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Research Paper

Response of vegetable pea (*Pisum sativum*) cultivars on riverine soils of U.P.

D.P. SINGH, H.G. PRAKASH, M.R. DABBAS AND R.A. SINGH

See end of the article for authors' affiliations

Correspondence to:
D.P. SINGH
Department of Vegetable Science, C.S. Azad University of Agriculture and Technology, Kalyanpur, KANPUR (U.P.) INDIA

ABSTRACT

The innovative adaptive trail was conducted during *Rabi* season of 2008-09 and 2009-10 at farmers field in two villages of Jalaun district *i.e.*, Launa and Manduri and one village of Kanpur Nagar district *i.e.* Laxmipur. The operational area of district Jalaun represents typical soil, climate and socio-economic condition of Bundelkhand Zone while district Kanpur Nagar represents soil, climate and socio-economic conditions of Central Plain Zone of U.P. The ravines affected area of Jalaun district belongs to class II and III of the land capability, while the pilot area of district Kanpur Nagar is fairly levelled and having good drainage system. The soil of representative villages in district Jalaun was characterized by low organic carbon (0.20%), low available phosphorus (9.5 kg/ha) and high potassium content (255 kg/ha), while the soil of district Kanpur Nagar was characterized by low organic carbon (0.27 %), low available phosphorus (10.0 kg./ha) and medium potassium (272 kg/ha). Cultivar Azad P-3 and Arkel were sown during second week of November in both the years. Cultivar Azad P-3 gave seed yield of 13.55 q/ha in district Jalaun where as Arkel produced 11.34 q/ha in Kanpur Nagar.

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Pea is an important frost-hardy, cool season, nutritious leguminous vegetable that is widely cultivated throughout the world. As a cool season crop, it is extensively grown in temperate zone; but it is restricted to cooler altitudes in the tropics and winter season in the sub-tropics. Peas being very rich in proteins are valuable for vegetable purposes. 100 gram vegetable pea contains calories (67), dietary fiber (2.4 g), protein (4.3 g), carbohydrates (12.5 g), vitamin A (478 IU), vitamin C (11.4 mg), folic acid (50.7 µg), iron (1.2 mg), potassium (217 mg), magnesium 31mg (Tiwari and Mishra, 2002).

Green peas are eaten cooked as a vegetable, and are marketed fresh, canned, or frozen while ripe dried peas are used whole, split, or made into flour. In some parts of the world, dried peas are consumed split as dal, roasted, parched or boiled.

Some cultivars are grown for their tender green pods, which are eaten cooked or raw. Peas are sometimes preserved to get the taste during off season. Seeds are thought to cause dysentery when eaten raw. It has been reported that seeds contain trypsin and chymotrypsin which could be used for contraceptive, ecbolic, fungistatic and spermicide. There is no significant amount of toxicity or anti-metabolites in peas.

MATERIALS AND METHODS

The site of the operational area for quality seed production of vegetable pea on farmers fields was selected in two villages of Jalaun district *i.e.*, Launa and Manduri and one village of district Kanpur Nagar *i.e.*, Laxmipur. The operational area of vegetable pea seed production of Jalaun typically represents soil, climate and socio-economic condition of Bundelkhand region, while district Kanpur Nagar represents soil, climate and socio-economic condition of Central Plain region. The moisture available period for the crop growth in both the pilot area was 122 days. The soil of operational area of Jalaun district developed over alluvial and occur ravines affected, while pilot area of district Kanpur Nagar belong to Gangetic alluvial soil. The ravines affected area of Jalaun district belongs to class II and III of the land capability class and were suitable for cultivation of vegetable pea. The soil of pilot area of district Kanpur Nagar was fairly levelled, having better drainage system. The soil of pilot area of Jalaun district having pH 8.0, organic carbon 0.21% available phosphorus 9.5 kg/ha and available potash 255 kg/ha, while the soil of operational area of district Kanpur Nagar soil having pH 8.3, organic carbon 0.27%, available phosphorus 10.0 kg/ha and potash 272 kg/ha. Cultivar