National Seminar
on
Agriculture and Global Warming : Challenges and Potentials

June 05-06, 2010

ABSTRACTS

Organized by :
Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior (MP)

Sponsored by :
Madhya Pradesh Council of Science & Technology, Bhopal (MP)

Economics of Pigeonpea Hybrid ICPH - 2671 Seed Production

M.K.Saxena, Usha Saxena, K.B.Saxena and V.S.Khandalkar

Agriculture College, Indore; ICRISAT; ZARS, Khargone

Pulses are generally grown under low input and risk - prone marginal environments of rainfed agriculture. These are considered a major source of food proteins but unfortunately their yields are low and unstable. At present the protein availability among masses is less than one - third of its normal requirement and with continuously growing population and stagnation of yield the protein availability is likely to decline further. Among pulses, pigeonpea or red gram (*Cajanus cajan* L. Millsp.) occupies an important place in India with 3.7 M ha. and 2.7 m T of yield. In Asia besides India, Myanmar (570,000 ha), China (150,000 ha), and Nepal (21,000 ha) are the other important pigeonpea growing countries. In India, de-hulled split cotyledons of pigeonpea are cooked to make *dal* (thick soup) for eating with bread and rice, while in southern and eastern Africa, and South America, whole dry and immature seeds are used as vegetable. Its nutritious broken seeds, husks, and pod walls are fed to cattle; while its dry stems make an important household fuel wood. Pigeonpea is credited to be the most suitable crop for subsistence agriculture because it is drought tolerant, needs minimum inputs, and can produce reasonable quantities of food even under unfavorable production conditions. Its seeds contain about 20 - 22% protein and reasonable amounts of essential amino acids.

In India pigeonpea breeding activities are continuing for the past 60 years but its yield has remained low and unchanged. To overcome this problem ICRISAT developed a hybrid breeding technology that is considered a major milestone in the history of breeding food legumes. This pigeonpea hybrid technology, powered by an efficient A_4 CMS system derived from a wild species (*Cajanus cajanifolius*) and holds promise of breaking the productivity barrier. The cross-pollination for producing large quantities of hybrid seed is brought about by honey bees and other insects. After 35 years of intensive research ICRISAT developed the world's first commercial pigeonpea hybrid and it was named as ICPH 2671. This hybrid is performing well in the state of Madhya Pradesh. The success of such invention will depend on that fact that its seed is produced economically. Therefore in order to estimate its cost of production an experiment was conducted at Agriculture College Farm, Indore, in 2007 *kharif* season. The details of field plot techniques, expenses, and costs are reported herein. Besides high grain yield, hybrids offer many advantages over varieties

The parental lines (A & R) of the hybrids were sown in 4female : 2 male ratio under dry field conditions. In order to ensure supply of pollen grains, the seed of R line was also grown in the periphery of the field. The experiment was sown on 27 June, 2007. The row-to-row spacing was kept at 75 cm, while plants within the rows were spaced at 30cm. The crop was protected with irrigation and insecticide to control pod borers. The cost of seed production is discussed in this paper.

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