

Importance of Legumes in Agricultural Production System: An Overview

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ABSTRACT

Leguminous crops are known for their unique nitrogen fixing ability. Legumes introduced into a cropping system can not only add to the fertility of the soil by their nitrogen fixing ability but also gives additional benefit of soil organic matter improvement, nutrient recycling, improving soil porosity and soil structure etc. Moreover, as pulses are protein rich, hence, it gives dietary diversity and help in improving the human health. As legumes are usually of short duration, they fit well into the cropping systems, providing flexibility in crop planning. They can also improve the economy of the farmers to a great extent. As cereal-cereal cropping systems have been found to be unsustainable, hence legume can be considered as a suitable alternative in those cropping systems.

Keywords: Cropping system, Fertility, Legume, Soil health

Legumes belong to family Leguminosae or Fabaceae and are known for their nitrogen fixing ability. The cultivated legumes can be classified as grain legumes or pulses, oil seed legumes, vegetable, forage legumes and range legumes. As cereal based intensive cropping systems have been found to be unsustainable in a long run hence, inclusion of legume can be helpful in improving soil fertility and makes the production system sustainable. In this article, the multiple benefits of legume have been discussed briefly.

Benefits of Legume

(A) Improvement in soil fertility

Legumes are nitrogen fixers. Legumes form a symbiotic relation with nitrogen fixing bacteria and fix atmospheric nitrogen, the process is called biological nitrogen fixation. A list of rhizobium species suitable for different crops has been given

below. The amount of nitrogen fixed varies with crop and environmental factors (climatic and edaphic factors).

Rhizobium species	Legumes
<i>Rhizobium leguminosarum</i>	<i>Pisum sativum</i> , <i>Vicia faba</i> , <i>Lens culinaris</i> , <i>Lathyrus sativus</i>
<i>Rhizobium phaseoli</i>	<i>Phaseolus vulgaris</i> , <i>P. angustifolius</i>
<i>Rhizobium trifoli</i>	<i>Trifolium</i> sp.
<i>Rhizobium meliloti</i>	<i>Medicago</i> sp.
<i>Rhizobium japonicum</i>	<i>Glycine max</i>
<i>Mesorhizobium ciceri</i>	<i>Cicer arietinum</i>
<i>Azorhizobium caulinodans</i>	<i>Sesbania rostrata</i>

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