Aswan University Journal of Sciences and Technology Volume 5, issue 2, June 2025

Evaluation fruit characteristics of some mango cultivars grown under Aswan conditions

A.M. El Salhy[*], E.H. Salem[**], and A.A. Gawad[**]

[*] Pomology Dept., Faculty of Agriculture, Assiut University, Assiut, Egypt.

[**] Horticulture Dept., Faculty of Agriculture and Natural Resources, Aswan University, Aswan, Egypt.

Abstract

The present study was carried out to evaluate seven mango varieties namely Keitt, Kent, Naoumi, Tommy, Yasmina, Shelly and Jolk during 2019, 2020 and 2021 seasons. Thirty-five (five trees x seven cultivars) 11 years old mango trees planted in a private mango orchard located at Drow region Aswan governorate. Evaluation parameters included: fruit physicals and chemicals properties were determined in these mango cultivars. Results showed that there was a wide and major variation of these parameters among the studied cultivars. Mango cvs. Keitt, Kent, Naoumi, Shelly, Yasmina, Tommy and Jolk in descending order it could be recommended that, Keitt, Kent, Naoumi and Shelly to be cultivated successfully under Aswan conditions, based better fruit quality.

Keywords: Mango cultivars, growth, fruit, Aswan conditions.

Introduction

Mango has great adaptability and thrives in a wide range soil and climatic conditions. Also, it has relatively hardly nature, low cost of culture and maintenance. Mango is the most popular fruit of the orient and has been called king of the fruits. Mangoes are cultivated in more than 100 countries especially India, Pakistan, Mexico, Philippines, Brazil, China, Bangladesh and Other countries of south East. It is also grown successfully in Egypt in the most regions. In Egypt, mango is considered among the principle and strategic fruit crops and it considered among the principle and strategic fruit crops and it ranks the second position after citrus.

In Aswan region where the present study took place, mango ranks the second crop after date palms, since it occupies more than 15000 feddans produced 22070 metric tons fruit. Additionally, in Egypt, the total cultivated area with mango reached 321040 fed. in 2021 statistics (Ministry of Agriculture, Egypt). The average yield per feddan is only 3.33 Ton. Generally, in spite of the fact that Egypt has good opportunity for mango production, productivity of different mango varieties is associated with soil and climatic conditions [1]. Overcoming the incomplete understanding about the prime mango cv.s grown successfully in Aswan region is necessary as a guide for mango growers. Different varieties of mango were varied in their performance and these differences are governed by genetical and environmental factors. Previous studies showed that there were wide differences on growth and cropping behaviours among various mango varieties grown under various climatic conditions **[2, 3, 4, 5, 6, 7, 8, 9, 10]**. This study was an attempt to know more about growth and yield of mango cvs. Keitt, Kent, Naoumi, Tommy, Yasmina, Shelly and Jolk grown under Aswan region conditions.

Therefore, the aim of this study was an attempt to know more about fruit quality and the susceptibility of seven mango cultivars growing in Aswan region. This assessment could provide valuable information to prescribe the prime mango cultivars having higher fruit quality which can be cultivated successfully under Upper Egypt environmental conditions.

[*]Corresponding author E-mail: ahmed.gawad23@gmail.com

Received March 24, 2024, received in revised form, May 07, 2024, accepted May 07, 2024.

(ASWJST 2021/ printed ISSN: 2735-3087 and on-line ISSN: 2735-3095) https://journals.aswu.edu.eg/stjournal

Materials and Methods

The present study was carried out to evaluate seven mango varieties namely Keitt, Kent, Naoumi, Tommy, Yasmina, Shelly and Jolk during 2019, 2020 and 2021 seasons. Thirty-five (five trees x seven cultivars) 11 years old mango trees planted in a private mango orchard located at Drow region Aswan governorate, at 3x3.5 meters in sandy soil, and drip irrigated with Nile water was adopted were carefully choosing. All the showed trees received similar and regular horticultural practices which are already applied in the mango orchard. The experiment set up in complete randomized block design. Evaluation continued through three successive seasons in 2019, 2020 and 2021 seasons. Pomological characteristics of fruit: including physical fruit properties i.e fruit weight (g) and edible portions, and chemical fruit properties i.e total soluble solids % , total and reducing sugars % , total acidity % (as g a citric acid/100 ml juice) and vitamin C content (mg/100 ml juice) were determined according to **[11]**. The obtained data were statistically analyzed according to the procedures outlined by **[12]** using new L.S.D test at 5% to approve the differences between mango varieties statistically.

