CHAPTER VI

SUMMARY AND CONCLUSION

The present investigation entitled, “Study of Sulphur and Zinc doses on mustard (Brassica juncea L.) in Alluvial soils of Allahabad”. The experiment was laid out at research Farm of K. A. P. G. College, Allahabad in two consecutive years i.e. during Rabi of 2009-10 and 2010-11 respectively under irrigated conditions. Four doses of sulphur i.e. @ 0, 20, 40 and 60 Kg/ha and four doses of Zinc i.e. @ 0, 4, 8 and 12 Kg/ha was applied as per treatments. The details of materials used, methods and experimental techniques adopted and observations recorded during the course of experimentation are described and discussed in relevant chapters and on the basis of available literatures with following objectives:

1. To assess the physico-chemical properties of soils of Allahabad
2. To study the effect of sulphur and zinc in relation to quality, yield and uptake of nutrients in mustard.
3. To study the relationship amongst yield, nutrient uptake and oil quality.

The main findings of present investigation are summarized as under:

1. Days to flowering was enhanced significantly due to use of higher doses of S and Zn (S4 and Zn4) application over lower doses and the crop showed lateness in flowering.
2. Days to maturity was also delayed significantly with application of higher doses of S and Zn (S4 and Zn4) over lower doses and the crop showed lateness in maturity.

3. The number of Siliqua per plant was increased significantly with application of higher doses of S and Zn (S4 and Zn4) over lower doses and which indicated the role of both the micronutrients in increasing number of Siliqua per plant.

4. The Siliqua length was increased significantly with application of higher doses of S and Zn (S4 and Zn4) over lower doses indicating the role of both the micronutrients in increasing the Siliqua length.

5. Number of Seeds per siliqua was also increased significantly with application of higher doses of S and Zn (S4 and Zn4) application over lower doses indicating the role of both the micronutrients in increasing the number of Seeds per siliqua.

6. Test weight was also increased significantly with application of higher doses of S and Zn (S4 and Zn4) over lower doses indicating the role of both the micronutrients in increasing the number of Seeds per siliqua.

7. Seed yield per plant was also increased significantly with application of higher doses of S and Zn (S4 and Zn4) over lower doses indicating the role of both the micronutrients in increasing the yield potential of Brassica.
8. Plant dry weight at Maturity was also increased significantly with application of higher doses of S and Zn (S4 and Zn4) over lower doses indicating the role of both the micronutrients in increasing the plant dry weight through carbon assimilation in Brassica.

9. The Seed yield (q) per ha was also increased significantly with application of higher doses of S and Zn (S4 and Zn4) over lower doses indicating the role of both the micronutrients in increasing the per hectare seed yield in Brassica.

10. The Stover Yield (q)/ha was also increased significantly with application of higher doses of S and Zn (S4 and Zn4) over lower doses indicating the role of both the micronutrients in increasing the per hectare stover yield in Brassica.

11. The Biomass yield (q)/ha was also increased significantly with application of higher doses of S and Zn (S4 and Zn4) over lower doses indicating the role of both the micronutrients in increasing the per hectare stover yield in Brassica.

12. Zinc content in seeds was also increased significantly with application of higher doses of S and Zn (S4 and Zn4) over lower doses indicating the role of both the micronutrients in increasing the Zinc content in seeds.

13. Zn uptake by seeds was also increased significantly with application of higher doses of S and Zn (S4 and Zn4) over lower doses indicating
the role of both the micronutrients in increasing the Zinc uptake by seeds.

14. Sulphur content in seeds was also increased significantly with application of higher doses of S and Zn (S4 and Zn4) over lower doses indicating the role of both the micronutrients in increasing the Sulphur content in seeds.

15. Sulphur uptake by seeds was also increased significantly with application of higher doses of S and Zn (S4 and Zn4) over lower doses indicating the role of both the micronutrients in increasing the Sulphur uptake by seeds.

Oil content (%) in seeds was increased significantly with application of higher doses of S and Zn (S4 and Zn4) over lower doses indicating the role of both the micronutrients in increasing the oil content in seeds and oil yield per unit area.

16. Iodine value in oil was also increased significantly with application of higher doses of S and Zn (S4 and Zn4) over lower doses indicating the role of both the micronutrients in increasing the Iodine value.

17. Protein content in seeds (%) showed significantly increasing trends with application of higher doses of S and Zn (S4 and Zn4) over lower doses indicating the role of both the micronutrients in increasing the Protein content in seeds.
CONCLUSION

On the basis of present investigation as summarized above it can be concluded that the soils of north India showed significant deficiencies in S and Zn content due to non awareness of growers while both S and Zn are essential micronutrient for crop production. The status of soils revealed low to very low availability of both sulphur and zinc in soils of the Allahabad District.

In oilseeds production the importance of both the nutrients are well established as they are a part of several biosynthetic pathways and componental parts of some basic and secondary metabolites hence adequate availability of both the nutrients are must for the successful production of mustard. In present study application of 40-60 kg/ha Sulphur and 8-12 Kg/ha Zinc is helpful for getting maximum yield and better harvest in Brassica crops.

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