

BIOSALINE AGRICULTURE

Biosaline agriculture may be defined as the form of agriculture in which production is obtained from salt-affected waste land (without reclamation) through the use of salt-tolerant plants of economic value by management of salinity in root zone of soil. Certain objectives and important points regarding biosaline agriculture are as under:

- i. It aims a better and economic use of salt affected lands at status quo.
- ii. Scientific use of saline/sodic irrigation water on sustainable basis.
- iii. It is profitable and integrated use of genetic resources (plants, animals and fish).
- iv. Gradual improvement of soil health.

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Outcomes and benefits of biosaline agriculture

- I. Enhanced economic returns to farmers by improving the productivity of salt-affected lands.
- II. Increased vegetative cover on the land, which reduces evaporation and decreases further salinity built-up.
- III. Increased use of brackish water, which helps to irrigate high value crops with canal water.
- IV. Gradual reclamation of salt-affected lands through addition of organic residues, root action and subsequent leaching of salts.
- V. Individual farmer can adopt it even on a single acre.
- VI. Decreased pressure on energy resources.
- VII. Mitigation of environmental pollution.

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Pre-Requisites and Components of Biosaline Agriculture

- a. Land leveling, deep ploughing and appropriate land preparation.
- b. Soil sampling, analysis and categorization.
- c. Selection of a salt tolerant variety of crops, plants, (forest/fruit), grasses or fodders.
- d. Preparation of a package of technologies including sowing methods after analyzing the individual situation (farmer's interest, available facilities and climatic conditions).
- e. Selection of land use methodologies and plants that should not be just at random.
- f. Deviation from the pre-requisites may result in failures (oftenly complained).

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Things to remember with respect to Salinity and Saline Agriculture

1. Land leveling is very important.
2. Deep ploughing is oftenly needed.
3. Fine seed bed preparation is useful.
4. Puddling should never be adopted.
5. Ridge sowing and bed sowing is useful in case of upland crops.
6. High seed rate and more number of seedlings per hill gives useful results.
7. The age of nursery should be more than that for the normal soil.
8. The sapling should be transplanted in 2 x 2 x 2 feet (adjustable for the specified profile) pits filled with silt.
9. Dying rice crop can be saved through draining the water and addition of sulphuric acid (20-25 kg per acre).
10. Top dressing of urea in Sodic soil, especially on standing water in rice have suppressing effect on crop growth which can be controlled through decreasing the moisture content or application of H_2SO_4 (10 kg per acre).
11. Soil and Water testing is not only important but implementing the recommendation is also very essential.
12. Deep irrigation with more intervals is useful.
13. Plant selection matching with the salinity status of soil is necessary.
14. Addition of organic matter and inclusion of green manure in crop rotation is direly needed.

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seed/hill