

Allelopathic Effects of *Trianthema Portulacastrum* L. on Seed Germination and Early Growth of Sesame (*Sesamum Indicum* L.) Seedlings

Jhuma Sutradhar¹, A. P. Das² and A. Lokho³

¹Department of Botany, Visva-Bharati, Santiniketan, West Bengal, India

²Taxonomy & Environmental Biology Laboratory, Department of Botany, University of North Bengal,

Siliguri 734013, West Bengal, India, apdas.nbu@gmail.com

E-mail: ¹jsdhar1987@gmail.com, ²lokhoabba@gmail.com ;

Abstract—The Bardhaman district of West Bengal is generally referred as the granary of the state. Large part of the district is under the cultivation of wide range of crops. These include cereals, pulses, potato, oil-seeds etc.

A detail work on survey of major crop field weeds of Bardhaman district was carried out during the years 2013 – 2015 and a taxonomically rich weed flora has been recognized, with the prediction that some of these weeds might have allelopathic effects on one or more crop plants. It has been detected that *Trianthema portulacastrum* L. is a major weed of sesame fields and is widely distributed all over the district. It is a serious weed worldwide. To understand the allelopathic effects of *Trianthema portulacastrum*, if any, on Sesame (*Sesamum indicum* L.), a major summer-crop, the seed germination and the early growth of root and shoot of seedlings was studied under the aqueous extract and leachate of the whole plant in different concentration gradients (1:2.5, 1:5, 1:10 and 1:20 w/v). The sesame seeds were allowed to germinate separately in petridishes with different concentration of test solution. Distilled water was used to maintain a control set. Germination percentage, root and shoot length of each sets were compared with control. In high concentration of *Trianthema portulacastrum* L. aqueous extract and leachate showed a significant inhibitory effect on Sesame seed germination. In 1:2.5 concentration (i.e highest concentration of extract and leachate)germination doesn't occur at all. Allelopathic effects on germination and thus root and shoot growth increases with increasing concentration of weed.

Keywords: Allelopathy, Secondary metabolites, Weed, *Trianthema portulacastrum* L. etc.