

STRUCTURAL AND WEIGHT PERCENTAGE STATUS OF DIFFERENT ELEMENTS IN SONVAD AGRICULTURAL SOIL

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Abstract :

To determine the elemental status and structure of agricultural soil was composed from the adjacent agricultural area of Sonvad rural area. There are dissimilarities in the soil elemental status and structure. This work comprises Carbon, Oxygen, Silica, Iron, Bromine element presents in the cultivated soil. There is dissimilarity in percentage of different element. Oxygen and Silica of the soil is slightly high and the Iron and Bromine detected lower than other elements during this reading. Some elements are C, O, Si, Fe and Br. Here the mineralogical correlation is associated with these elements are C being associated with Natron, Fencoperite and other correlated minerals Si related with the Wenkite, Natron, Partlikite, Almendine, Fencoperite, lderite. SEM images recommended that most of the minerals images are scaly layered, blocky, and uneven shape

Key Words : SEM, EDAX, Agricultural, Element, soil, Carbon, Oxygen.

Introduction :

Continuous soil testing is very essential for developing world for completion of need s of food for everyone. Structural and elemental changes also observed in soil and it is studied by scanning electron microscopy (SEM) and energy dispersive spectrometer (EDS) [7].

This soil test may be elemental, Nutritious, mineralogical or physico- chemical assessment. The soil degradation is continuing since last 7 to 8 decade due to competition of increasing the crop production at every places of world [3]. It is now necessary with population growth specifically in India. Practice of different kinds of chemicals in the form Plant (organic) and mineral (Inorganic) fertilizers, weedicide, insecticide, pesticide, rodenticides, fungicides decomposer, vegetable growing regulators, topsoil conditioners, liming, uses of acids as drip cleaner etc [13]. these chemicals provide short term effects of crop manufacture Therefore it is essential of constant observing of soil condition for coming plant growth and necessity of nutriment to everybody.

Preparation of Sample for SEM Analysis :

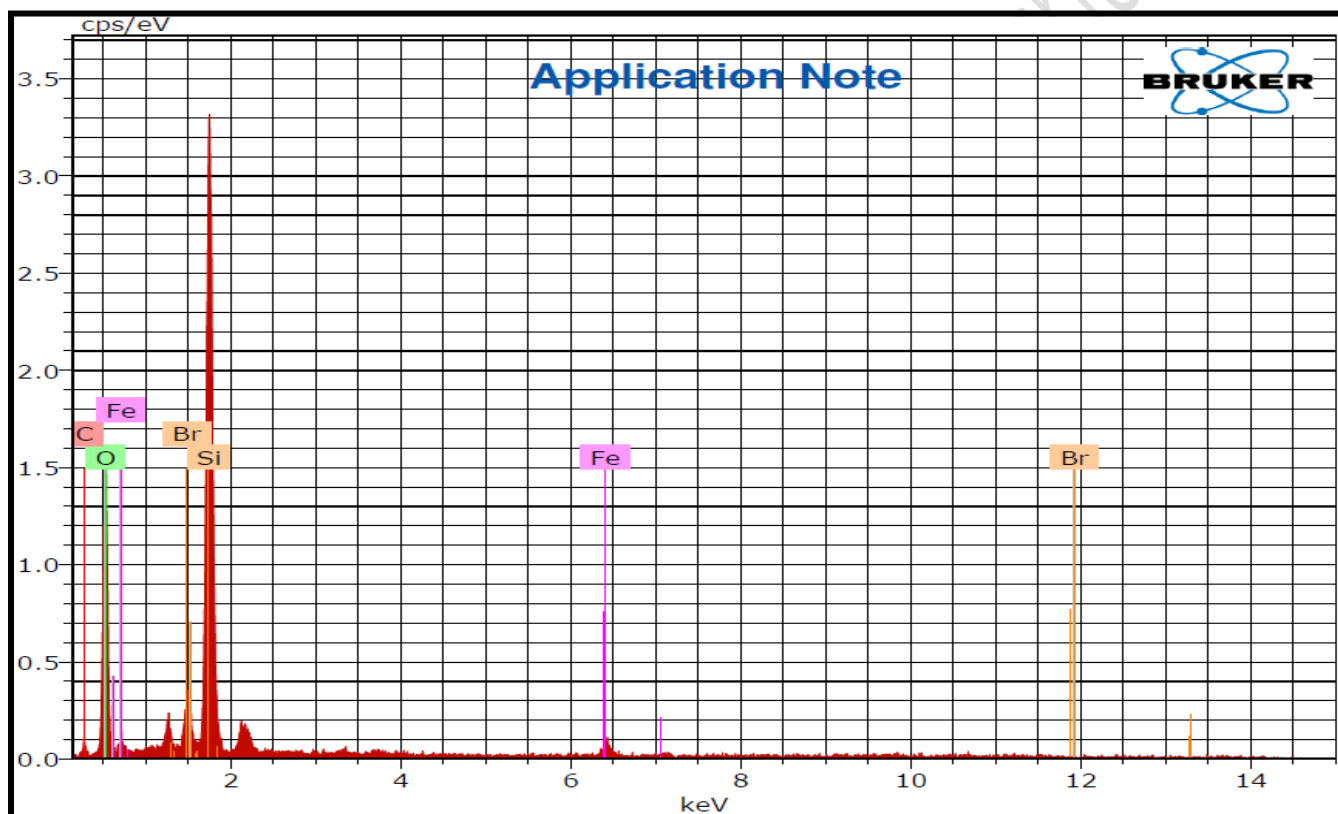
For imaging the surface of the soil as it is, at that time they are mounted firmly on a SEM stub through conductive carbon tape earlier transmission to the inside of the SEM. Samples must be totally dry to protect from out gassing in the chamber, which would lead to unwanted weakening of the high vacuum as well as adulteration. Samples must be the minimum size essentially practicable, bulky samples have need of longer pump-down earlier



