Available online at
www.agrospheresmagazine.com

ISSN: 2582 – 7022

Agrospheres:e-Newsletter, (2021) *2*(4), 66-67

Agrospheres: e-Newsletter

Article ID: 226

Salinity Problems in Haryana and Its Reclamation Techniques

Dinesh Kumar*, Rajesh Kumar and Suryapal Singh

Chaudhary Charan Singh Haryana Agricultural University

Open Access

*Corresponding Author
Dinesh Kumar*
E-mail:
thesupremenature@gmail.com

Article History
Received: 13. 04.2021
Revised: 19. 04.2021
Accepted: 25. 04.2021

INTRODUCTION

Soil salinity is one of the major land degradation problems in Indian agriculture which adversely affects the productivity of agricultural land. In India, saline soils occur in 29,56,809 ha area spread in 12 states and Andaman and Nicobar Islands. Out of which Haryana has approximately 49,157 ha area affected by soil salinity. Most of these soils are limited to areas of low rainfall, brackish sub-soil water and impeded drainage. In Haryana, salinity has tinkered so deeply with economic sustainability in the southern-western districts of Rohtak, Jhajjar, Sirsa, Jind, Bhiwani, Sonepat, Fatehabad and Mewatthat farmers there call themselves the "poor cousins" of those in other districts where the quality of soil and water is better. The problem has affected productivity on more than 3.2 lakh hectares, or around 10% of the total cultivated area in Haryana. Saline soils are those which contain excess neutral salts which are soluble and affect the plant growth adversely. The EC status of saturation extract of these soils are generally more than 4.0 mm hos/cm. Higher the salts in the soil more is the electrical conductivity of soil. Plant growth in saline soils is mainly affected due to the osmotic effect of excess soluble salts which caused reduction in availability of water to the plant roots. Also, some of the compounds present in saline soils like salts of chlorides and sulphates of sodium calcium and magnesium have caused depletion of oxygen thus prove toxic to the plants. Cup shaped topography of Haryana and addition of salts through rain water made the area prone towards salinity. Besides this, increase in saline soil area in Haryana is cause by the movement of subsurface saline water due to a vacuum created by pumping of sweet groundwater in adjoining areas. Out of the 2.96 million hectares affected by salinity in India, around 15% is in Haryana. But due to a long-drawn process, less window of time and lack of machinery, less than 70,000 hectares of saline land has been reclaimed nationally so far. Different methods of reclamation of saline soils include:

Drainage and leaching: In saline soils the salts need to be leached down beyond the root zone and not allowed to come up again. However, presence of high water table prevailing in most salt affected parts of Haryana may creates a limitation in the way of successful accomplishment of leaching of salts. Therefore, some forms of artificial drainage like ditches or pumping from aquifers is provided. In the absence of drainage, efforts should be focused to leach down salts from the soil surface as much below as possible by leaching with good quality of water i.e. canal water. Leaching can be done by ponding water on soil surface. Usually, water table is lowest in the month of May and June so this is the best period to perform leaching. When we have not available with us the good quality of water in sufficient amount then we should go for conjunctive (mixing of good and poor quality water) use of water.

Raising of crops and trees: Some of the crops are more tolerant to saline soils than others, therefore selection of crops in salt affected soils is quite important. Field crops like barley, dhaincha, sugarcane, oats, berseem, cotton and guar can tolerate even 12.0 mmhos/cm of electrical conductivity, while crops like field beans, mung, urd, gram, and sesamum are highly sensitive to salinity (EC<3.0 mmhos/cm). Medium tolerant crop includes wheat, raya, cotton, sorghum, bajra, maize and rice. The vegetables crops which can be grown successfully under high salinity conditions are asparagus, spinach, tomato, potato, sweet potato, carrot, onion, peas and garlic, while radish, celery and green beans are highly sensitive. Reclamation through bio-drainage, by planting of eucalyptus has been achieved in low-lying areas in some blocks of Haryana.

Others techniques: Proper land leveling, smoothening and bunding is the major requirement for reclaiming the salt affected soils while other includes addition of organic amendments like organic waste such as FYM, compost and vermi-compost also proved to be very beneficial.