Abstract

Optimizing Planting Method and Fertilizer Application Rate for Producing High Quality Nursery of Onion cv. Phulkara †

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Abstract: Onion (Allium cepa L.), locally famous as “Piaz”, occupies a prominent place among commercial crops of Pakistan, by supplementing the income of small/marginal land-hold farmers. One of the major constraints of onion farming in Pakistan is poor nursery due to adoption of traditional planting methods and overfertilization, which ultimately increases cost of production and loss of resources. The current study, comprised of two experiments, was carried out at Vegetable Area, University of Agriculture Faisalabad, to determine the most suitable nursery raising system and fertilizer application rate for onion nursery in order to get maximum plant population of good quality seedlings. The first experiment comprised of four different nursery growing methods: (1) flat bed + broadcast sowing, (2) flat bed + line sowing, (3) raised bed (6 inches height from ground surface) + broadcast sowing, and (4) raised bed + line sowing. The largest plant population, and highest plant fresh and dry weights were obtained on flat beds under line sowing. The smallest plant population was obtained on raised beds under broadcast sowing, however, the lowest fresh and dry weights of seedlings were found with flat beds under broadcast sowing. The second experiment comprised of three diammonium phosphate (DAP) application rates (50 g, 100 g and 150 g per 272.25 ft$^2$ applied at one-week interval) and a control. The maximum shoot and root lengths as well as fresh and dry weights were obtained with 100 g DAP 272 ft$^2$. In conclusion, line sowing on flat beds and application of 100g DAP 272 ft$^2$ at one-week interval produced high quality nursery of onion cv. Phulkara. But, flat bed system must be coupled with proper drainage to avoid excessive water due to frequent rainfall in tropical areas.

Keywords: Allium cepa; Seedling production; Sowing method; Fertilizer management; Diammonium phosphate (List three to ten pertinent keywords specific to the article; yet reasonably common within the subject discipline.)
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