Numerical evaluation of the mango cultivars. Evaluation of the tested mango cultivars at the average of three studied was calculated on the basis of 100 units which were divided among the various fruit quality according to **[13]**. 40 units for physical fruit traits and 60 units for chemical fruit characteristics. Ten units for each of the characteristics of pulp %, seed %, total sugar, reducing sugar, V.C and acidity. On other hand, twenty units for fruit weight and TSS contents. Each cultivar that gave the best results in any character was given the full mark specified for this character, while each of the other tested cultivars took lower units to their qualities.

Results and discussion

Physical and chemical characteristics of the fruit:

Data of various fruit characteristics of some mango cultivars grown under Aswan condition during 2019, 2020 and 2021 seasons are presented in Tables 1 to 5. It was obvious from the data that results took a similar trend during the three studied seasons. Data indicated that fruit weight, pulp %, total soluble solids %, total and reducing sugars %, total, acidity %, and vitamin C content were significantly varied among the seven mango varieties. The largest fruits were recorded in Keitt, Naoumi and Kent mango cvs, in ascending order.

The obtained fruit weight was 466.8, 450.3, 456.7, 378.5, 373.6, 325.2 and 316.8 g as an av. of the three studied seasons, for Keitt, Kent, Naoumi, Tommy, Yasmina, Shelly and Jolk mango cultivars, respectively. The corresponding increment percentage of fruit weight of studied cultivars over Jolk attained 47.35, 42.14, 44.16, 19.48, 17.93 and 2.65% for Keitt, Kent, Naoumi, Tommy, Yasmina and Shelly mangoes, respectively. On other hand, the small fruits were recorded in Jolk and Shelly cultivars in ascending order.

The maximum values of total soluble solids and total and reducing sugars were recorded in Shelly and Jolk mangoes cultivars. Whereas, Naoumi and Tommy mangoes cultivar had the highest values of vitamin C. On other hand, Shelly and Yasmina cvs. had lower content of vitamin C. It could be concluded from the obtained results that the seven mango varieties are widely different in their fruit quality.

Table (1): Fruit weight (g), pulp % and seed % of some modern mango varieties under Upper Egypt conditions 2019, 2020 and 2021 seasons.

Charact. / Cultivar	Fruit weight (g)				Pulp %				Seed %			
	2019	2020	2021	M	2019	2020	2021	M	2019	2020	2021	M
Keitt	436.1A	475.1A	489.3A	**466.8 A**	76.83B	74.25B	77.86B	**76.31B**	9.26E	8.95 E	9.36D	**9.19 E**
Kent	405.6B	461.3A	483.9A	**450.3 B**	75.66B	76.83B	78.86B	**77.12B**	9.21E	9.28D	9.60CD	**9.36 E**
Naoumi	416.4AB	459.8A	493.8A	**456.7AB**	76.20B	73.71B	76.90B	**75.60B**	10.30B	10.11C	10.36B	**10.26C**
Tommy	353.4 C	385.8B	396.2B	**378.5 C**	77.03B	75.58B	77.80B	**76.80B**	10.14C	9.96 C	10.23B	**10.11C**
Yasmina	351.5 C	381.4B	387.8B	**373.6 C**	76.51B	74.62B	76.29B	**75.81B**	10.95A	10.63A	10.88A	**10.80A**
Shelly	303.9 D	332.5C	339.1C	**325.2 D**	76.47B	75.42B	77.11B	**76.33B**	10.58B	10.43B	10.65A	**10.55B**
Jolk	298.5 D	321.8C	330.1C	**316.8 D**	81.46A	83.51A	82.82A	**82.60A**	9.81 D	10.03C	9.92 C	**9.92D**
LSD	**21.28**	**23.94**	**25.71**	**13.68**	**3.61**	**3.19**	**3.55**	**2.08**	**0.29**	**0.26**	**0.32**	**0.18**

Table (2): Fruit width (cm) and Fruit length (cm) of modern mango varieties under Upper Egypt conditions 2019, 2020 and 2021 seasons.

