Laboratory Services Division Bureau of Soils and Water Management Department of Agriculture	TN	Л-LSD-04-15
SECTION : SOIL CHEMISTRY	Issue No.: 2	Effective date: March 22, 2021
SUBJECT : SOIL SALINITY/ALKALINITY - PREPARATION OF	Revision No.: 0	Page 1 of 3
SATURATION EXTRACT		

SCOPE

Soils under consideration here are those that contain excessive concentrations of either soluble salts or exchangeable sodium or both. In agriculture, they are called problem soils that require special remedial measures and management practices. Soluble salts produce harmful effects to plants by increasing the salt content of the soil solution and by increasing the degree of saturation of the exchange materials in the soil with exchangeable sodium.

PRINCIPLE

Measurement of the salt concentration of the water in a saturated paste gives a value to which takes into account the field water-holding characteristics of the soil and which therefore can be related to plant response.

TEST PRECAUTIONS

Special precautions should be taken in preparing a saturated soil paste with peat and muck soils. If possible, peat and muck soils should not be allowed to dry appreciably following collection, because their saturation water content changes with dehydration. Peat and muck, especially if coarse or woody, require an overnight inhibition period to obtain a define end point for the saturation point. After the first wetting, pastes of these soils usually stiffen upon standing. Adding water and remixing them yields a mixture that usually retains the characteristics of a saturated paste. With fine-textured soils, enough water should be added immediately, with a minimum of mixing to bring the sample nearly to saturation. This minimized the formation of clumps of soil during stirring, speeds then mixing process, and helps attain a more definite end point. Care should also be taken not to unduly over wet coarse-textured soils. The presence of free water on the surface of the paste after standing is an indication of over saturation paste water contents of these material. However, the effect on the value of the EC of the extract (ECe) is small and usually does not significantly affect salinity diagnoses.

EQUIPMENT

- a) Analytical Balance, precision of 0.001 g
- b) Vacuum Line, suction apparatus
- c) Vacuum Pump

LABORATORY WARE

- a) Spatula
- b) Cannister, container of the soil sample, 100-400 g capacity

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- container is tipped and slides freely off tiThank you!