SUMMARY & CONCLUSIONS

Three field experiments were conducted at the Research and Experimental Station of the Faculty of Agriculture at Moshtohor, Zagazig, University in the three successive growing seasons of 1980, 1981 and 1982.

Soil texture of the experimental plots was clay.

This investigation was carried out to study the effect of some soil tillage practices on growth and yield of cotton. The aim of this study was to select the optimum tillage practices producing improved soil properties and sequently higher yield is resulted.

The experiment included 10 treatments which were the combination of two subsoiling treatments and five different tillage methods.

The applied treatments were :-

A. Subsoiling :-

1. Without subsoiling
2. With subsoiling

B. Seedbed preparations :-

1. One way ploughing with Baladi (15 cm depth).
2. One way chiselling (20 cm depth).
3. One way chiselling followed by one way harrowing (20 cm depth).

4. Two ways chiselling (20 cp depth).
5. Two ways chiselling followed by two ways harrowing (20 cm depth).

The experiments were designed in a split plot design. The obtained results could be cummarized as follows :

1. One way ploughing either with Baladi or chisel plough had no effect on bulk density and porosity on the all hand.
2. One way chiselling followed by one way harrowing increased soil porosity decreased bulk density.
3. Dry weight of roots was significantly affected by frequency of ploughing and harrowing.
4. The effect of frequency of ploughing and harrowing were significant on the dry weight of leaves/plant.
5. There was a significant effect of frequency of ploughing and harrowing on the dry weight of stems.
6. Plant height of cotton was significantly affected by two ways chiselling followed by two ways harrowing.
7. Two ways chiselling followed by two ways harrowing increased number of open bolls/plant.
8. There was a significant effect of the frequency of ploughing and harrowing on the seed cotton yield in the three studied seasons.
9. Subsoiling operation increases soil porosity and decreases soil bulk density.

10. The effect of subsoiling operations were significant on the dry weight of roots. Using subsoiling produced the highest dry weight of roots/plant.
11. Dry weight of leaves was significantly affected by subsoiling operations. Dry weight of leaves increased by using subsoiling.
12. The effect of subsoiling treatment were significant on the dry weight of stems/plant. Dry weight of stems significantly increased by using subsoiling.
13. Plant height of cotton was significantly affected by subsoiling operation. The heighest plants were obtained by using subsoiling.
14. Subsoiling operation increases the number of open bolls/plant.
15. Seed cotton yield was significantly affected by using subsoiling. Subsoiling operation increases seed cotton yield by 13 % to other treatments.
16. There was no significant effect of the interaction between subsoiling and seedbed preparation on soil bulk density, porosity and salinity of soil.
17. The highest increase in dry weight of different organs of cotton plant was obtained by two ways chiselling followed by two ways harrowing with subsoiling.
18. Number of open bolls/plant was not significantly affected by the interaction between subsoiling and seedbed preparation.

19. Seed cotton yield was significantly affected by the interaction. The highest seed cotton yield was obtained by two ways chiselling followed by two ways harrowing with subsoiling.

In conculosion frequency of ploughing and using subsoiling increase the yield of cotton, but there is a little benefit in using two ways harrowing compared with the cost of frequency of harrowing.