

## **OROBANCHE SPP. – PARASITIC WEED THREATS TO THE PULSE, OILSEED AND VEGETABLE INDUSTRIES**

Ms Sandra G. Lloyd<sup>1</sup> and Prof. Daniel M. Joel<sup>2</sup>

<sup>1</sup>Agriculture Western Australia,

Locked Bag 4, Bentley Delivery Centre, WA 6983, Australia

<sup>2</sup>Newe-Ya'ar Research Center, ARO, PO Box 1021, Ramat-Yishay 30095, Israel

The *Orobanche* spp., commonly known as broomrapes, are parasitic plants that attack the roots of a considerable number of crops including pulses, pasture legumes, oilseeds and a wide range of vegetables. *Orobanche* spp. were identified as threats to these industries under the Grain Guard and Hort Guard initiatives.

*Orobanche* spp. deprive their hosts of nutrients and water. The relationship with the host varies from a benign partner to causing significant yield loss or death. This depends on various factors including the species or subspecies/race of *Orobanche*, degree of parasitization, time of sowing, and host susceptibility.

Of the numerous *Orobanche* spp. worldwide, five are particularly weedy and cause heavy damage in Mediterranean countries, Europe, Asia and America. These are *O. aegyptiaca*, *O. cernua* var. *cernua*, *O. crenata*, *O. cumana* and *O. ramosa*. Major crops will be seriously affected if these weedy *Orobanche* enter the country and become established. One of these (*O. ramosa*) has recently been recorded in South Australia and is the subject of an eradication campaign.

The only effective method to control *Orobanche* is methyl bromide fumigation. Some herbicides are effective, but *Orobanche* spp. are already reported to develop herbicide resistance. They also overcome *Orobanche* resistance in crops. A single *Orobanche* plant can produce up to 500,000 seeds, with dormancy of up to 57 years recorded.

All *Orobanche* spp. are AQIS prohibited imports but the seeds are minute, and could enter the country undetected. The seeds can be spread by contaminated soil, produce, machinery, livestock or clothing. If these parasites become established, even in small areas, all Australian export markets could be affected as many of our trading partners prohibit *Orobanche* spp.

Vigilance is necessary but, to compound the problem, two other *Orobanche* spp. are naturalised in Australia. *O. cernua* var. *australiana* is a native not recorded as attacking crops. *O. minor* is a common minor weed in pastures and gardens.