

DGR also requested to conduct cluster demonstrations and seed production program in areas where previously there was no groundnut during spring season and utilize seed from summer-2017 season to kharif 2017 season to penetrate more areas coverage.



Revival of Groundnut in Sitapur and adjoining districts of Uttar Pradesh

The KVK-II of Sitapur was asked to submit a proposal for cluster demonstration and seed production. The proposal was to produce seed locally during spring season of 2017 and distribute among farmers for production during kharif 2017. The ICAR-DGR provided quality seed and inputs for supporting the program. Seed of TG 37A was provided to the KVK-II which distributed it to selected farmers for sowing during spring season. The program was launched on 7th March 2017 with pre-spring season training program and on farm demonstration in the farmers' field. The farmers were satisfied with their queries and replies by us and agreed to multiply seed during spring season and utilize seed during kharif season with added acreage as well as distributing among fellow farmers for further area expansion of groundnut. This trend is expected to be continued till the total groundnut areas is covered and groundnut is revived in the district of Sitapur.

Inputs: Ram Dutta, Narendra Kumar and Radhakrishnan T

Calcareous Soils and their Management

The soils which contain free calcium carbonate (CaCO_3) and gives effervescence by releasing CO_2 gas visibly when treated with 0.1N HCl. Calcareous soils can contain from 3% to >25% CaCO_3 by weight with pH values with a range of 7.6 to 8.3 (Basic). They are generally formed by basic parent materials such as limestone or by continuous irrigation of water having dissolved CaCO_3 . The estimated calcareous area of country is 22.8 million hectares (69.4% TGA).

Problems associated with calcareous soils

Plants will have impaired nutrition and stunted growth due to imbalanced nutrient supply
 N volatilization, P fixation, Fe chlorosis and limitation of Zn, Cu and Mn nutrients
 Fe chlorosis can result in yield reduction of 32% of pods and 18% of fodder

Remedy

- Band placement of P fertilizers rather than broadcasting is recommended
- Use slow release or granular N fertilizers with placement in the root zone
- Ensure K:Ca:Mg ration in soil is 4:4:2, for higher groundnut production
- Apply acid-forming fertilizers such as ammonium sulphate and urea fertilizers, organic manures and green manures to reduce the pH of soil
- Apply phosphate solubilizing bacteria and Vascular arbuscular mycorrhizae @ 2kg/ha to enhance P availability
- Apply 25 kg ZnSO_4 /ha as basal dose
- Foliar spray of K @ 0.5%, Fe @ 0.5%, Zn @ 0.5% and B @ 0.2% at 40 DAS for maximizing groundnut yield
- Grow P-efficient genotypes such as GG 5, ICGV 92188
- Grow genotypes resistant to Fe-chlorosis such as ICGV 86031, ICGV 06146



A calcareous soil block

Inputs: Kiran Reddy

Conservation Agriculture improves Earthworm Population in Soil



Intensive tillage led cultivation practices disturb beneficial organisms like earthworms and their activities in the soil. The populations of soil organisms have been reported to decline consistently worldwide under intensive crop production systems due to factor like continuous cropping, no or less application of organic manures like FYM, application of agro-chemicals, and removal or burning of crop residues etc. Earthworms feed on soil organic matter and, therefore, retention of crop residues on soil surface under Conservation Agriculture has been found to support activities of earthworms in the soil due to ample availability of food. The increased population and activities of earthworms in the soil improve soil aeration, moisture content due to higher rate of infiltration, and also lead to improved soil quality.

We measured earthworm population under different tillage and residue management practices in an experimental field under groundnut-wheat cropping system. In each plot an area of 1 x1 feet size was identified and earthworm population was counted in 0-15 and 15-30 cm depth during 2nd and 4th year of experimentation. The mean data indicated that under minimum tillage and zero tillage population of juvenile earthworms increased in 15-30 cm depth while that of adult earthworms increased in both 0-15 and 15-30 cm depth as compared to conventional tillage.

Inputs: Ram A Jat, Nataraja MV and Rahul Solanki