Charact. / Cultivar	Fruit width (cm)				Fruit length (cm)			
	2019	2020	2021	M	2019	2020	2021	M
Keitt	7.99 C	8.67 C	8.91 D	**8.52 D**	10.72B	11.62BC	11.93BC	**11.42B**
Kent	9.91 A	10.72A	11.20A	**10.61A**	11.90A	13.08 A	13.74A	**12.91A**
Naoumi	8.47 B	9.28 B	9.68 B	**9.14 B**	11.65A	1290 A	13.61 A	**12.72A**
Tommy	8.48B	9.04 B	9.27 C	**8.93 C**	10.93B	11.80 B	12.13 B	**11.62B**
yasmina	8.17 C	8.76 C	8.87 D	**8..60 D**	10.55B	11.31 C	11.49 C	**11.12C**
shelly	7.80 D	8.37 D	8.55 E	**8.24 E**	9.73 C	10.54 D	10.74 D	**10.33D**
jolk	6.19 E	6.61 E	6.76 J	**6.52 J**	9.41 C	10.06 D	10.28 D	**9.92 E**
LSD	**0.26**	**0.29**	**0.31**	**0.18**	**0.42**	**0.46**	**0.45**	**0.27**

Table (3): Total soluble solid and total sugars contents of some modern mango varieties under Upper Egypt conditions 2019, 2020 and 2021 seasons.

Charact. / Cultivar	TSS%				Total sugars%			
	2019	2020	2021	M	2019	2020	2021	M
Keitt	14.2 C	13.6 D	14.5 D	**14.1 E**	12.0 B	11.5 B	12.2 B	**11.9 B**
Kent	14.7BC	14.3 C	15.1 C	**14.7 C**	11.5 C	10.8 C	11.6 C	**11.3 C**
Naoumi	14.6 C	13.9CD	14.9CD	**14.5CD**	11.9 B	11.3 B	12.2 B	**11.2 C**
Tommy	14.4 C	13.8 D	14.7CD	**14.3DE**	11.3 C	10.8 C	11.5 C	**11.2 C**
Yasmina	14.3 C	14.0CD	14.8CD	**14.4 D**	10.8 D	10.5 C	11.2 C	**10.8 D**
Shelly	16.7 A	16.1 A	16.9 A	**16.6 A**	13.1 A	12.4 A	13.2 A	**12.9 A**
Jolk	15.1 B	14.9 B	15.6 B	**15.2 B**	10.4 E	9.9 D	10.6 D	**10.3 E**
LSD	**0.48**	**0.41**	**0.45**	**0.26**	**0.35**	**0.31**	**0.42**	**0.21**

Table (4): Reducing sugar % and non-reducing sugar contents of modern mango varieties under Upper Egypt conditions 2019, 2020 and 2021 seasons.

Charact. / Cultivar	Reducing sugar %				Non-reducing %			
	2019	2020	2021	M	2019	2020	2021	M
Keitt	4.6B	4.4 B	4.8 A	**4.6 B**	7.4 BC	7.1 BC	7.4 B	**7.3 B**
Kent	4.1 D	3.9 D	4.3 C	**4.1 E**	7.4 BC	6.9 BC	7.3 B	**7.2 C**
Naoumi	4.3 C	4.1 C	4.5 B	**4.3 C**	7.6 B	7.2 B	7.7 B	**7.5 B**
Tommy	4.2 C	4.0 C	4.4 B	**4.2 D**	7.1 C	6.8 C	7.1 C	**7.0 C**
yasmina	4.6 B	4.4 B	4.8 A	**4.6 B**	6.2 D	6.1 D	6.3 D	**6.2 D**
shelly	4.9 A	4.6 A	4.9 A	**4.8 A**	8.2 A	7.8 A	8.3 A	**8.1 A**
jolk	2.9 E	2.8 E	3.0 D	**2.9 F**	7.5 B	7.1 B	7.6 B	**7.4 B**
LSD	**0.12**	**0.12**	**0.14**	**0.08**	**0.38**	**0.32**	**0.41**	**0.24**

Table (5): Total acidity and V.C. of some modern mango varieties under Upper Egypt conditions 2019, 2020 and 2021 seasons.

Charact. / Cultivar	Total acidity				V.C. mg/100g			
	2019	2020	2021	M	2019	2020	2021	M
Keitt	0.244 B	0.232 B	0.247 B	**0.241 C**	37.3 C	39.1 C	39.7 C	**38.7 C**
Kent	0.255 B	0.243 B	0.258AB	**0.252 B**	35.1 D	36.5 D	37.3 D	**36.3 D**
Naoumi	0.271 A	0.259 A	0.274 A	**0.268 A**	46.2 A	48.1 A	48.8 A	**47.7 A**
Tommy	0.220 C	0.209CD	0.222 C	**0.217 E**	40.7 B	42.5 B	43.1 B	**42 .1 B**
yasmina	0.202 D	0.195 D	0.205 D	**0.201 F**	32.9 E	34.4 E	34.6 E	**33.9 E**
shelly	0.203 D	0.198 D	0.209CD	**0.203 F**	30.6 F	32.4 F	32.6 F	**31.8 F**
jolk	0.229 C	0.219 C	0.233BC	**0.227 D**	35.1 D	36.4 D	36.7 D	**36.0 D**
LSD	**0.014**	**0.012**	**0.016**	**0.009**	**1.99**	**1.83**	**1.95**	**1.13**

