Chapter VI

SUMMARY AND CONCLUSION

A field experiment entitled “Studies on phosphorus and zinc in relation to growth and yield of barley (Hordeum vulgare L.)” was carried out during rabi season of the year 2005 and 2006 at Agricultural Research Farm, Sri Durga Ji Post Graduate College, Chandeshwar, Azamgarh (U.P.). Five levels of phosphorus i.e. 0, 20, 40, 60 and 80 kg/ha and four levels of zinc such as 0, 5, 10 and 15 kg/ha were tested in a factorial randomized block design with four replications. All the cultural practices other than treatments were adopted as per normal recommendations.

The silent features of the present investigation are summarized briefly as below:

6.1 EFFECT OF PHOSPHORUS APPLICATION

1. Phosphorus application with 80 kg/ha gave maximum increase in plant height over control and other levels of phosphorus.

2. Application of phosphorus with 80 kg/ha produced significantly more number of tillers per plant, than control and other doses.

3. Number of leaves significantly increased with increasing levels of phosphorus. Higher dose of phosphorus i.e. 80 kg/ha produced more number of leaves per plant at all successive stage of growth.

4. Lower dose of phosphorus induced early anthesis and maturity while higher dose of phosphorus delayed maturity.

5. Productive tillers per plant were increased significantly with increasing level of phosphorus up to 80 kg P_2O_5/ha.
6. Largest spike length was recorded with application of 80 kg P₂O₅/ha, while total number of spikelets was significantly improved with increasing levels of phosphorus. Application of 80 kg/ha brought about highest value of total spikelets.

7. Application of 80 kg P₂O₅/ha produced maximum number of grains per ear and per plant, while unfertilized plants gave least number of grains.

8. Highest grain yield per plant was observed with the application of 80 kg P₂O₅/ha, whereas minimum yield with control. The seeds were also recorded bolder with application of 80 P₂O₅/ha.

9. Maximum grain yield (q/ha) were recorded with the application of 80 P₂O₅/ha, which were significantly at par with 60 kg P₂O₅/ha.

10. Application of phosphorus significantly increased straw yield (q/ha) with successive levels of phosphorus.

11. Higher value of harvest index was observed with 80 kg P₂O₅/ha.

6.1 **EFFECT OF ZINC APPLICATION**

1. Application of Zn had significant effect on number of tillers per plant at all the stages of crop growth. However, higher dose of zinc (15 Kg Zn/ha) induced maximum number of tillers per plant.

2. Application of 15 kg zinc/ha produced taller plants than lower dose of zinc at all the stages.

3. Number of leaves per plant was recorded significantly higher due to increasing level of Zn, being highest with application of 15 Kg
Zn/ha, which was significantly at par with 10 Kg zinc at all the stages.

4. Days to maturity did not influenced due to zinc application at any stage.

5. Yield attributes i.e. effective number of tillers, spike length, total number of spikelets, number of grains per ear, grain yield per plant and test weight were significantly improved due to increasing level of Zn and found maximum due to application of 15 Kg Zn/ha.

6. Straw yield (q/ha) significantly increased with increasing level of zinc and maximum due to 15 Kg Zn/ha.

7. Application of 15 Kg Zn/ha brought about significant improvement in biological yield. Higher dose of zinc produced higher biological yield significantly.

**CONCLUSION**

On reviewing the results of the investigation it may be concluded that to insure maximum yield of grain and straw and remuneration from barley crop under irrigation condition of Azamgarh (U.P.), the crop may be treated with 80 kg P₂O₅ and 15 kg Zn/ha.