



Research Paper

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Study of weed management practices on weeds dry weight, growth, yield and economics parameter of onion (*Allium cepa* L.)

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ABSTRACT : Three herbicides were evaluated for weed control in onion at Main Agriculture Research Station, Raichur Karnataka, India. The study revealed that economically effective weed control was under oxyfluorfen 0.26 kg a.i./ha with hand weeding (30 DAT) which was next to weed free check, followed by oxyfluorfen 0.26 kg a.i./ha + oxyfluorfen 0.26 kg a.i./ha (30 DAT). The same treatment showed significantly reduced weed dry weight (2.64 g/0.25 m², 0.61 g/0.25 m² and 3.61 g/0.25 m², respectively) which was next to weed free check (0.00 g/0.25 m²). These treatments also exhibited significantly higher plant height, number of leaves per plant, leaf area of plant, total dry weight of plant as well as bulb weight, bulb diameter at each stage of crop growth, The significantly higher bulb yield per hectare was also observed in these treatments (302.77 q/ha in weed free check followed by 291.94 q/ha in oxyfluorfen 0.26 kg a.i./ha with hand weeding at 30 DAT), The significantly reduced plant growth, yield attributing parameters and bulb weight per hectare (60.83 q/ha) were recorded in unweeded control. The better B:C ratio was recorded in oxyfluorfen 0.26 kg a.i./ha with hand weeding at 30 DAT (7.81) followed by weed free check (6.38)

KEY WORDS : Herbicides, Onion, Weed control

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Onion is an important bulbous vegetable and spice crop in India which belongs to family *Alliaceae* and genus *Allium*. Onion (*Allium cepa* L.) is a bulbous, biennial herb which is consumed all over the world throughout the year. It promotes appetite and useful against malaria, night blindness and also lowering blood pressure to optimum level (Perane, 2001).

India is the second largest producer of onion next to China accounting for 20 per-cent of the world area and 10 per-cent of the world production.

In India, Maharashtra, Andhra Pradesh, Assam, Bihar, Gujarat, Punjab, Karnataka Tamilnadu, Orissa, Uttar Pradesh are the major onion growing states. At present, Maharashtra is the leading state in onion production having an area of 1.21 lakh hectares with production of 14.23 lakh metric tonnes (Anonymous, 2005). Nasik district alone contributes approximately 30 per-cent of production of the Maharashtra

state (Singhal, 2003). About 70 per-cent of total onion exported from India is from Maharashtra state (Pandure *et al.*, 2010).

The management of weed is one of the most serious problems in onion which limits the crop yield and decreases profits. Onion is very poor competitor with weeds because of non branching habit, sparse foliage and shallow root system. Yield losses in onion due to the weeds have been reported to the extent of 10 to 70 per cent (Phogat *et al.*, 1989). *Chenopodium album* L., *Amaranthus viridis* L., *Cyperus rotundus* L., *Cynnodon dactylon* L. were the major dominant weeds observed in the crop and could be minimized by the use of herbicides as one of the method of weed control. Though hand weeding is a common practice in India, it is laborious, expensive and time consuming. A loss due to weeds mainly depends upon their intensity in the field as well as type of weed flora.