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Potential of peptone broth to inhibit Striga hermonthica germination in pot experiments

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Abstract

Sorghum bicolor (L.) Moench, Poaceae is an important food crop in Africa, South Asia and Central America. It is the fifth major cereal crop in the world. Sudan produces 2.6 million tons. Striga sp. placed in the Orobanchaceae, are endemic obligate root parasitic weeds on the staple food of the poor in sub-Saharan Africa. The grain area in Africa, actually, infested by Striga, is estimated to be about 21 million hectares. In order to determine the ability of peptone broth to inhibit seeds germination of the parasitic weed Striga hermonthica in pot experiment. The first experiment performed to examine the suitability of peptone broth for irrigation of the planted sorghum grains, the second one performed to examine effect of peptone broth irrigation of Striga seed germination. In the bioassay of Striga seeds, the control treatment, which use water show Striga seed germination of 100%. Peptone which added to Striga caused 0% Striga seed germination compared with the result obtained with the control. Such flourishing of sorghum plant irrigated with peptone broth compared with the control that irrigated by water might be attributed to the chemical elements existing in the peptone broth. Opposite of this was the length of the root system where it was longer in water irrigated plants compare to which irrigated by peptone broth. Sterilization of the soil used for planting sorghum grain was a key factor for the success for the experiment. The inhibitory effect on Striga seed germination is coming from peptone broth media.

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Biography

Faris Albakri Ibrahim is trained in microbiology and molecular biology and is a Field Agent for plant collection, preservation and molecular analysis, with a strong background of quality control analysis. He is currently pursuing his MSc degree from the University of Khartoum, which involves the viroid detection in cultivated crops and vegetables in Sudan.

