A MANAGEMENT PACKAGE FOR BEAN FLY IN GRAIN LEGUMES

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Cowpea, green gram, black gram and soya beans are the major grain legumes cultivated in the Dry Zone of Sri Lanka. The mean annual rainfall in the Dry Zone is 1500 mm with 400 mm experienced in the Yala season. Due to their low water requirement grain legumes could be grown successfully in the dry zone during the Yala season. However, yield losses due to pests and diseases is a major production constraint. Bean fly is a major pest in grain legumes, in this area.

Bean fly Ophiomyia phaseoli (Trion) (Diptera: Agromyzidae) is tiny, black and about 2 mm long. It lays slender white eggs singly in holes made on the upper surface of young leaves, especially near the petiole end of the leaf. The larva of this pest is a small, white, maggot. It bores down inside the stem and feeds on the stem just above the ground level. The leaves often turn yellow, giving the plant a poor appearance, as a result of the damage to the stem where the larvae had been feeding. The barrel shaped pupae are dark brown and about 3 mm long. The total life cycle is 2-3 weeks.

At present the recommendation of Department of Agriculture to control bean fly is to use oxydemeton methyl, formulation, monocrotophos, or omethoate at 7 (DAE) days after seedling emergence. These insecticides are highly toxic and polute the environment. An integrated approach is adviced

currently for pest management because of its safety and cheapness in pest management.

Out of the grain legumes, cow pea, green gram, black gram, and soya beans are in the decending order of susceplibility to the pest. Therefore, it is important to pay more attention to protect cowpea from this pest because of its high susceptibility.

It has been reported that bean fly population tends to be high in the second and third week of May. Therefore, beanfly damage could be minimized to a great extend by planting cowpea/green gram with the first rains of the Yala season during the period from end of March to early April. If the cultivation is delayed resistant varieties such as sudumung can be used. The infected crop appears yellow two weeks after emergence of seedlings if the infestation is high. Earthing up the seedlings at this time, helps to form advantitious roots useful for the recovery of plants, from bean fly damage. It has been reported that there are six pupal parasites of the bean fly in Sri Lanka. These parasites are useful to keep the pest population at a low level. Seed treatment method can be adopted if a susceptible variety is cultivated in the late Yala season. Soaking the seeds in a solution of monocrotophos (1 ml of monocrotophos per 1 liltre of water) or treating with Carbosulfan at the rate of 2 g per 100 g of seeds are two such methods. Integration of the methods mentioned above would help to keep the pest population low, and thereby increase the yield of grain legume crops.