Regain *O.crenata* infested soils for faba bean production

Did you know? Faba Bean crisis production could be greatly minimized

Faba bean Vicia faba L. is a primary source of protein in the diet of masses in Egypt. The beans are excellent source for both protein and energy for cattle and sheep. Broomrape, *Orobanche crenata* Forsk (Orobanchaceae), present great meanness parasitic weed to some crops in Egypt including faba bean. Losses *of O.crenata* parasitism may reach 40 to 100 %. Egyptian farmers were forced to abandon growing faba bean crops due to *O.crenata* heavy soil infestation. Broomrape is difficult to control mainly on account of its fecundity and the long-term viability of the Orobanche seeds in the soil. Non chemical control methods were used to reduce the seed bank of the parasitic weed in the infested soils. The effect of intercropping (fenugreek, radish and flax) using the two faba bean cultivars on emergence of the broomrape spikes was studied. Intercropping flax or fenugreek, caused a significant reduction in the infestation levels of *O.crenata* and increased the faba bean yield. The reduction seems to be related to the reduced seed germination and low numbers of underground Orobanche attachments, which may have been as a result of allelochemicals released by intercropped plant roots. Using resistant faba bean cultivars intercropped with fenugreek or flax is very promising trend that generally combines both good yield and low number of emerged spikes. The obtained results suggest that intercropping with flax or fenugreek can be used in an integrated strategy management to reduce broomrape infestation. Also, the effect of sowing dates on both degree of infection by *O. crenata* and the pod yield of faba bean using faba bean cultivars in naturally Orobanche infested soil was studied.

The results demonstrated that, late sowing reduced significantly the number of emerged *O.crenata* shoots. Pod yield increased significantly on late sowing especially for the resistant cultivar which produces much higher pod yield than the susceptible cultivar .So, combining both resistant cultivar with late sowing could be a useful tool as a part of an integrated strategy to control *O. crenata* in faba bean fields. Also, mass release of the agromized fly *Phytomyza orobanchia* Kalt on reducing production *of O.crenata*. seeds .was particularly suitable for biological control of broomrape due to its marked selectivity and its high efficiency. The total seed output can be reduced by half in the field. Biological control by *P.orobanchia* using inundative releases of the fly could be applied and production of viable broomrape seeds could be significantly reduced .

Contact

Esmat M. Hegazi
eshegazi@Hotmail.com