Chapter VI
6. SITE AND CONDITION.

A research work entitled "Agronomic studies on wheat under late sown conditions of western U.P." was carried out at the research block of A.P. College, Lakhnoti during 1983-84 and 1984-85. Two experiments were conducted for the purpose. Treatments in the first experiment consisted of four times of first irrigation (20, 27, 34 and 41 days) and four nitrogen levels (0, 40, 80 and 120 kg/ha) and were tested in split plot design keeping time of first irrigation in main plots and levels of nitrogen in subplots with four replications. The second experiment comprised of three seed conditions (dry, soaked and sprouted) and three varieties (SD 1553, SD 2288 and SD 2329) which were tested in randomized block design with four replications. The salient findings of the study are summarized in this chapter.

1. Germination count remained unaffected due to nitrogen application at all the stages except at 8 and 10 days during 1983-84 where its lower doses proved to be significantly superior over higher doses (80 and 120 kg/ha).
Varieties differed in their germination count indicating superiority of HB 2329 over HB 2285 and HD 1553.

Seed conditions also influenced the number of plants germinated/m² during both the years. Sprouted seeds resulted into the maximum number of the same followed by soaked and then dry seeds. All differed significantly.

2. First irrigation given at 27 and 29 Jy6 remaining on per produced shoots with significantly more height at maturity than 41 and 62 during both the years. The differences between 27 and 34 Jy6 were however significant only during 1983-84 whereas the later was inferior.

Increasing levels of nitrogen from 0 to 200 kg N/ha significantly improved the height of shoot at maturity during 1983-84; however during 1984-85 the increase was significant only up to 80 kg N/ha.

At maturity all the varieties differed significantly as regards their shoot height and were in the descending order of HB 1553 > HB 2285 > HD 2329.
The maximum shoot height was noted under sprouted seed condition which was at par with that of soaked seeds and both were significantly superior over dry seeds in terms of shoot height.

Time of first irrigation did not influence dry weight/shoot at maturity during 1983-84 however during 1984-85 the effect turned down to be significant where irrigations at 20 and 27 DAS remaining at par produced significantly higher dry weight/shoot than that at 34 and 41 DAS.

In general an increasing trend in dry weight/shoot with increasing levels of nitrogen from 0 to 120 kg/ha was noted during both the years. However the increase was significant only up to 80 kg N/ha. The difference between 40 and 80 kg N/ha during 1983-84 was not significant.

Varietal differences in relation to dry weight/shoot were not significant at maturity, however they were in ascending order of in 1553 < in 2329 < in 2235.
The effect of seed condition was also non-significant at maturity as regards dry weight/shoot and were in order of sprouted > soaked > dry seed sown crops.

4. Significant effect of time of first irrigation an average number of tillers/plant during 1983-84 revealed that irrigation at 27 DAS gave the maximum number of tillers/plant at maturity which was at par with that of 20 DAS and both were significantly superior to 34 and 41 DAS. However during 1984-85 the effect turned down to be non-significant at the same stage.

In general an increase in average number of tillers/plant was noted with the increasing levels of nitrogen from 0 to 120 kg/ha. The increase was significant upto 80 kg N/ha during 1983-84 and upto 120 kg N/ha during 1984-85.

Variety HD 1553 recorded significantly higher average number of tillers/plant than HD 2285 and HD 2329 during 1983-84, however during 1984-85, variety HD 1553 and HD 2285 remaining at par were superior to HD 2329.
Crop sown with soaked seeds produced maximum average number of tillers/plant which was significantly higher to dry & sprouted seeds during 1983-84 and to dry seeds only during 1984-85.

The effect of time of first irrigation on mortality of tillers was significant during 1983-84 where the maximum mortality was noted under irrigation at 41 DAS and minimum under 27 DAS.

There was a decline in mortality of tillers with increasing levels of nitrogen from 0 to 120 kg/ha. But it was significant only up to 80 kg N/ha. The difference between 0 and 40 kg N/ha during 1984-85 was not significant.

Varieties also differed significantly in respect of percent mortality of tillers during 1983-84 which was maximum in variety HD 2329 followed by HD 2285 and HD 1553. However during 1984-85 they were in order of HD 1553 > HD 2329 > HD 2285.
Dry and sprouted seed conditions remaining on par gave higher mortality of tillers than soaked seeds during 1983-84, however during 1984-85 the effect turned down to be non-significant.

Irrigation at 27 DAS remaining on par with 20 DAS produced significantly higher number of ears/m² than irrigation at 34 and 41 DAS during both the years.

Increasing doses of nitrogen up to 80 kg N/ha increased significantly the number of ears/m² during both the years.

Variety HD 2329 recorded the highest number of ears/m² during both the years which was significantly superior to HD 2285 and HD 1553 both differing significantly.

Sowing of sprouted seeds resulted into significantly higher number of ears/m² than soaked and dry seeds during 1983-84. Almost similar trend was noted during 1984-85 except that the difference between soaked and sprouted seeds turned down to be non-significant.
7. Delay in first irrigation up to 34 DAS did not bring significant change in number of grains/ear, but further delay brought a significant reduction during 1984-85.

Number of grains/m² increased significantly with increase in nitrogen levels up to 80 kg N/ha during 1983-84 & upto 40 kg during 1984-85.

Varieties HD 2285 and HD 2329 remaining on per gave significantly higher number of grains/ear than HD 1553 during both the years.

All the seed conditions differed significantly in respect of number of grains/ear during both the years. The highest and the lowest values of the same were noted under sprouted and dry seeds respectively.

8. First irrigation given at 27 DAS gave significantly higher grain yield (32.28 q/ha) than others during 1983-84, however during 1984-85 the first irrigation given at 20 DAS resulted into significantly higher grain yield than other timings of irrigations.
Increasing doses of nitrogen from 0 to 120 kg/ha significantly increased the grain yield during 1983-84, however during 1984-85 the increase was significant only up to 80 kg/ha.

Their interaction showed that 120 kg N/ha with first irrigation either at 20 DAS or 27 DAS gave the highest grain yield.

The maximum grain yield was recorded in variety HD 2329 and minimum in HD 2285 during both the years. Variety HD 2329 remaining on par with HD 1553 but yielded HD 2285 during 1983-84.

Crop sown with sprouted seeds remaining at par with soaked seed condition was significantly superior to dry seed condition.

It is obvious from the findings summarised above that first irrigation given either at 20 or 27 DAS is superior to other times of first irrigation. A late sown wheat crop fertilized with 80 kg N/ha
when preceded by a leguminous crop and with 120 kg N/ha when preceded by a grassy crop gave better yields than other doses of nitrogen. Variety HD 2329 is superior to others (HD 1553 and HD 2285) under late sown conditions. It may be replaced by HD 1553 under limited or non-availability of seeds of HD 2329. For getting good yield under late sown conditions, seeds should be soaked or sprouted before sowing. These findings may be recommended to the farmers.