

Soil Test Crop Response Based Fertilizer Recommendation for Yield Targets of FCV tobacco in Northern Light Soils of A.P.

:

Complete Details of Technology:

Rationale Soil testing as a tool for judicious fertilizer use is a well-recognized practice all over the world which takes care of too little, too much or disproportionate applications of nutrients. The soil testing and fertility management programmes have been given adequate importance for sustaining crop production and balanced fertilization in Indian agriculture. After introduction of high yielding varieties and hybrid crops, the need for systematic soil test crop response research in different soil Agro-Climatic regions become evident. ICAR established the AICRP on STCR in 1967 and the STCR concept was developed by Ramamoorthy et al., during 1967. STCR provides the relationship between a soil test value and crop yield.

The soil test values are needed to be correlated with actual crop response obtained under field conditions. Concept of STCR and Targeted Yield The approach is aiming at precise quantitative adjustment of fertilizer doses under different soil test values and response conditions of the farmers and for a given targeted yields.

The fertilizers will be recommended based on the following criteria.

- Fertilizer recommendations based on regression analysis approach
- Recommendations for certain % of maximum yield Methodology To develop the prescription equations for fertiliser nutrient requirement for a targeted yield following basic data is required which is to be generated through standard STCR field experimentation methodology.
- Nutrient requirement (NR) in kg per quintal of the produce • Percentage contribution from soil available nutrients (Cs)
- Percentage contribution from added fertilizers (Cf) towards making effective fertilizer prescriptions for specific yields. Adjustment equations for required fertiliser nutrient for a given yield target i.e cured leaf (q ha⁻¹):

Fertiliser $N/P_2O_5/K_2O = NR / (Cf / 100) * T - Cs / Cf \times STV$ Where,

F = Fertilizer (kg ha⁻¹);

NR = Nutrient requirement; Cs = Per cent contribution from soil;

Cf = Per cent contribution from fertilizer; STV = Soil test value (kg ha⁻¹);

T = Yield target (q ha⁻¹).

STCR based Online Fertiliser Recommendation software has been developed by linking the Fertiliser Nutrient Prescription Equations for FCV Tobacco in NLS in the form of a website with two main modules viz., Administrator and 'User'. The 'User' module classified into three menus viz., Farmer details, Field / Crop details, Soil test data and yield target. Range of yield targets for respective

region was given which were to be selected by the user. Once the 'submit' button is selected report will be generated for the selected yield target for FCV tobacco farmers of NLS region.

Brief Description of Technology Including Salient Features:

Technology:

- STCR based fertilizer prescriptions equations and On-line fertilizer recommendation system for FCV tobacco in Northern Light Soils of Andhra Pradesh.

Salient features:

- Provide an efficient and profitable site-specific fertilizer recommendation for increased crop production and for maintenance of soil fertility.
- Aims to provide balanced, efficient and profitable nutrient application rates for pre-set yield targets giving due consideration to basic fertility status of soil.

Benefits/Utility

- Farmers of a specific agro-climatic region can get the fertiliser recommendation for their fields using soil test values for a desired yield target of FCV tobacco.
- Report of fertiliser recommendation can be generated online and same can be taken as a hard copy from any place