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Effect of integrated weed management on growth, yield and economic returns on onion (*Allium cepa* L.)

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ABSTRACT : A field experiment on integrated weed management was conducted during the *Rabi* season of 2015-16 at the farm of KVK, Yavatmal. The experiment was conducted in Randomized Block Design with six treatments and four replications. Treatments comprised of T₁- One hand weeding at 20 days after planting of seedlings, T₂- Two hand weedings at 20 and 40 DAT, T₃- Three hand weeding at 20, 40 and 60 DAT, T₄- Spraying of herbicide oxyfluorfen 23.5% EC 0.1-0.15 kg a.i./ha 15-20 DAT + 1HW at 45 DAT, T₅- Spraying Oxyfluorfen 23.5% EC 0.1-0.15 kg a.i./ha before planting + 1HW at 40-60 DAT and T₆- Control check *i.e.* without weed control practices. The experiment was carried out in order to evaluate best weed management practices in situation of limited weedicide registered in label claim. The observations on effect of IWM practices on weed parameters, crop growth, bulbs yield were recorded. Minimum weed count and dry matter of weed at 90 DAT with highest weed control efficiency was recorded by the treatment T₄- where spraying of herbicide oxyfluorfen 23.5% EC 0.1-0.15 kg a.i./ha 15-20 DAT + 1HW at 45 DAT. Regarding the plant growth and bulb yield parameters, the treatment T₄- where spraying of herbicide oxyfluorfen 23.5% EC 0.1-0.15 kg a.i./ha 15-20 DAT + 1HW at 45 DAT was found significantly superior over all the treatments as recorded maximum plant height, neck thickness, dry matter weight of plant, bulb diameter, fresh weight of bulb, cured weight of bulb, bulb yield per plot and per ha. Treatment T₄ obtained maximum yield and thereby recorded highest gross return as well as net return and scored highest cost benefit ratio 1:2.09. However, treatment T₅- Spraying Oxyfluorfen 23.5% EC 0.1-0.15 kg a.i./ha before planting + 1HW at 40-60 DAT ranked second in control of weed growth and gained the higher bulb yield with monetary returns.

KEY WORDS : IWM, Onion, Weed, Oxyfluorfen, Hand weeding, Yield

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