

Legumes in Crop Production System

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SUMMARY

Legume plants have a probably important role play in growing indigenous nitrogen production besides meeting human demands for protein and energy. Some legumes have the capability to solubilize in anyother case unavailable phosphate by excreting organic acid from their roots, in addition to improving soil fertility. This article reveals that importance of legumes crops in crop system.

INTRODUCTION

Legumes are wonderful gift of nature to humans. They provide not only nutritious food but also feed and fodder to animals a help in conserving natural resources and maintain ecological balance. The cultivated legumes have many kinds i.e. Pulses, legumes, oilseed legumes, forage legumes, and range legumes. Legumes provide excellent soil cover, adding huge amount of organic matters, fix atmospheric nitrogen and help to improved soil physical conditions.

Legumes

Mainly grain legumes play an important role in different cropping system or rotations. Grain legumes may be grown for many purpose like- vegetables crop, cover crop, pulse crop, fodder crop and also use as a green manure crop. Most legumes have shorter period of maturity hence fit well in many production systems. Different production system are as follows:

- Rice- Wheat- mungbean(grain pulses crops) Pigeon pea (short duration) – late wheat- vegetables, Maize – chickpea/lentil – green gram / vegetables
- Gliricidia (Shade Crop) sown in young orchard and used as a shade crop first and then incorporated as green manures in implantation crop like tea and coffee.
- Cowpea , cluster bean , moth bean ,green gram , black gram etc. these types of crops grown in a production system with objectives of clothing the surface with the vegetative cover and check the water erosion, wind erosion ,and reduce the runoff in hilly / sloppy, rainfed and desert areas.
- Dhaincha (brown manure crop) it is a no-till version of green manuring in rice crop practices both rice and dhaincha is knocked down with spraying 2,4-D. After this loss of chlorophyll in leaves showing brown color.

Role of legumes in Crop Production System are as Follows

- Recycling of plant nutrients.
- Increased nitrogen availability(through fix atmospheric N)
- Increased phosphorus availability
- Increased soil organic carbon
- Improvement in physical condition of soil
- Enhancement of soil biological activity
- Enhancement of productivity of succeeding crops
- Helps in soil and water conservation
- Weed suppressed (due to fast growth habit)
- In conservation agriculture
- Reduce tillage
- Water economy

- Crop residue

Constraints

Having several constraints that limit area expansion and productivity of legume crops. In those areas where legumes are grown year to year they present new diseases (sometimes viral diseases become a serious threat), pests and weeds, which may be difficult to control. Most of the legumes are grown on low fertility soil, low soil pH, marginal lands, flooding areas and nutrient deficiencies, which can negatively impact on production of legumes, nitrogen fixation process, preventing the legumes from improving soil fertility to their full potential. Not appropriate availability of irrigation water or rainfall limits the productivity of legumes.

CONCLUSION

Grain pulses, oilseed, forage, range and other legumes have a significant role in Indian agriculture because they maintain/improve productivity in different cropping systems/rotations with their nitrogen-fixing ability. They also play an important role in sustainability and increased demand and prices of oilseed and pulses. Legumes at the same time is a cause for concern, especially for the low-income group in India. However, there is a possibility of area expansion of pulse crops onto less fertile soil and fitting them in the intercropping system. There is a need for the integration of plant breeding and cultivar development, which may develop new varieties that can tolerate biotic and abiotic stresses, particularly in the light of climate changes. Productivity of pulses, oilseed, forage, range and other legumes can be increased through advanced varieties, modern packages of practices and inoculation technologies that deliver elite inoculum strains of root-nodule bacteria, smothering favorable soil conditions with enhanced survival.

REFERENCES

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