Chapter VI

Summary, Conclusion and Recommendations
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I. **Response to moisture regimes:**

The differences in plant height, number of branches per plant, days taken to 50 percent flowering and dry matter accumulation per plant were observed significant due to moisture regimes. The values were maximum with 0.8IW/CPE ratio and minimum with rainfed. However, shoot height during first season at 25\textsuperscript{th} day stage and number of branches per plant at all stages during second season was non significant due to moisture regimes. Fifty per cent flowering was delayed due to increase in irrigation levels.

Number of capsules per plant were highest under 0.8 IW/CPE ratio which was at par with 0.6 IW/CPE ratio but significantly higher than 0.4 IW/CPE ratio and rainfed.

Number of seeds per capsule increased significantly with successive increase in moisture regime, however, 0.6 and 0.8 IW/CPE ratio were at par during second season.

Test weight, seed and straw yield increased significantly with moisture regimes up to wettest regime (0.8 IW/CPE ratio).

Significantly higher N, P and K contents were recorded in grain and straw both under 0.8 IW/CPE ratio over to others. However, 0.6 and 0.8 IW/CPE ratios were at par during first season and response was non-significant during second season.
regarding nitrogen content of seed. N, P and K uptake in grain and straw were progressively increased with increase in moisture levels.

Protein content was not affected significantly by various moisture regimes, while oil content decreased significantly with increasing levels of irrigation up to 0.6 IW/CPE ratio which was at par with 0.8 IW/CPE ratio.

Higher soil moisture depletion and consumptive use were recorded with increasing in moisture in the root zone while reverse was true for water use efficiency.

Maximum cost of cultivation (Rs. 8568.95 ha⁻¹) and gross income (Rs. 16676.94 ha⁻¹ and 9530.73 ha⁻¹) were recorded under 0.8 IW/CPE ratio while, minimum values were recorded under rainfed. Net income (Rs. 8107.99 ha⁻¹) and net profit per rupee invested (1.95) were also highest with 0.8 IW/CPE ratio. (Table -20).

ii. **Response to levels of nitrogen :-**

Application of nitrogen at the rate of 75 Kg ha⁻¹ increased significantly the shoot height, number of branches per plant, 50 per cent flowering and dry matter accumulation at all the stages of growth. However, shoot height at 75 kg N ha⁻¹ was at par with 50 kg N ha⁻¹ at 90th day stage during second and at harvest during both the seasons. The above two nitrogen levels were also at par during all the stages of first season while 75 Kg N ha⁻¹ proved significantly superior to 25 kg N ha⁻¹ and no nitrogen regarding number of branches per plant.
There was significant delay in 50 percent flowering due to nitrogen application up to the maximum dose of 75 kg N ha\(^{-1}\).

Dry matter accumulation per plant also increased significantly with increasing levels of nitrogen.

Number of capsules per plant and number of seeds per capsule were maximum at 75 kg N ha\(^{-1}\) which was at par with 50 kg N ha\(^{-1}\) but significantly higher than 25 kg N ha\(^{-1}\) and no nitrogen.

Test weight, seed yield and straw yield increased significantly with increasing levels of nitrogen up to 90 Kg ha\(^{-1}\). However, straw yield at 75 kg N ha\(^{-1}\) was at par with 50 kg N ha\(^{-1}\) during second season.

N, P and K content and uptake in seed as well as in straw increased up to 75 kg N ha\(^{-1}\). However, significant increase was found with 50 kg N ha\(^{-1}\) in case of nitrogen content in seed during second season and phosphorus content during both the seasons.

Oil content decreased significantly up to the highest dose of 75 kg N ha\(^{-1}\) while significant increase in protein content was found only up to 50 kg N ha\(^{-1}\).

Total moisture depletion, consumptive use and water use efficiency increased with increasing levels of nitrogen. Maximum values of above three were noticed with 90 Kg N ha\(^{-1}\).
iii. **Interaction effect:**

Moisture regime of 0.8 IW/CPE ratio with 75 kg N ha\(^{-1}\) favourably increased the growth and developmental characters and ultimately seed and straw yield per hectare. However, interaction effects were found significant only in respect to dry matter accumulation per plant, test weight, seed yield and straw yield per hectare. Application of 90 Kg N ha\(^{-1}\) with 0.8 IW/CPE recorded the highest values of all these characters, closely followed by 50 kg N ha\(^{-1}\) under same level of irrigation, while lowest values were recorded under the rainfed and control or no nitrogen combination.

Economically, a dose of 75 kg N ha\(^{-1}\) was superior over other doses of nitrogen in respect to gross/net income and net profit per rupee investment.

**Conclusion** :-

On the basis of the result summarized in the present investigation the following main conclusion can be drawn:-

1. Scheduling of irrigation at 0.8 IW/CPE ratio was found better as compared to lower levels for linseed corp.
2. Application of 90 Kg N ha\(^{-1}\) was found to produce maximum yield as compared to lower levels for linseed crop.
3. Scheduling of irrigation at 0.8 IW/CPE ratio along with 75 kg N ha\(^{-1}\) was found better for achieving higher yields and net income of linseed crop var. Garima under Bundelkhand conditions.
Recommendations:

On the basis of the results the following fruitful massages can be communicated among the farmers of the Bundelkhand regions.

1. Scheduling of irrigations for linseed crop should be done at 0.8 IW/CPE ratio. It means the scheduling of irrigation should be done with 60 mm water when Cumulative pan evaporation reaches 75 mm.

2. 90 Kg Nha⁻¹ should be applied as half dose as basal and remaining half as top dressing after 1st irrigation.

3. Scheduling of irrigation at 0.8 IW/CPE ratio along with 90 kg Nha⁻¹ should be applied for linseed crop in order to set maximum yield as well as net income per rupee investment.