

## EXTENSION STRATEGY FOR BRIDGING THE TECHNOLOGICAL GAP IN THE ADOPTION OF PULSE PRODUCTION TECHNOLOGY

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Pulses have remained neglected in our agriculture since long. This is evident from the fact that the total annual output of pulses in the country has remained stagnant at 10 to 12 million tonnes during the last three decades. There has been little improvement in per hectare yield of pulses over the years. As against this, the minimum per capita requirement of pulses has been estimated to be 60 grams per day, the optimum being 104 grams per day. The importance of pulses in our daily diet, farming system, restoration of soil fertility, export trade and livestock feeding are well recognized and needs no further elaboration.

The low productivity and production of pulses can be attributed to a host of factors. One of them is less research based sound strategy. Based on the study (Triveni, 1992) conducted in two CD blocks of Bulandshahr on technological gap and constraints in the adoption of pulse crop production technology, an attempt has been to suggest a strategy to bridge the gap in the adoption of pulse crops technology in the area under study in particular and the state of Uttar Pradesh.

### METHODOLOGY :

The data for the study have been collected from about 20 respondents: research and extension personnel from Pahasu and Siyana C.D. blocks of district Bulandshahr of Uttar Pradesh. The sample of respondents included subject matter specialists, ADOs, VDOs, etc.

Information relevant to the study was collected from the extension personnel through well

structured, pre-tested interview schedule. Appropriate scales were used to collect data. The data so collected was analysed and discussed for their adoption behaviour of pulse production technology.

**Suggested Strategy**—So to increase the pulse production adoption of latest technologies among the farmers has to be boosted. From the study, two strategies have been suggested : (a) Area approach and (b) productivity approach. Due consideration was given to population growth, standard of living, and increasing proportion of pulses in the diet along with safe-guard against natural hazards.

**(a) Area Approach**—This approach is operationalised as the cultivation of pulses in the most suitable selected areas on watershed basis by utilizing all the available technologies for attaining the highest possible yield and creating model farms.

**(b) Productivity Approach**—This approach has been defined as intensive cultivation of a particular pulse crop in the most tested area by concentrating all efforts and techniques to attain the maximum possible yield per unit area, which may act as models for other similar areas.

These two approaches would be successful only when all the three wings of development—research, extension and administration join hands and work in an integrated manner. Cooperation and coordination among these three wings would enable the achievement of targets. Therefore, separate strategies were worked out based on the

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expressed opinions of the concerned extension personnel.

**Research Strategy**—It is an open fact that development of agriculture in any country depends, very much, on sound and systematic research infrastructure. With rapid population growth and limited scope of area expansion, research support has become a must for increasing agricultural production. The yield of pulses continues to be low because no high yielding pulse varieties could be evolved because the earlier strategy laid lopsided emphasis on cereals. In short, pulses have suffered from less sufficient production-oriented research. It is realized on all hands that a sound technology is needed to boost up pulse production in the country. This aspect has engaged serious attention of our scientists in recent years. The opinion of extension workers in this connection may highlight some of the major dimensions. The opinion expressed by the concerned extension personnel in the study was presented in Table 1.

**Table 1. Suggestions about dimensions of research in pulses** N=20

Suggestions	Respondents	Percentage	Rank
1. High yielding varieties	20	100.00	I
2. Disease and pest resistant varieties	15	75.00	IV
3. Fertilizer responsive varieties	10	50.00	VII
4. Improved agronomic practices	16	80.00	III
5. Short duration varieties	17	85.00	II
6. Effective plant protection chemicals	13	65.00	V
7. Irrigation responsive varieties	12	60.00	VI

In all seven suggestions were given by the respondents in respect of research approach in pulses. In terms of frequencies, high yielding varieties topped the list of all the seven suggestions by making available pulse varieties with high yielding potential, the farmers' attention can easily be diverted from cereals to pulses.

The second important area of research suggested by the respondents was evolution of short-duration varieties of pulses. The logic behind the suggestion might be that unless the

duration of pulse variety is very short, they cannot be grown without causing delay in timely sowing or transplanting of succeeding crop. Sometimes, the farmers have to lose one crop altogether because of long duration of traditional pulse varieties, as in the case of pigeon pea. If the duration of pulse variety is very short, it can also be grown as a catch crop even during short span of summer when the land has otherwise has to be kept fallow.

The third important suggestion was improved agronomic practices, which would go a long way in increasing pulse production even with the available varieties.

The fourth important suggestion by the respondents was disease and pest resistant varieties. In fact that the farmers feel that diseases and pests are the one of the major constraints in pulse cultivation. SO by evolving disease and pest resistant varieties farmers' attention can easily be diverted from cereals to pulses.

To sum up the respondents suggestions point to most of the important area as (i) High yielding variety, (ii) Short duration varieties, (iii) Improved agronomic practices, and disease and pest resistant varieties.

