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Pulses cultivation as relay cropping in the rice field: A technique for intensification of pulses production in the medium high to medium low lands of Bangladesh

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Pulses as a member of legumes is a wonderful gift of nature which is a store house of nutrition. Among the pulses lentil (*Lens* culinaris Medikus subsp. Culinaris), grass pea (Lathyrus sativus L) and pea (Pisum sativum L) are the important cool season legume crops grown in Bangladesh under rice-based cropping systems which have significant contribution to food, feed and sustainable development of agriculture. These pulses are mainly grown after the harvest of monsoon-rice in the winter season (October-March) in Bangladesh. But in most cases, these pulses cultivation, after the monsoon-rice harvesting is delayed in medium high - medium low lands and further aggravated by higher infestation of diseases and insect pests and forced maturity, resulting in lower yields. It was also identified that global climatic changes lead to more frequent high temperature during the end of crop cycle, resulting in lower yields. In this situation relay cropping, a conservation technology in the standing monsoon rice field, 10-15 days before rice harvest has a great opportunity which ensures timely sowing and best use of residual soil moisture and also reduces cost of production by 45%. It was found that, lentil, grass pea and pea as relay crop produced higher seed yield (2050 kg/ha), (1650 kg/ha) and (1850 kg/ha) which was higher by 46%, 32% and 37% over conventional practice (1400 kg/ha), (1250 kg/ha) and (1350 kg/ha), respectively. Now this technology is gaining popularity among the farmers of medium low land areas where the lands would have remained fallow otherwise. The increased production of pulses also has multi-dimensional impacts on livelihood improvement and nutritional security of Bangladeshi people. Besides this, inclusion of pulses in the rice-based cropping system ensures soil health improvement for sustainable production system. Finally, sustainable agriculture will be helpful for safety food production in the farm level as well as food will be secured.

Biography

Md Omar Ali is a distinguished Scientist of Bangladesh Agricultural Research Institute (BARI), Bangladesh. He is a cropping system Agronomist. He has been working as a Principal Scientific Officer (Agronomy) at Pulses Research Centre (PRC) of BARI, Bangladesh since 1992. He completed his PhD in Agronomy especially in the field of Conservation Agriculture through the joint venture research program of ICARDA, Syria and Bangladesh. He is the program Leader of agronomic research and development activities of PRC of BARI, Bangladesh. He is also working with the collaboration of international institute like-ICARDA, ICRISAT, AVRDC, IITA, ACIAR and World Bank etc. for the pulses research and development. He has developed 61 technologies. He has published four books/ chapters and about 130 papers in the national and international journals. He has received Distinguished Scientific Achievement Award for the valuable contribution in lentil improvement in Bangladesh through ICARDA, 2004.

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