

Effect of Exogenous Application of Aqueous Extract of *Achyranthus aspera*, on Physical and Biochemical Parameters of Wheat Seedling

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Abstract—Agricultural biostimulants are biological or biologically derived fertilizer or additives and similar products that are used in crop production to enhance plant growth, health and productivity. Biostimulants operate through different mechanisms than fertilisers, regardless of the presence of nutrients in the products. Biostimulants differ from crop protection products because they act only on the plant's vigour and do not have any direct actions against pests or disease. Crop biostimulation is thus complementary to crop nutrition and crop protection (Bulgari et al, 2015). To replace the harsh effect of the fertilizers in the agricultural field, use of the biostimulants is rapidly use and when applied to the low concentration can have stimulatory effect on growth and development of plants. Rajasthan has rich biodiversity consisting of large number of plants. Secondary metabolites in these plants are known to contribute to the defense mechanism against herbivores, disease resistance and medicinal values. Therefore, *Achyranthus aspera*, also called as prickly chaff flower, devil's horsewhip, or *Apamarga* is a species of plant of *Amaranthaceae* family. It can be found in many places growing as an introduced species and a common **weed** (Siripong et al, 2016), was chosen for this study. Effect Aqueous extract of *Achyranthus Aspera* six different concentrations (10 mg/ml, 25 mg/ml, 50 mg/ml and 100 mg/ml, 150 mg/ml and 200 mg/ml along with Control) of leaf, stem and flower extract were tested on wheat seedling. Physical Parameters, like root length, shoot length, wet weight and dry weight of wheat seedling were measured and found to have growth stimulating effect on wheat seedlings (In case of leaf extract 10 and 50 mg/ml conc shows stimulatory effects). Biochemical Parameters were also measured like chlorophyll estimation, proline content, sugar content and protein estimation were further done on selected concentrations. Our study suggests that, exogenous application of weed extract has a

beneficial effect on wheat seedling which can further be studied at field level for their commercial application.

Keywords: *Biostimulants, weed, aqueous extract, Achyranthus aprera, wheat seedling.*

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