5 CONSTRAINTS IN PULSE CULTIVATION

The non-availability of seeds of high-yielding varieties in the desired quantities is perhaps one of the major constraints in the expansion of pulses. Although more than 200 improved varieties of pulses have been released since 1970’s, its impact hardly get reflected in the yield (Figure 9). The rate of growth of yield of pulses was 0.03 percent over the past four decades.

Figure 9: Average yield of pulses (All India) 10-Year average

The failure of these varieties to make any real dent in pulse productivity could thus be due to their inherent weakness. In pulses, improved varieties hardly have an yield advantage of 15-20 percent over the traditional varieties. Even this yield advantage did not attract the farmers to go for these varieties indicating their poor performance at the field level. At present, the very best seed available belong to the same group, which the farmers are already using. Varieties with better yield advantage and desirable characteristics to suit the varied agro-climatic conditions need to be developed in pulses.

The fertiliser use in pulses was very low with chickpea receiving the highest priority and pigeonpea the least. Though the recommended dose in Madhya Pradesh was 15-25 kg. of nitrogen and 20-50 kg. of superphosphate per hectare in pulses, the actual application of chemical fertiliser on an average, was found to be 2.8 kg in pigeonpea, 6.4 kg in lentil, 8.13 kg in blackgram and 12.04 kg in chickpea. For the growth and development of root nodules, phosphorus is absolutely necessary and application of 40 kg P2O5 per hectare has been recommended. Use of fertilisers, especially in kharif pulses, even in the study period was low. With the withdrawal of subsidies on fertilisers resulting in a hike in the prices, the use of fertilisers is expected to decline.

It is apparent that the distortion in fertiliser subsidy / pricing policy making the phosphatic and potassic fertilisers more costly relative to the nitrogenous fertiliser also contributed to the adverse impact on the growth of pulse crops. According to Economic Survey 1993-94, the consumption of phosphatic and potassic fertilisers decreased in 1992-93. The imbalance in NPK consumption ratio would likely aggravate the already existing soil fertility problems. The impact of such an unbalance in fertiliser use would be more severe in pulses as phosphorus is considered the most important nutrient for pulses. Allowing for a rise in the procurement prices to compensate for cuts in fertiliser subsidies does not make sense in pulses as well as in many other crops for which procurement by Government agencies is inadequate or lacking. Measures to correct the distortions in fertiliser policy and to educate the farmers on the use of

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balanced fertilisers as well as on the techniques to improve fertiliser use efficiency are urgently called for.

Bio-fertilisers are expected to make up for the high price of fertilisers to some extent as well as to protect the long-run soil health. Rhizobium inoculation of legume crops has long been considered as an important factor for increasing yields. Experimental evidence suggests that anything up to 100 percent of the nitrogen requirement of pulse crops can be met with by providing efficient strains of Rhizobium coupled with sound agronomic practices. Besides, the bio-fertilisers are also environment-friendly and free from the adverse effects of chemical fertilisers. Seeds should be inoculated with efficient Rhizobium cultures to activate the process of nodulation.

Though efforts to popularise these Rhizobium inoculants have been going on for a long time and several public and private sector units are manufacturing them, the adoption of these biofertilisers is found to be very negligible. Many of the farmers who happened to use the culture reported that these inoculation with Rhizobium is not giving the desired level of response. Probably, the Rhizobium inoculation is not very effective in pulses. If this technology is as efficient as claimed, it does not have to be “pushed” even now by the government agencies as there would have been enough demand by this time. Sustained use of Rhizobium inoculants in the long run thus seems to be difficult. Blaming the poor transport and storage facilities for the ineffectiveness in the field does not make much sense as these are to be expected in its adoption. The final testing ground of any technology is in the farmers’ field. Of course, strict Quality Control Standards needs to be enforced in the manufacture and sale of the inoculants.

Given that these inoculants are very effective, some vested interests might be suspected to suppress its spread. A nexus between the chemical fertiliser industry and the government is to be doubted in this context.

In pulses there are a number of diseases and insect pests which cause heavy losses resulting in poor production. Though several resistant/tolerant varieties had been developed by research institutions the spread of such varieties in the farmers’ fields is very limited. The main reason could be our weak seed production programme. Research on bio-pesticides and incorporation of insect-resistant genes, albeit promising in the field verification trials, is yet to be commercially viable. Chemical pest control seems to be the only option left with the pulse farmers at present.

Even though several plant protection chemicals with their method and time of application have been developed the use of pesticides in pulses was very negligible. Either these pesticides may not be giving the desired effect to control the pests or the damage due to these pests may be below the economic threshold level. Cheaper and effective pesticides to combat the pests in pulses thus needs to be developed.

Furthermore, there is hardly any visible technological change in pulse farming in the country. This clearly shows that technological stagnation is primarily responsible for the backwardness of pulses not only in Madhya Pradesh but in the country as a whole.