high vacuum is attained, carry a more weight of potential impurities into the instrument, and moreover are disposed to charging if non-conducting. On the other hand, if internal info of a bulk sample is to be imaged certain additional sample preparation earlier to inspecting will be essential [15].

The University institute of chemical technology, North Maharashtra University Jalgaon also used scanning electron microscopy (SEM) and energy dispersive spectrometer (EDS). These instruments SEM and EDS are recommended in conjunction with XRD. FESEM model – S-4800 Type-II and EDS detector X FLASH-5030 are used. The instrument SEM S-4800 used 248.0469 pixel sizes, lens model is high, mode is HD, and colour mode is gray scale.

Result and Discussion :



Research

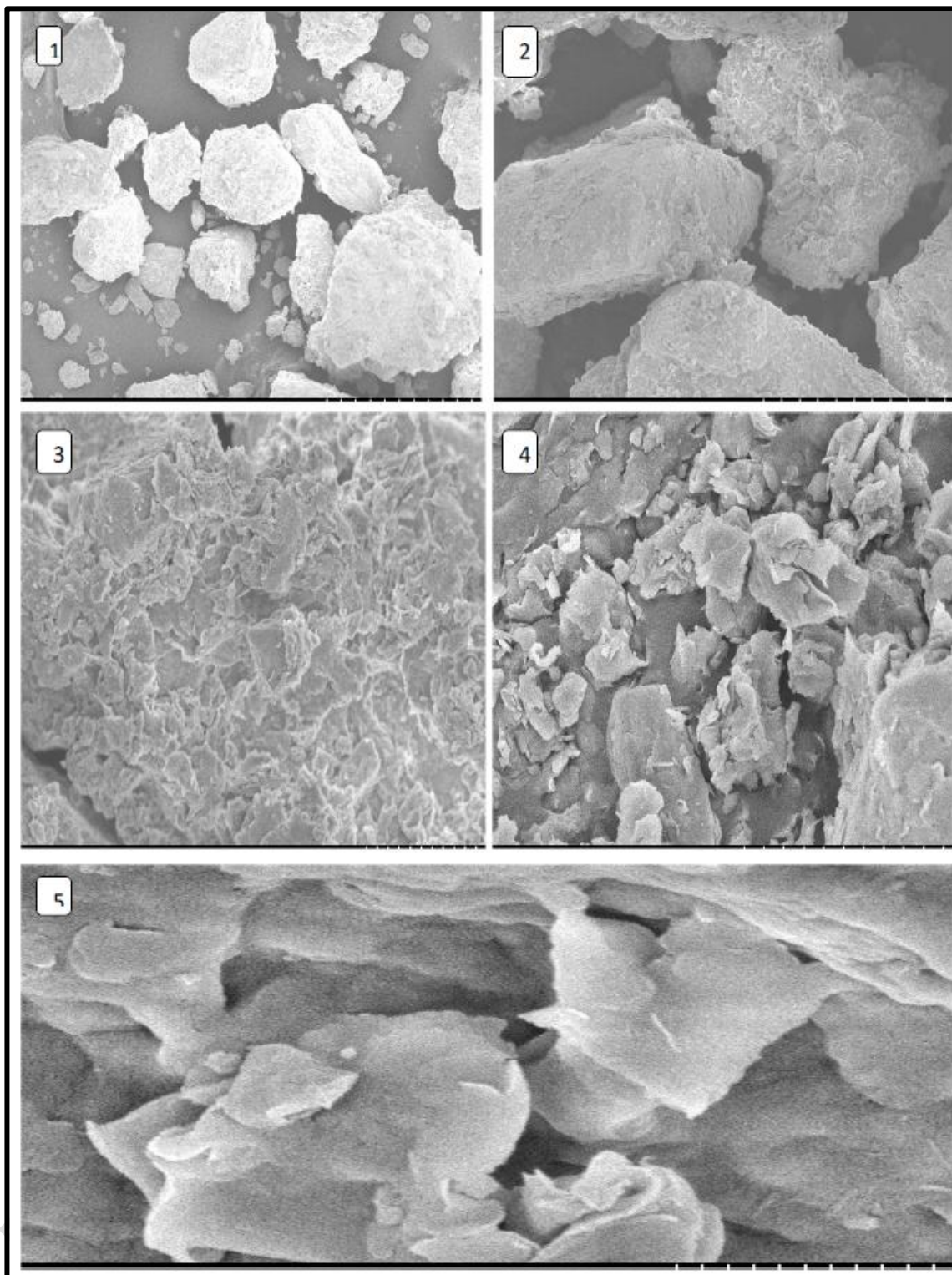


Figure : EDAX Spectrum of Sonavad soil

F Figure : SEM images of Sonavad soil sample observed at 1) 8.8 mm x 400, 2) x 1.00, 3) x 3.00, 4) x 11.0 5) x 35.0 k.

Sr No.	Element	Weight %
1	Carbon	5.36
2	Oxygen	30.49
3	Silica	26.72

4	Iron	3.86
5	Bromine	4.31
6	Total	70.74

Table : Weight Percentage of Different Element in Sonwad Soil from EDAX Analysis:

A representative soil sample of Sonavad soil SEM images and EDAX spectrum stated that few element similarity group minerals occur; some elements are C, O, Si, Fe and Br. Here the mineralogical correlation is associated with these elements are C being associated with Natron, Fencoperite and other correlated minerals Si related with the Wenkite, Natron, Partlikite, Almendine, Fencoperite, Iderite and associated weak and trace minerals. Fe is being associated with the Partlikite, Almendine, Fencoperite, Iderite Pizgrischite, Suessite and other related weak and trace minerals. Br is being associated with the Kelyanite and other halide mineral. The structures are resolve with help of SEM images recommended that most of the minerals images are scaly layered, blocky, and uneven shape.

Conclusion :

According to EDAX study observed that elemental percentage of oxygen is higher that indicates presence of oxides of metals and silicates. SEM study and its images shows that the most of the minerals images are scaly layered, blocky, and uneven shape structure.

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