Numerical evaluation of the mango cultivars strains

Data illustrated in Table (6) showed that the numerical evaluation of the mango cultivars under study and growing in Aswan governorate, in the average of 2019, 2020 and 2020.The data in table 6 showed that, there were great differences in the numerical evaluation of fruit quality. Keitt, Naoumi and Kent gave high values compared to the rest of the cultivars, and their values were 91.4, 90.5 and 89.0 units, respectively. Meanwhile, the Shelly, Tommy, Yasmina and Jolk cultivars gave the lowest values and in descending orders as follows (88.4, 87.4, 86.1 and 81.6 units), respectively.

Table (6): General evaluation of studied mango cultivars as average of the three studied seasons (2019, 2020 and 2021).

Charac.	Physical fruit traits				Chemical fruit traits						
Sub cultivar	**Fruit weight**	**Pulp %**	**Seed %**	**Total**	**TSS**	**Total sugar**	**Red-sug.**	**V.C**	**Acidity**	**Total**	**Grand total**
Score units	**20**	**10**	**10**	**40**	**20**	**10**	**10**	**10**	**10**	**60**	**100**
Keitt	20.0	9.2	10	**39.2**	17.0	9.2	9.6	8.1	8.3	52.2	**91.4**
Kent	19.3	9.3	9.8	**38.4**	17.7	8.8	8.5	7.6	8.0	50.6	**89.0**
Naoumi	19.6	9.2	9.0	**37.8**	17.5	8.7	9.0	10.0	7.5	52.7	**90.5**
Tommy	16.2	9.3	9.1	**34.6**	17.2	8.7	8.8	8.8	9.3	52.8	**87.4**
Yasmina	16.0	9.2	8.5	**33.7**	17.3	8.4	9.6	7.1	10.0	52.4	**86.1**
Shelly	13.9	9.2	8.7	**31.8**	20.0	10.0	10.0	6.7	9.9	56.6	**88.4**
Jolk	13.6	10.0	9.3	**32.9**	18.3	8.0	6.0	7.5	8.9	48.7	**81.6**

Discussion

In the present study, potassium silicate and amino acids were utilized to enhance fruit characteristics and yield of Barhee date palm. Amino acids are one of the most widely applied bio stimulants in agriculture field **[4].**

Potassium is important in the formation and function of proteins, fats carbohydrates and chlorophyll and in maintaining the balance of salts and water in plant cell **[27].** It activates many different enzymes involved in plant growth and vigor. Also, it enhanced root growth, drought and salinity resistance, sugars translocation and respiration reduction, as well as water loss as resulted regulating the opening and closing stomata. Potassium essential for photosynthesis, water and nutrient transport and plant cooling, hence, increases resistance of plants to biotic and abiotic stresses **[28, 29].** Hence, using potassium improves qualitative aspects of production such as color, taste consistency and preservation of many fruits. It showed a main role in controlling cell water content, carbohydrates biosynthesis and mobilization in plant tissues, then play a serious role in fruit retention. The increment in fruit physical characteristics may be due to the potassium application, where it plays an important role in pH stabilization, osmoregulation, enzyme, activation, protein synthesis, stomatal movement, photosynthesis, cell extension and important soluble in expanding **[7].**

The importance role of potassium fertilization on the fruiting of date palm was confirmed by the results of **[11, 13, 14, 15, 16, 18, 19].** They concluded that potassium is very effective in improving fruiting especially when applied with the optimum rate of N and P fertilizers. Spraying the potassium was very effective in improving the yield and fruit quality.

They are substances that promote plant growth, increase nutrient availability, and enhance quality attributes. Moreover, amino acids can act as precursors to produce secondary metabolites and signaling molecules in plant cell under stressed and non-stressed conditions **[4]** In this regard, several studies reported the positive effect of amino acids in improving fruit attributes and yield **[30, 31, 19].**

Conclusion

From the current study, it can be concluded that fruit yield and fruit physical and chemical characteristics were improved significantly by thrice foliar application of bunches with 0.5% potassium silicate alone or combination with 2% amino acids. These treatments were the best and the most effective treatments in enhancing yield and improving fruit quality of Barhee date palms.

