Parasitic potential-host range of Cuscuta sp. and its impact on *Allium cepa* L. grown in Jaffna

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Abstract

Cuscuta sp. is a familiarized medicinal plant for centuries but at times it has been reported parasitizing economically important crops like onion (*Allium cepa* L.) and chilli (*Capsicum annum* L). Due to the risk posed by this holoparasitic weed on cultivated crops, a field based research study was carried out with the objective of measuring parasitic potentiality of *Cuscuta* sp. through identifying minimum length of infective unit as tendril and its host searching ability, estimating biomass loss of *A. cepa* and screening of host range with selected vegetable crops and medicinal plants. Treatments were set up to measure the parasitic potential of *Cuscuta* sp. on different ages of *A. cepa* at two weeks and four weeks. Results revealed that minimum of five cm long *Cuscuta* tendril have the capability to initiate infection. Its tendrils have the potential to grow towards its host, *A. cepa* up to 60 cm distance. Therefore, spacing between two adjacent *A. cepa* plots more than 60 cm can be practicable to reduce the spreading of *Cuscuta* sp. At the time of harvesting, biomass loss of leaves and bulbs in two and four weeks old parasitized *A. cepa* were 58.4%, 14.5% and 89.1%, 46%, respectively. Dry weights of *Cuscuta* sp. were not significantly different at all the weeks. Number of leaves, shoot/root length ratio except number of bulbs, were significantly differed with age of *A. cepa*. Only two weeks old parasitized *A. cepa* yielded small size bulbs. Parasitic potential of *Cuscuta* sp. was not depend on the age of *A. cepa*. Results of host-parasite interactions showed that *Brassica oleraceae* and *Raphanus sativus* were the non-host crops of *Cuscuta* sp. Intercropping and crop rotation with non-host crops are the best alternatives in the crop fields suspected with infection of *Cuscuta* spp.