

Healthy soil on sugarcane cultivation

Devendra Kumar and Anubhav Kumar

Headings:

1. Introduction health of soil for cane cultivation
2. Maintain fertilizer for soil health
3. Use of bio fertilizer and green manures
4. Soil health importance

1. Introduction health of soil for cane cultivation:

As early as 5000 B.C., Vedas and the Upanishads as well as other ancient Indian documents maintenance Soil synonyms with land. The mother supporting and nursing all life on the earth to the farmer. Soil is the portion of the Earth is surface which he can plough and grow crops on the provide him with food and fibre for his own needs and that of his animals to the poor man.

Soil consists of four major components viz., (i) mineral matter (ii) organic matter (iii) water (iv) Air, all these components cannot be separated with much satisfaction because they are presents very intimately mixed with each other. The mineral matter, from the bulk of soil solids and very small amount of the soil solids occupied by organic matter.

Physically the soil consistency of stones, large pebbles, dead plant twigs, roots, leaves and the other parts of plants, fine sand, silt, clay and humus derived from the decomposition of organic matter. Sugarcane cultivation recommended suitable loamy and clay loan soil texture for cultivation and good water holding capacity and maintain porosity. Soil structure is crumby and granular recommended for sugarcane cultivation.

2. Maintain fertilizer for soil health:

Heavy feeder crop but higher dose of nitrogen during ripening stage decrease sucrose content at maturity stage in canes. Blanked application of nitrogen (120 to 150kg.) phosphorus (80 kg.) potash (60 kg.). The best source of nitrogen in normal soil is ammonium sulphate in saline soil used urea and acidic soil is used CAN.

Nutrients are continuously removed from the soil by crops in addition to losses by leaching and erosion. It is estimated that sugarcane crop in India removed annually about 4.27 million tone of nitrogen, 2.13

Devendra Kumar, (Department Cane Development, Uttar Pradesh)

Anubhav Kumar, (Assistant Professor), Department of seed science and technology CSAUT, Kanpur,
(UP) India

million tone phosphorus and 7.45 million tone potash. The sound soil and crop management practices are adopted to improved and maintain soil fertility. Soil needs good physical conditions for the purpose of sustained crop production that play an important role in the maintenance and improvement of soil fertility which are discussed below.

Some important points are recommended for good soil health in sugarcane cultivation. (i) Good soil tilth (ii) Sufficient depth (iii) Sufficient but not excess supply of nutrients (iv) Free from population of plant pathogens and insects (v) Large population of beneficial organisms (vi) Free from toxic chemicals (vii) Resistance to degradation

3. Use bio fertilizer and green manure

Bio fertilizer products are containing living cells of different type of micro agents which have an ability to mobilize nutrient from insoluble to soluble form by biological process. bio fertilizer is an organic product containing specific microorganisms in concentrated from which is derived either from nodules in plant roots or form to soil of root zone rhizosphere.

Consisting of nitrogen fixing bacteria such as Azospirillum sp. and Azotobacter sp. Azospirillum sp. are more effective in clay soil with adequate nitrogen while azotobacter

species in Sandy loam soil. In addition of those many cellulolytic fungi have the ability to decompose crop residues which builds up soil organic matter besides nitrogen addition with intensive cultivation of sugarcane.

Green manuring can be defined as a practices of ploughing or turning into the soil undecomposed green plant tissues for the purpose of improving soil physical, chemical and biological environments. common green manure crops are sunhemp (*Crotalaria juncea*), Dhaincha (*Sesbania aculeata*) and guar (*Cyamopsis tetragonoloba*).

Advantage of green manures in sugarcane cultivation

- (i) It increases soil physical, chemical and biological health. It facts this is stimulates the activity of soil microorganisms.
- (ii) The green manures crop gave different plant nutrients to the surface soil layer from the sub surface soil layer.
- (iii) It improves the soil structure aeration status, permeability and infiltration capacity of soil.
- (iv) Green manures are some residual effect relation to supply different plant nutrient and those why it helps for the better growth to the next crop.

4. Soil health importance

Healthy soil produces healthy sugarcane crops that is turn nourish people and

animal. Soil supplied essential nutrients like water, oxygen and root support that our food producing plant needs to grow and flourish in agro ecosystem. Continuous manipulation of soil is going due removal of nutrients. the national resources conservation services defines quality of soil health similarly but it in heart and dynamics well quality to the definitions the aspects of soil quality relating to a soil natural.

Composition and properties of soil is influenced by the factors and produce soil formation in the absence of human impacts while dynamic soil quality relates to soil properties that change as a result of soil use the management over the human Time scale.

A large, faint watermark of the New Era Agriculture Magazine logo is centered on the page. It features a sun with rays, a globe, and a plant, surrounded by a laurel wreath.

NEW ERA

AGRICULTURE MAGAZINE