References

1. El-Masry, H.M.; Said-Galila, A. Mango Varieties in Egypt; Hort. Service Unite, Agric. Ministry: Egypt, 1998; pp. 1–233.
2. Tawfik, E.S.B. Evaluation of Some Export Mango Cultivars Grown in Egypt. Ph.D. Thesis, Assiut University, Assiut, Egypt, 2003.
3. Kumar, N.; Jaiswal, U.S. Bearing behaviour of some south and west Indian mangoes. Haryana J. Hort. Sci. 2004, 33, 9–10.
4. Araujo, E.C.E.; Santos, E.P.; Prado, C.H.B.A. Leaf area estimation of mango (*Mangifera indica* L.) cvs. Tommy Atkins and Haden, using linear dimensions. Rev. Bras. Frutic. 2005, 27, 308–309.

5. Human, C.F. Production areas. In The Cultivation of Mango; de Villiers, E.A., Joubert, P.H., Eds.; ARC-Institute for Tropical and Subtropical Crops: Florida, South Africa, 2008; pp. 5–64.
6. Shaban, A.E.A. Vegetative growth cycles of some mango cultivars in relation to flowering and fruiting. World J. Agric. Sci. 2009, 5, 751–759.
7. Reddy, V.S.; Lingaiah, H.B.; Krishnappa, K.S.; Shankaranarayana, V.; Venkataramana, P.; Reddy, M.N.N. Evaluation of mango varieties for the eastern dry zone of Karnataka. J. Agric. Sci. 2011, 45, 107–110.
8. Abourayya, M.S.; Kassim, N.E.; El-Sheikh, M.H.; Rakha, A.M. Evaluation of vegetative growth of Tommy Atkins, Kent and Keitt mango cultivars grown under Nubariya conditions. J. Appl. Sci. Res. 2012, February, 887–895.
9. El-Khawaga, A.S.; Maklad, M.F. Evaluation of growth and productivity of some mango varieties grown under Aswan climatic conditions. Sinai J. Appl. Sci. 2013, 1, 169–178.
10. Haseeb, G.M.; Ghounim, I.E.S.; Hmmam, I.; Mustafa, M.R. Evaluation of four newly introduced mango (*Mangifera indica* L.) cultivars grown under El-Giza conditions. Plant Arch. 2020, 20, 9405–9410.
11. AOAC. Official Methods of Analysis, 16th ed.; AOAC International: Washington, DC, USA, 1995.
12. Snedecor, G.W.; Cochran, G.W. Statistical Methods, 6th ed.; Iowa State University Press: Ames, IA, USA, 1972; pp. 50–67.
13. Hamad, A.S.A. Evaluation of some mango seedling strains grown under Aswan region. SVU-Int. J. Agric. Sci. 2021, 3, 58–71.
14. El-Salhy, A.M.; Ibrahim, R.A.; Abou-Zaid, E.A.A.; Ali, M.A. Comparative study of some pomegranate cultivar (Punica granatum L.) under Assiut climatic conditions. Assiut J. Agric. Sci. 2019, 50, 134–149.
15. Said, H.H.M. Evaluation of Some Mango Cultivars Grown under Aswan Conditions. M.Sc. Thesis, Minia University, Minia, Egypt, 2001.
16. Hoda, M.N.; Singh, S.; Singh, J. Evaluation of ecological groups of mango (*Mangifera indica* L.) cultivars for flowering under Bihar conditions. Indian J. Agric. Sci. 2003, 73, 101–105.
17. Abd El-Hadi, S.M.K. Evaluation Studies on Some Mango Varieties. M.Sc. Thesis, Al-Azhar University, Cairo, Egypt, 2006.
18. Khattab, M.M.; Hegazy, A.A.; Ezzat, R.M. Evaluation of some mango cultivars under East Owainat region. Egypt. J. Appl. Sci. 2007, 22, 198–212.
19. Shivanadam, V.N.; Shashidhara, V.; Sivappa. Growth, flowering and yield behavior of mango varieties and hybrids under eastern dry zone of Karnataka. Environ. Ecol. 2007, 25(Special), 1088–1090.
20. Sweidan, A.M.; Khattab, M.M.; Haseeb, G.M.; El-Kheshin, M.A. Evaluation of some mango cultivars under desert conditions at Wadi El-Faregh region, Egypt. Appl. Sci. 2007, 22, 149–160.
21. Masoud, A.A.R. Evaluation of the Productivity of Some Newly Introduced Mango Cultivars under Local Conditions. M.Sc. Thesis, Cairo University, Cairo, Egypt, 2010.
22. Parshant, B.; Rakesh, K.; Amit, J.; Wali, V.K. Growth and yield performance of mango varieties under rainfed areas of Jammu. Indian J. Agric. Res. 2012, 46, 281–285.
23. Silva, A.C. da; Souza, A.P. de; Leonel, S.; Souza, M.E. de; Ramos, D.P.; Tanaka, A.A. Growth and flowering of five mango cultivars under subtropics conditions of Brazil. Am. J. Plant Sci. 2014, 5, 393–402.
24. Fahmy, S.H. Evaluation Studies on Some Mango Cultivars under Middle Egypt Conditions. M.Sc. Thesis, Al-Azhar University, Assiut, Egypt, 2016.

