5- SUMMARY AND CONCLUSIONS

Although guava is considered a popular and cheap fruit, but its cultivation is faced by a limitation owing to tree variability in all tree characteristics (growth, fruiting and fruit quality) as a result of being arised from seed multiplication. In order to encourage horizontal and vertical expansion of guava production, one can select some trees to be clones or varieties on the bases of tree productivity and fruit quality. Furthermore, the selected trees should be maintained genetically constant through vegetative propagation. Consequently, the presnt study includes two parts:

Part I: Evaluation of some seedling guava trees

This study was carried out through two consecutive seasons 1985 and 1986 on twenty-nine seedling guava trees of 7 years-old, grown at 5x5 m. apart on clay loam soil at the Experiment Station of the Faculty of Agriculture, Moshtohor. The trees were nearly similar in size. The obtained results could be summarized as follows:

I- Tree growth

I.1- Vegetative growth

a- All the studied trees varied greatly in all growth phases i.e. shoot length, increase in shoot length, No. of leaves/shoot, leaf length, width and shape. As well as leaf dry weight and leaf area.

b- As for the relationship between leaf area its length and width, it was found that:

leaf area= 0.70 x leaf length (cm.) x leaf width (cm.)

I. 2- Leaf nutrients content

The trees under study differed greatly in their leaf nutrients content of nitrogen, phosphorus, potassium, calcium and magnesium.

II- Fruit set and fruit drop

Fruit set percentages of the studied trees were high, since it ranged between 88.10-96.81%, meanwhile, fruit June drop varied between 16.61-26.17%, while preharvest drop ranged between 5.76-12.39%. All the studied trees differed in fruit set, June drop and preharvest drop.

III- **Fruiting**

a- Trees L_7 & L_8 & M_{10} & M_{12} & H_2 and L_9 gave the highest yield as kg./tree.

b- Trees L_7 and L_8 produced the largest number of fruits/tree as compared with other trees.

c- The highest values of yield as kg./cm^2 of trunk-cross sectional area were obvious with trees J_{10} & L_8 & H_2 & D_1 and L_7.

V - **Fruit quality**

1- **Fruit physical properties**

All trees showed great differences in all fruit physical properties i.e. fruit weight, length, diameter, index, pulp thickness, pulp firmness, seeds weight, percentage, seeds number, weight of 100 seeds, and fruit colour.

2- **Fruit chemical properties**

a- Fruits of trees F_1 & J_{11} & F_7 & A_2 & L_5 and J_1 contained the highest percentage of total soluble solids.

b- Trees M_{10} & D_6 & L_4 & H_{11} & L_2 & L_7 & L_8 & D_1 & J_{12} and L_9 produced fruits with the lowest content of acidity.

c- The highest ratios of T.S.S./acid were found with fruits of trees L_4 & L_2 & D_6 & M_{10} & L_7 and L_8.

d- The richest fruits in ascorbic acid content were produced by trees H_2 & J_1 & M_{12} & J_9 & L_{10} & J_6 & J_9 & B_3 & L_8 & K_9 and L_{12}.

e- Fruits of trees J_{11} and F_1 contained the highest percentage of total sugars as compared with those of other trees.

V- Evaluation of seedling guava trees

Some fruit physical and chemical properties of great importance in determining fruit quality were considered in evaluating the studied trees. These properties were: fruit weight, pulp thickness, seed percentage, acidity, total soluble solids percentage, vitamin C. In addition, tree yield is considered by great value in evaluating trees, therefore it is assumed to resemble four characteristics. Consequently, the evaluation study resulted in selecting two seedling trees. They were L_8 and L_7 which can be used in vegetative propagation as horticultural clones, owing to their superiority in both yield and fruit eating quality, whereas, tree M_{10} is recommended for producing high yield for canning processes.