CHAPTER VI

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Four field experiments were conducted to study the performance of four varieties of gram under different treatment factors such as row spacing, dates of sowing, NPK fertilizer mixtures and rhizobium culture. Three of the experiments were conducted during the traditional post-monsoon season (September to December) and one of the experiments was conducted during the non-traditional pre-monsoon season (February to May).

All the experiments were laid out in randomised block design with appropriate number of replications in each. Growth and yield data from each treatment were collected at an interval of 15 days. These were statistically analysed for valid conclusions. The significant findings have been graphically represented under each experiment. Finally the cost of cultivation has been worked out to understand the profitability of different treatments. Some of the important conclusions are given below.
(1) For the traditional season varieties Kopargasn gave the maximum yield/ha closely followed by variety T-44. During the pre-monsoon season variety R5-16 topped the list followed by variety T-44. Therefore, variety T-44 was equally suitable for cultivation in both the seasons. It was also observed that variety Kopargasn was suited exclusively for the post-monsoon season.

(2) The best spacing for greengram was found to be 25 cm between rows and 10 cm between plants.

(3) The fertilizer mixture P₃ (80 kg N+80 kg P+40 kg K/ha) was found to produce the highest grain yield of greengram. This, followed by the mixture P₁ (40 kg N+40 kg P+40 kg K/ha). As regards the methods of application, furrow method recorded higher grain yield than broadcast method to the tune of 26.7%.

(4) The rhizobium treatment of seed produced 22.1% more yield than the treatment without rhizobium culture. However, highest grain yield was obtained when 40 kg P₂ 0₂/ha was applied together with the rhizobium treatment.

(5) During the pre-monsoon season the greengram could be profitably grown any time from the 1st week of February to 10th of March.

(6) The maximum profit/ha was recorded from the variety Kopargasn with the mixture P₃ (80 kg N+80 kg P+40 kg K/ha) applied by furrow placement during the post-monsoon season.
(7) Application of rhizobium culture resulted in an additional profit of Rs.1200.00/ha as compared to no culture application.

(8) The protein content of seeds of greengram under the different treatment combinations did not differ much. It ranged from 25.2% to 26.1%.