**Extension and Training Strategy**—In farmers' field many factors influence the adoption of a particular technology by the farmers. A sound and systematic approach to the problems of adoption of pulse technology is of paramount importance. India has probably the biggest extension network in the world. But unfortunately the extension machinery was till recently geared to increase production and productivity of major cereals at the cost of pulses and other crops. The result has been unawareness on the part of the farmer in general about the available pulse technology as highlighted here.

A schedule was prepared to know as to what extension efforts should be made to increase production and productivity of pulses. The VDOs of the study had suggested the various components of strategy, which were presented in Table 2.

The extension personnel have suggested that



promotion of pulse cultivation has to be taken up from different angles—right from coverage of improved pulse cultivation aspects on radio and TV, distribution of extension literature on pulses—at the initial awareness creation level. Then proper demonstrations need to be laid out in the farmers' fields to show the potential of the improved pulse technology, which need to be supported by group discussions among the pulse growers duly supported by subject matter specialists. In addition, farmers need to be given special short training courses wherein the critical issues of plant protection, rhizobium treatment, and seed treatment can be taught so that farmers reduce the pulse yield losses caused by pest and disease attack. Farmers would also reduce the fertilizer costs through proper adoption of rhizobium cultures for pulse cultivation.

**Table 2. Components of extension and training strategy as suggested by extension personnel**

N=20

Suggestions	Respondents	Percentage	Rank
1. More-individual contacts with farmers	17	85.00	III
2. More coverage of pulses on TV and radio	13	65.00	VI
3. Demonstration on improved pulse cultivation	20	100.00	I
4. Group discussions by Pulse SMSs	15	75.00	IV
5. Short training courses for farmers	18	90.00	II
6. Distribution of free literature on pulses	11	55.00	V

**Administrative policy**—The desired effect of research and extension cannot be realized without effective administrative support including policy decisions. The farmers are often averse to the advice of the experts and extension workers regarding the adoption of recommended technology because of non-availability of required inputs in time and high cost of critical inputs.

Unless these problems are taken care of, it would be unrealistic to expect a situation better than what we have today. The extension personnel have offered some strategic suggestions, which are presented in Table 3.

The strategic suggestions offered by the

concerned extension personnel centred around availability of needed inputs including seed, rhizobium culture, plant protection chemicals, fertilizers, equipment, credit facilities and provision of dal mill in the villages. The most important among the suggestions was timely availability of required inputs in adequate quantities within easy reach and at subsidized rates. So far as rhizobium culture is concerned, respondents suggested that it should be made available free of cost. Another important suggestion was about value addition to the pulse grains where in the government should take up establishing small dal mill units in the villages to help farmers convert their whole grain pulses into dal. Such an effort would not only help build small entrepreneurs among the villagers, but also help in reducing storage losses.

**Table 3. Components of administrative policy strategy for maximizing pulse production as suggested by extension personnel**

N=20

Suggestions	Respondents	Percentage	Rank
1. Free supply of rhizobium culture.	13	65.00	IV
2. Timely availability of seeds, fertilizers, plant protection chemicals in adequate quantities within easy approach.	19	95.00	I
3. Supply of seeds, fertilizers, plant protection chemicals and equipment at much subsidized rate.	17	85.00	II
4. Availability of certified and quality seeds.	15	75.00	III
5. Credit facilities for pulses through regional rural banks and cooperatives.	12	60.00	V
6. Establishment of small dal mills in villages.	11	55.00	VI

## CONCLUSION

It can be concluded that for effective promotion of pulse cultivation by farmers involve taking appropriate actions at all the three levels: research, extension and administrative policy.

**Research :** Research efforts should give top priority to evolving high yielding, short duration

and pest and disease resistant varieties that can easily fit in the cropping calendar of farmers. Research should also focus on developing better agronomic package of practices for higher pulse production.

**Extension :** Extension agencies need to adopt mass media for creating awareness about improved package of practices for pulse cultivation, build confidence among farmers through short duration training courses and group discussions monitored by subject matter specialists. Providing the farmers with evidence of the yield potential of HYVs

through model demonstrations and finally increasing individual contacts with pulse growing farmers.

**Administrative policy :** The administration need also to gear up for provision of timely supply of quality seeds, critical inputs like rhizobium cultures during sowing time, and provision of credit facilities and lastly provision of facilities for value addition to pulses by farmers.

When all these efforts are taken up in an integrated manner, it would be possible to increase pulse production in India.

## REFERENCES

- Triveni Dutt (1992) A Study of Technological gap and the constraints in the adoption of pulse crops technology among farmers of district Bulandshahr. U. P. Ph. D. Thesis (Unpublished), Department of Agricultural Extension, Kulbhaskar Ashram Degree College, Allahabad.