25. El-Agamy, M.K.; Aly, H.H.; Hosny, S.S. Flowering and fruiting behavior of some introduced mango cultivars grown in Giza Governorate conditions. Middle East J. Agric. Res. 2018, 7, 559–568.
26. Gautam, D.K.; Kumar, A.; Kumar, M.; Kumar, V.; Prakash, S. Studies on flowering behaviour and biochemical attributes of commercial mango cultivars with special reference to Ratol. J. Pharmacogn. Phytochem. 2019, 8, 1105–1111.
27. Ranganath, K.G.; Dinesh, M.R.; Shivashankara, K.S.; Ravishankar, K.V. Morphological and biochemical characterization of peel of different coloured mango cultivars. Int. J. Chem. Stud. 2020, 8, 106–116.
28. Shaikh, R.N.; Agarkar, B.S.; Kshirsagar, R.B.; Bachate, A.H. Studies on physical, chemical and mineral evaluation of mango (*Mangifera indica* L.). Pharma Innov. J. 2021, 10, 446–449.
29. Khadivi, A.; Mirheidari, F.; Saeidifar, A.; Moradi, Y. Identification of the promising mango (*Mangifera indica* L.) genotypes based on morphological and pomological characters. Food Sci. Nutr. 2020, 10, 3638–3650.

تقييم صفات ثمار بعض أصناف المانجو النامية تحت ظروف أسوان

عبد الفتاح مصطفي الصالحي*، النوبي حفني سالم، أحمد علي جواد****

* قسم الفاكهة – كلية الزراعة – جامعة أسيوط - أسيوط – جمهورية مصر العربية
** قسم البساتين – كلية الزراعة والموارد الطبيعية – جامعة أسوان - أسوان – جمهورية مصر العربية

الملخص

أجريت هذه الدراسة خلال مواسم 2019 و 2020 و 2021 لتقييم الصفات الثمرية لبعض أصناف المانجو المنزرعة تحت الظروف المناخية لمحافظة أسوان – حيث تم اختيار أشجار سبعة أصناف من المانجو منزرعة بناحية دراو – محافظة أسوان. حيث تم تقييم خمسة أشجار متماثلة في النمو والعمر لكل من أصناف الكيت –و الكنت والنعومي والتومي وياسمينا والشيلي وجولك. وقد تم تقييم هذه الأصناف من حيث الصفات الطبيعية والكيميائية للثمار وكذلك تم إجراء تقييم رقمي للصفات الطبيعية والكيميائية لثمار الأصناف تحت الدراسة.

وقد أوضحت النتائج التالي:

- وجود فروق معنوية في الصفات الطبيعية والكيميائية للأصناف تحت الدراسة.
- كانت أعلي القيم لأغلب الصفات الثمرية بثمار أصناف الكيت والنعومي والكنت والشيلي مقارنة بباقي الأصناف تحت الدراسة.
- ظهرت أقل القيم لأغلب الصفات الثمرية بثمار المانجو جولك.
- يمكن ترتيب الأصناف تحت الدراسة تنازليا طبقاً للتقييم الرقمي كالتالي: كيت – نعومي – كنت – شيلي – تومي – ياسمينا جولك.

من نتائج هذه الدراسة يمكن التوصية بأهمية زراعة أشجار الأصناف كيت ونعومي وكنت والتي تعطي أفضل جودة للثمار تحت الظروف المناخية لمحافظة أسوان.