

Abstract

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

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† Presented at the third International Tropical Agriculture Conference (TROPAG 2019), Brisbane, Australia, 11–13 November 2019.

Published: 21 January 2020

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 ft² 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 ft². In conclusion, line sowing on flat beds and application of 100g DAP 272 ft² 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

Funding: The authors acknowledge funding from the Australian Centre for International Agricultural Research (ACIAR) for project: Strengthening vegetable value chains in Pakistan for greater community livelihood benefits (HORT 2016/012).

Acknowledgments: The authors also extend the gratitude to the Mojaz Foundation, Department of Agriculture Extension (Punjab) and CAB International, Rawalpindi for the technical and financial support during the research.

Conflicts of Interest: The author declares no conflict of interest.



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