

Research Paper

ADVANCE RESEARCH JOURNAL OF
C R P
IMPROVEMENT
Volume 4 | Issue 1 | June, 2013 | 21-24
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Effect of weed management practices on crop growth, weed dry weight, weed count, nitrogen uptake yield attributes and yield of winter season brinjal (*Solanum melongena* L.) under Chhattisgarh plains

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ABSTRACT : The present experiment was conducted at Research cum Instructional Farm of the Department of Horticulture, Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.) during winter season of 2009-10 to evaluate the effect of weed management practices on growth and yield of brinjal, weed dynamics as well as nitrogen removal by weeds. The experiment consisted of eleven treatments comprising of hand weeding, mulching, pre-transplanting treatments with alachlor (2.0 kg/ ha), pendimethalin (1.0 kg/ ha), pendimethalin (extra) (0.64 kg/ ha), post-transplanting treatment with glyphosate (1.5 kg/ ha) and unweeded check replicated three times in Randomized Block Design. Application of pendimethalin (extra) 37.8% CS @ 0.64 kg ha⁻¹ pre-transplanting + one hand weeding at 40 DAT + pendimethalin (extra) 37.8% CS @ 0.64 kg ha⁻¹ at 45 DAT was the best option for weed management in order to obtain higher growth parameters as well as yield. The minimum dry matter and weed growth rate was noted under pendimethalin (extra) 37.8% CS @ 0.64 kg ha⁻¹ pre-transplanting + one hand weeding at 40 DAT + pendimethalin (extra) 37.8% CS @ 0.64 kg ha⁻¹ at 45 DAT whereas, maximum nitrogen up take was recorded under unweeded check.

Key Words : Brinjal cultivars, Weeds, Weed management, Herbicides, Yield

How to cite this paper : Banjare, Kunti, Sharma, Gaurav, Singh, A.P. and Sharma, Sandeep (2013). Effect of weed management practices on crop growth, weed dry weight, weed count, nitrogen uptake yield attributes and yield of winter season brinjal (*Solanum melongena* L.) under Chhattisgarh plains, *Adv. Res. J. Crop Improv.*, 4 (1) : 21-24.

Paper History : Received : 17.11.2012; Revised : 07.03.2013; Accepted : 09.04.2013

Vegetables are one of the important components of Indian horticulture. India is the second largest producer of vegetables after China, with an estimated annual production of about 110.6 million tones from an area of about 5.5 million ha. According to recent estimates, there will be a demand of 151 – 193 million tones of vegetables in India by 2030. Despite the Indian population being largely vegetarian, per capita annual consumption of vegetables in India is only 63 kg as against 220 kg in Korea, 115 kg in China and 105 kg in Japan. India is growing about 10% of the world's vegetables (Sharma *et al.*, 2009).

Brinjal (*Solanum melongena* L.) also known as eggplant belongs to family Solanaceae and is considered to be one of the most important crops among the vegetables the world over. It is adapted in all lands except at higher altitudes and can be grown throughout the year. The area under brinjal cultivation

in the world is about 20, 43,788 hectares with a production of about 32.073 mt. In India, it is cultivated in about 5, 66, 000 hectares with a production of 9.596 mt and productivity of 16.9 t ha⁻¹ (Anonymous, 2008). Brinjal contributes 9 per cent of the total vegetable production of the country occupying a major share in the Indian diet. It is used as one of the staple vegetables which have high nutritive value. The mature edible fresh fruit contains 97.2 per cent moisture and is nutritionally a fairly good source of vitamin A, C and thiamine (12.4 IU, 12.0 mg and 0.14 mg, respectively per hundred gram of edible portion).

RESEARCH PROCEDURE

The present experiment was conducted at Research cum Instructional Farm of the Department of Horticulture, Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.) during winter