Growth and vegetative reproduction of Chilean flame creeper (*Tropaeolum speciosum*) in two diverse climates of New Zealand

**Background**
- Chilean flame creeper is a summer active perennial vine growing to 5 m or more.
- It has an extensive rhizomatous root system and has proved very difficult to control with herbicides.
- Both the above and below ground stems are soft, without any tough outer skin or bark.
- This study was designed to observe the rhizome growth habit of Chilean flame creeper at two different sites.

**Methods**
- Fresh rhizomes collected from Mangaweka.
- Transplanted into 50 L tubs filled with potting mix.
- Four replicates harvested at regular intervals through the growing season.
- Trial replicated at two sites.
- Emergent growth at 2 months (Waikato)

**Objective**
- To understand why it is difficult to control this species with foliar herbicides and if location may affect the growth of Chilean flame creeper.

**Results**

**Waikato**
- Shoot emergence at the Southland site was delayed.
- Early rhizome development at the Southland site was less.

**Southland**
- At 4 months growth the Waikato plants averaged 6.98 cm of rhizome with nine emerged shoots while Southland plants averaged 3.43 cm of rhizome with three emerged shoots. At this time the Waikato plants had well developed root systems with some quaternary rhizome development.
- By 5 months plants from the Southland site had similar DM and rhizome development to Waikato plants at only 4 months old.
- Many of the original root fragments had decayed after 12 months and of those remaining, none emerged in the second year.

**Conclusions**
- Secondary rhizomes were often initiated before emergence of the primary rhizomes. This is possibly why this species is difficult to control as herbicides appear to not translocate into the secondary rhizomes.
- The growth of Chilean flame creeper from Waikato and Southland was markedly different.
- It appears that most, if not all, the rhizomes are replaced annually.