

### Control of *Cuscuta chinensis* L. with hot water treatments

*Cuscuta chinensis* is an angiosperm holoparasite grows on most herbaceous plants as well on many crops. Infections up to 5 m<sup>2</sup> patches of *Centella asiatica* (Gotukola) with *Cuscuta chinensis* had been reported from Puttalam and Gampaha Districts recently. Although the parasite is effectively controlled with herbicide glyphosate any residual effects have not been estimated. As the host is a leafy vegetable, a non chemical method was needed to control the parasite. Results of previous trials conducted during 1998 - 1999 revealed that the parasite was sensitive to relatively high temperatures.

Five plants of the host and 5 stem cuttings (15 cm long) of the parasite were used to establish this association in each pot. Three different water temperatures (0 °C, 60 °C and 100 °C) were used with a control (water at environmental temperature) on the host and parasite grown in pots under green house at the Regional Agricultural Research Centre, Makandura, during Maha 1998/99. Water at 100 °C was able to kill the parasite.

In the field level, maintenance of water at 100 °C was not practicable, but water remained at 80 °C for a considerable time. Therefore water at 80 °C, 60 °C and environmental temperature was used as treatments in the field experiments conducted in Maha 1999/ 2000 and Yala 2000. Twenty five host plants were planted in 1 m x 1 m field plots and ten stem cuttings (15 cm long) of the parasite were entwined on the host to establish the host/parasite association at the same location in both seasons. Both green house and field experiments were conducted according to a randomized complete block design with three replicates.

There was no harmful effect of water at 0 °C for the both parasite and the host in Maha 1998/99. But the parasite and the host were slightly scorched with water at 60 °C and both plants were scorched with water at 100 °C in the same seasons. In Maha 1999/2000 and Yala 2000, the mortality percentages of the host were 100 and 95 respectively. The mortality % of the parasite were 100 with water at 80 °C in both Maha 1999/2000 and Yala 2000, while the recovery of the host was 90% - 95%. *Cuscuta chinensis* grown parasitically on *Centella asiatica* (Gotukola) can be controlled with water at 80 °C avoiding the use of chemicals.