



STATUS AND FORMS OF SELENIUM IN THE SOILS OF MUZAFFARNAGAR DISTRICT OF UTTAR PRADESH UNDER DIFFERENT FODDER CROPS

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ABSTRACT

Total selenium content in soils of Muzaffarnagar district varied from 0.15 to 0.84 ppm with a mean value of 0.455 ppm. The soils under guar showed highest total selenium, followed by soils under berseem, jowar, labia and oat. The amount of available selenium in the soils ranged between 0.014 to 0.089 ppm. The soils under guar fields had relatively more available selenium than those under other fodder crops. The amount of residual selenium in the soils of Muzaffarnagar district varied from 0.148 to 0.748 with an average value of 0.422 ppm. The soils under berseem sites possessed highest residual selenium followed by guar, jawar, oat and lobia.

Key words : Selenium, Fodder crops, Residual.

INTRODUCTION

Selenium is some what unique among the essential nutrient provided by plants as part of animal diets. In some areas native vegetation can contain levels that are toxic to animals whereas in other locations, feed can be deficient in selenium, causing animal health problems. The study of selenium status of soil and its interaction with various nutrients is therefore, necessary for determining the possibilities of its accumulation in toxic levels or deficiency in plants.

Soils of Muzaffarnagar district are neutral to alkaline in reaction and contains free lime or gypsum or high salt content. They may contain toxic levels of selenium. However, no information on this aspect is available for the soils of Muzaffarnagar district. Keeping in view investigations have been carried out to assess the status and different form of selenium in the soils of

Muzaffarnagar district.

MATERIALS AND METHODS

The present study consisted survey of Muzaffarnagar district with a view to delineate selenium deficiency and toxicity in soils, a brief description of climate and soil of this district alongwith sampling and analytical procedures are as under.

The climate of Muzaffarnagar district is hot and dry with mean annual rainfall is around 80 cm. The soils are deep and are not often fully mature. They are basic in reaction, usually light textured and highly productive.

Collection of soil samples

Soil sample of 0-15 cm depth was collected with the help of tube auger from each selected site. They were put in separate polythene bags, labelled properly and were brought to the laboratory. The collected soil samples were