This study was conducted during two consecutive seasons of 1993 and 1994 seasons at the Experimental Station of the faculty of Moshtohor, Qalyubia Governorate. Sixty guava trees cv. El-Maamora of 13 - year - old planted at 5 x 5 m. apart and grown on clay soil were fertilized with nitrogen at 300 or 600 g/tree in the form of ammonium sulphate (20.6%) applied in two doses a year, i.e. mid-April and mid-June, or nitrogen supported with phosphorus at 100 or 200 g in the form of calcium superphosphate (15.5 % P2O5) applied in mid-December. Also, the trees were fertilized with different combinations of nitrogen (300 or 600 g/tree) + phosphorus (100 or 200 g/tree) + potassium at 100 or 200 g/tree in the form of potassium sulphate (48 % K2O) applied in mid-April. Anyhow the tested treatments were arranged in a randomized complete block design with four replications for each treatment and each replicate was represented by one tree. The different levels of nitrogen supported with phosphorus or nitrogen supplemented with phosphorus and potassium fertilizers were evaluated through their effect on tree growth, leaf mineral content, three fruiting and fruit quality.

However, the obtained results could be summarized as follows:

**5.1. Tree Growth**

Fertilizing guava trees with nitrogen lonely or nitrogen supplemented with phosphorus fertilizers improved all studied tree growth parameters, i.e., shoot length increase, increase in number of leaves per shoot, leaf dimensions (length and width) and leaf surface area. Furthermore, supplementary addition of potassium fertilizer to nitrogen + phosphorus- fertilized trees induced more stimulating effect on the previously tree growth parameters. Briefly, (600 g N + 200 g P2O5 + 200 g K2O)- fertilized guava trees gave the highest values of the studied tree growth parameters.
Nitrogen fertilization (300 and 600 g/tree) enhanced leaf nitrogen content and caused insignificant increase in leaf phosphorus, potassium, calcium, magnesium, iron, manganese and zinc content. Besides, nitrogen fertilization supplemented with phosphorus fertilization improved leaf content of nitrogen, phosphorus and calcium and caused slight increase in other studied leaf mineral content. Moreover, the combination of nitrogen, phosphorus and potassium fertilization enriched leaf content of nitrogen, phosphorus, potassium, calcium, iron and zinc.

Fertilizing guava trees with nitrogen (300 and 600 g/tree), only enhanced tree productivity through increasing fruit set percentage, reducing June drop and pre-harvest drop of fruits and consequently increasing tree yield as number of fruits per tree or yield (kg) per tree. Moreover, the previously fruiting parameters were enhanced when nitrogen fertilization was supported with phosphorus fertilization (100 and 200 g/tree). Finally, the highest yields were obtained when guava trees were fertilized with nitrogen + phosphorus + potassium. Anyhow, the high levels of nitrogen, phosphorus and potassium (600 g N + 200 g P2O5 + 200 g K2O)-fertilized guava trees produced comparatively the highest yield.
5.4. Fruit Quality

5.4.1. Fruit physical properties

Guava trees fertilized with nitrogen (300 and 600 g/tree) lonely or in combination with phosphorus (100 and 200 g/tree) produced statistically similar positive effect on fruit weight, fruit length, fruit diameter, pulp thickness and reduced pulp firmness. On the other hand, fruit content of seed did not show any significant response to nitrogen fertilization lonely or in combination with phosphorus and potassium fertilization. Meanwhile, supporting nitrogen + phosphorus fertilization with potassium fertilization (100 and 200 g/tree) exerted more stimulative effect on fruit weight, fruit length, fruit diameter and pulp thickness and induced more reductive effect on fruit firmness.

5.4.2. Fruit chemical characteristics

5.4.2.1. Total soluble solids

Generally, nitrogen fertilization (300 and 600 g/tree) lonely or in combination with phosphorus fertilization (100 and 200 g/tree) enriched fruit content of total soluble solids. The addition of potassium fertilization (9 100 and 200 g/tree) greatly enhanced fruit content of total soluble solids.
15.4.2.2. Total acidity

Total acidity of guava trees was significantly reduced due to nitrogen fertilization whether applied lonely or in combination with phosphorus fertilization. The addition of potassium fertilization to nitrogen + phosphorus - fertilized trees caused highly reduction in fruit total acidity.

5.4.2.3. Ascorbic acid

Nitrogen fertilization alone or in combination with phosphorus fertilization failed to induce any significant effect on fruit ascorbic acid content. Meanwhile, supplementing nitrogen + phosphorus - fertilized trees with potassium fertilization (100 and 200 g/tree) greatly enhanced fruit content of ascorbic acid.

5.4.2.4. Total sugars

Nitrogen fertilization at 300 or 600 g/tree lonely or in combination with phosphorus fertilization (100 and 200 g/tree) exerted statistically similar positive effect on fruit content of total sugars. On the other hand, the addition of potassium fertilization to nitrogen + phosphorus- fertilized trees caused marked increase in sweetness of guava fruits.
Fertilizing guava trees with nitrogen (300 and 600 g/tree) or nitrogen supplemented with phosphorus fertilization (100 and 200 g/tree) enhanced tree growth, leaf mineral content, tree productivity and improved fruit quality. Moreover, supplementing nitrogen + phosphorus fertilization with potassium fertilization exerted more stimulative effect on tree growth, leaf mineral content, tree yield and fruit quality.

Consequently, under similar conditions to that of the conducted experiment, it can be recommended to fertilize guava trees with 600 g N (in the form of ammonium sulphate), 200 g P2O5 (in the form of calcium superphosphate) and 200 g K2O (in the form of potassium sulphate) to obtain high yield of good fruit quality.