SUMMARY

This investigation aimed the increase of fruit yield and capsaicin content by studying the effects of water regimes and chemical cytokinens spraying on growth, fruiting and chemical composition of Capsicum annuum L.

The experiments were carried out during two successive years of 1981 and 1982 at the Experimental Station, Faculty of Agriculture at Moshtohor, Zagazig University.

In a split plot design 6 water regimes involving quantity of water and water supply intervals were in the main plots. The sub-plots treatments included the application of two growth regulators namely (PBA) (6(benzylamino)9(2-tetrahydropyronyl) 9.H purine) and NPA (6(benzylamino)9(2-tetrahydropyranyl)4H nicotinamide).

The most important results are :

1. The minimum amount of water supply produced the highest number of branches on pepper plants.
2. Maximum amount of watering at 5-day interval gave the least number of branches.

3. Water stress due to longer intervals of irrigation seriously decreased the number of fruits carried on the plant.

4. Adequate and high amounts of water supply significantly increased fruiting.

5. Moderate amounts of water at short intervals as 5-days economically produced a good crop in both number and fresh weight.

6. Decreasing water supply may increase the fresh weights of vegetative organs but fruiting was seriously decreased.

7. The highest percentage of dry matter of fruits was corncided with irrigation every 10 days.

8. Spraying PBA at 100 ppm increased the number of branches especially those subjected to drought conditions.

9. Application of PBA increased fruit-set and fresh weight of fruits.

10. The application of PBA may improved the flower and fruit drop in crops grown under drought conditions.

11. NPA at the proposed concentrations has deteriorating effects on fruit-set of pepper.

12. Pepper plants can be grown under moderate amounts of water as 4300 M^3/feddan and sprayed by 100 ppm of PBA for better yield.

13. Shortage of water supply as (quantity or longer intervals of irrigation increased capsaicin ingredient in fruits of pepper.

14. PBA at 100 ppm generally increased capsaicin content except with plants subjected to long intervals of irrigation.

15. PBA may be applied to increase capsaicin in fruits of plant grown under high or moderate water regimes.

16. The concentration of PBA as 200 ppm decreased capsaicin in pepper fruits by 82 % for plants grown under long intervals of irrigation.

17. NPA increased the capsaicin only with plants grown under frequent and abundant water supply.

18. Carbohydrate percentages were high in leaves of plants grow under moderate amounts of water, and increased by PBA application.

19. Treatment (A) with 200 ppm of PBA or NPA increased the percentages of (a) and (b) chlorophyll.