Abstract

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

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Abstract

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. Five Jatropha (Jatropha curcas L.) genotypes were screened and evaluated in sodic soils. The highest oil content was found in BTP 1-K and BTP 1-N followed by BTP 1A and this genotype was found to be suitable for producing more biomass and bio-energy and rehabilitation of degraded lands..

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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 water. In his capacity as Head, Regional Research Station and later as Director, CSSRI, Karnal from 2010 to 2016, he has managed various innovative research programmes on reclamation of salt-affected soils and use of poor quality water by taking everybody on board. Dr. Sharma has published more than 162 research papers including 54 in international journals and is recipient of national and international awards including fellowship from reputed professional societies. He worked as a Visiting Scientist at IRRI, Manila, Philippines and he also had visited 10 foreign countries. Presently, he is working on resodification of salt-affected soil management..

