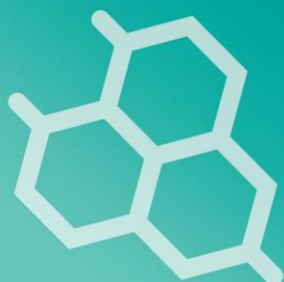


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ALLELOPATHIC EFFECTS OF AQUEOUS LEAF EXTRACTS OF DATURA ON GROWTH AND YIELD OF LENTIL

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ABSTRACT

The experiment was conducted at Agronomy Field Laboratory, Department of Agronomy and Agricultural Extension, University of Rajshahi, Bangladesh, during the period of December, 2018 to March 2019 to investigate allelopathic effects of aqueous leaf extracts of datura on growth and yield of lentil". Two lentil varieties (BARI mashur-3, considered as V1 and BARI mashur-6, considered as V2) and three datura leaf extract treatments (No application of datura leaf extracts, T0; 50% of datura leaf extracts spray solution, T1 and 100% of datura leaf extracts spray solution, T2) were used. The experiment was laid out in a Randomized Complete Block Design (RCBD) with three replications. The research result revealed that BARI masur-6 produced higher plant height (60.13cm), total dry matter (15.04 g plant⁻¹) and yield contributing characters such as, pod plant⁻¹(38.56), number of seeds pod⁻¹(1.99), 1000-grain weight (25.04g), grain yield (1294.53kg ha⁻¹), stover yield (5976.70kg ha⁻¹) and biological yield (7271.23kg ha⁻¹). In case of BARI masur-3, the corresponding values were 55.67cm, 12.56g plant⁻¹, 25.20, 1.85, 22.54g, 1095.91 kg ha⁻¹, 4522.14 kg ha⁻¹, 5618.05 kg ha⁻¹ respectively. Different growth parameters as well as yield components and yield of lentil negatively influenced by datura leaf extract treatment. The highest pod plant⁻¹ (38.52), number of seeds pod⁻¹(2.16), 1000-grain weight (25.22g), grain yield (13.03.68kg ha⁻¹), stover yield (6345.32kg ha⁻¹), biological yield (7648.99kg ha⁻¹) were observed in T0 while the lowest corresponding values of 26.50, 1.72, 21.84g, 1072.65 kg ha⁻¹,4020.05 kg ha⁻¹ and 5092.70 kg ha⁻¹ respectively were observed in T2. Datura leaf extracts also reduce weed infestation in the lentil field. From the result of the present study, it can be concluded that datura leaf extract can effectively control weed biomass but it showed some negative allelopathic effect on growth, yield components and yield of lentil.

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