *piloselloidarum*

The history of hieracium rust in New Zealand

The hieracium rust was first noticed here in 1995 on mouse-ear hawkweed (*Hieracium pilosella*) plants collected from Molesworth Station. It is not known how the rust came to be established in New Zealand. At the time of the discovery, researchers were studying the rust in Europe to see if it would be suitable to import as a classical biological control agent. Subsequent studies showed that mouse-ear hawkweed populations vary in their susceptibility to the rust, and many are resistant to this particular strain. Another two strains of the rust have since been imported from Ireland to improve the level of attack. As a result of natural dispersal by wind and human intervention, the rust now occurs throughout all hawkweed-infested parts of the country, so no further effort is required to spread it around.



Powdery mildew



Hieracium rust

How would I find hieracium rust?

It may be possible to see rust symptoms at any time of the year. If you are searching in autumn or spring, then look for rusty-coloured spores on the upper surface of the leaves (pustules containing spores develop inside the leaves and eventually burst out through the top). If you are looking in summer, then keep an eye out for small black pock marks, which are the scars made by the pustules. The first sign of infection can be yellow flecks on the leaves.

Another pathogen that you are likely to see on mouse-ear hawkweed is a powdery mildew (*Erysiphe cichoracearum*), which attacks many members of the Asteraceae (daisy) family. You are unlikely to confuse this mildew with hieracium rust because infected leaves have a powdery whitish appearance and there is no black scarring. After heavy mildew attack the leaves may become pale red in colour, but this can also happen anytime the plant is under stress.



HIERACIUM

How does hieracium rust damage hawkweeds?

The rust feeds and grows inside the leaves. It can only develop on living tissue (i.e. it is an obligate parasite). A field study has suggested that the growth of infested plants may be suppressed by around 10-20%. The fungus performs best under moist conditions, but its impact can be most severe when infection is followed by drought.

Will hieracium rust attack other plants?

No, it is extremely unlikely that hieracium rust will damage anything other than mouse-ear hawkweed. Even other closely related hawkweeds are unlikely to be attacked. Two other varieties of this rust *P. hieracii* var. *hieracii* and *P. hieracii* var. *hypochoeridis* are also present in New Zealand. They are found on a range of hosts including dandelion, catsear, and chicory.

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