

Junior Fellowship for Dr. Tilal Sayed Abdelhalim: Sorghum genotypes, tillage systems and cover crops for promotion mycorrhiza responsiveness and Striga hermonthica management

Initiative: Wissen für morgen – Kooperative Forschungsvorhaben im subsaharischen Afrika (beendet)

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Striga hermonthica is a major constraint to cereal production in sub-Saharan Africa. It attacks sorghum, millet, maize and rice which constitute the major food crops in the region. The late discovery that the parasite attacks and reduces wheat yield is rather alarming. The Striga problem is accentuated by drought, fitful rains and poor soil fertility. At present more than 21 million hectares of arable land is infested by the parasite. On the whole, the parasite is considered a threat to the livelihood of more than 300 million people in Africa, where the loss in cereal yield is estimated to be around 4.1 million MT, which is about the amount of grains Africa receives annually as food aid. In Sudan sorghum and millet, the major hosts of the parasite, are cultivated in an area of about 8 million mostly rainfed. About 20% of this area is infested by the parasite. Yield losses are considered to be between 15-65% although total crop failure is not uncommon under heavy infestation. The parasite is a copious seed producer. The seeds, endowed with prolonged dormancy, only germinate in response to a germination stimulant exuded by host and some non-host roots. Following germination the parasite attached to the host roots and remains subterranean for 6-8 weeks. During the subterranean period the parasite exhibits most of its damage. The parasite is more of a problem under low-input subsistent farming where expensive methods of control Viz: fertilizers and herbicides cannot be adopted. Therefore, the need for a simple less costly method of control is imperative and inoculation with mycorrhiza to cater for soil fertility may provide basis for sustainable agricultural production.

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