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STRATEGIC MEASURES FOR THE CONTROL OF PHANEROGAMATIC PARASITE *STRIGA*

S. Dilip Kumar Reddy[1], G. Naveen Kumar[2], Kesamreddy Lokeshwar [3] and Nishanth, M. [4]

Introduction:

On an average annually, parasitic weeds cause severe yield loss. Among them, *Striga* is the common parasitic weed in the cereals in India. *Striga* spp (witch weed), a root parasitic flowering plant, causing severe constraint to crop production. *Striga* are generally native to semi-arid, tropical areas of Africa but have recorded in more than 40 countries (Ejela, 2007; Vasey *et al.*, 2005)

The word *Striga* is derived from Latin which means "witch". *Striga* is known as witch weed as the crop plants attacked by *Striga* shows stunted growth. It attacks crops like sorghum, maize, pearl millet. It is known as obligate hemi-parasite as it takes water, carbohydrates and nutrients from the host through the roots.

Strategic methods for control of S*triga*:

Cultural and mechanical methods:

Cultural practices like crop rotation, intercropping, soil management, water management, hand weeding, transplanting reduces the *Striga* infestation. Some practices are not only destruction of *Striga* seed bank in the soil but also improves the soil fertility. These practices not only support the crop growth and affect the germination of *Striga* seed germination.

However these practices have limited success because these are more economical and will become burden for small farmers.

i. Hand weeding:

Hand weeding is the most commonly used practice by the farmers. Generally it is not recommended until 2-3 weeks after the weed plant begins to flower to prevent seed set and seed dispersal. It is not economic when the infestation is high as it requires more labour and increases in cost of cultivation. But it is practical, at a low level of infestation, before the seed set

ii. Crop rotation:

Rotating of the susceptible host with non-host crop can reduce the *Striga* weed population in the soil. The practical limitation of this technique is required for more than three years. Rotating the infested maize, sorghum to pulses or groundnut is effective. It reduces the weed seed population and in turns

S. Dilip Kumar Reddy[1], G. Naveen Kumar[2], Kesamreddy Lokeshwar [3] and Nishanth, M. [4]
[1] Dept. of Plant Pathology, College of Agriculture, Tadipatri, Andhra Pradesh
[2] Dept. of Agronomy, SV Agriculture College, ANGRAU, Andhra Pradesh
[3] Dept. of Agronomy, Tamil Nadu Agricultural University, Tamil Nadu
[4] Dept. of Plant Pathology, College of Agriculture, SVPUAT, Meerut, Uttar Pradesh

increase the soil nitrogen and soil organic carbon.

iii. Intercropping:

Intercropping is a low-cost technology, controls the *Striga* and enhances the soil fertility. Growing of sorghum in association with cow pea is effective against *S. hermonthica.* According to Khan *et al.* (2007), intercropping different legumes with maize and sorghum reduces *Striga* but does not eliminate the weed.

iv. Soil fertility:

Striga is very severe in low fertile soil and the infestation decreases if mineral nutrients especially N and P, are applied in adequate quantities.

High doses of nitrogen fertilizer application is more beneficial for crop growth, in turn its delays *Striga* emergence.

Biological control:

Biological method gaining more popularity throughout the world as it is beneficial and environmental safe. On the other hand, the major disadvantage of biological method is it takes long time to effect and high initial investment. Meanwhile, the farmers are attracting towards the chemical advertisements.

With the biological method, can reduce the establishment of weed population to a level below the economic threshold. Biological control can be done with the help of natural enemies such as herbivorous insects, microorganisms and smother plants. *S.hermonthica* can be controlled biologically by using *F.oxysporum.*

Chemical methods:

Striga can be controlled chemically by germination stimulants such as ethylene which induces the *Striga* seed germination in the absence of suitable host and dies due to starvation in the soil, pre-emergence herbicides (Imazapyr) and post emergence herbicides like 2,4-D.

Host plant resistance:

Host plant resistance is one of the smartest method for controlling the *Striga* weed.it is the economic, effective and feasible method. Growing of Striga resistant varieties is the best method for the control of *Striga* weeds and reduces the yield losses.

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