Abstract

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Sustainable production of medicinal and aromatic plants in Salt-affected lands

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Abstract

Statement of the problem: Salt affected soils adversely affect the livelihood security of people in more than 100 countries, occupying about 831 million ha globally. Incorporation of medicinal and aromatic plants (MAP) on marginal and degraded lands can enhance system productivity, land utilization, profits and land development. Therefore, inclusion of MAP in the existing cropping systems on salt-affected soils in coming years offers good scope.

Results: Experiment using 5 sweet basil (Ocimum basilicum) cultivars in sodic soils (pH2 9.3) showed that the highest yield was recorded in CSLT-13, followed by CSLT-12- 1. The cultivar CSLT-5 was of the linalool chemotype, yielded 62.36% linalool in oil, while CSLT-13 and CSLT-9 which were methyl chavicol chemotypes yielded 69.6% and 57% methyl chavicol, respectively. On the basis of crop diversification study, production efficiency (61.3 kg/ha/day) was higher with sweet basil–matricaria (Matricaria chamomilla L) cropping system over the traditional rice–wheat system. Energy-use efficiency of sweet basil–matricaria was higher (11.99) than that of the rice–wheat (11.43) cropping system. Highest benefit: cost ratio was recorded with sweet basil–matricaria (2.74), followed by chili (Capsicum spp.)–garlic (Allium sativum L) (2.42) cropping systems. In an another experiment with eleven genotypes of dill (Anthum graveolens L.) the cultivar 'CSS 1' recorded the highest seed yield across three years under different alkalinity locations.

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Biography

Dr. Sharma did Ph.D. in 1986 has been associated with Central Soil Salinity Research Institute (CSSRI), Karnal, India as Scientist, Senior Scientist and Principal Scientist. In his 37 years long career, he was engaged on reclamation and management of salt affected soils and use of saline ground

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