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Effect of Foliar Sprays Application of Milagrow on Yield and Fruit Quality of Avocado Tree cv. "Fuerte"

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ABSTRACT

The present study was conducted during two successive experimental seasons (2014 and 2015) on Fuerte avocado (*Persea americana* Mill.) at avocado orchard belonging to Horticulture Research Station at El-Kanater El-Khayira, Kalyubeia Governorate, Egypt. The trees were about 18-years old when this study started, planted at square system (7 meters apart), the soil orchard was clay loamy. The trees received the regular cultural treatments according the recommendation of Ministry of Agriculture and irrigated through farrow (surface) irrigation system. The objective of this study was to evaluate the effect of (milagrow), nutrient compounds (potassium 10 %, phosphorus 20 %, boron 3 % and brassinolide 0.2 %), on fruit set and fruit retention (%), number of fruit/tree and yield as well as fruit quality of avocado tree cv. Fuerte. This study evaluated applications of milagrow 0 (control), 2.5, 5.0 and 7.5 g/L at different growth stages; a) swollen bud stage, b) Full bloom c) beginning of fruit set during 2014-2015. Results cleared that foliar applications of milagrow to avocado tree cv. Fuerte increased all fruit parameters. Regard to fruit set and fruit retention % trees which treated with 7.5 g/100 L produced the highest value of each. Regarding the yield, highest yield was obtained from treated with 5 g/100 L in comparison with other treatments followed by "7.5 g/100 L" and "2.5 g/100 L" while it was the lowest with "control". As well as trees which treated with 7.5g/100 L and 5 g/100 L produced the highest number of fruits /tree while the lowest number of fruits/tree was recorded for untreated trees. Concerning physical properties, data proved the highest value of fruits in their weight, dimensions and flesh/fruit weight % with treatment 5 g/L meanwhile the lowest fruits were on the opposite at treatment 2.5g/L and untreated trees. Regarding fat content, the differences between treatments did not reach the level of significance. Results indicated that if milagrow is used at swollen bud stage as foliar application, increased both fruit yield and improved fruit quality. Additionally, milagrow resulted in yield increment.

Keywords: brassinosteroid, homobrassinolide, avocado Fuerte cv., yield, fruit quality.

INTRODUCTION

Avocado (Persea americana Mill.) is considered one of the most important tropical and subtropical fruit trees and botanically belongs to the family Lauraceae and is one of the few commercially significant members of the genus Persea.

It is well known that yield and quality of "Fuerte" avocado fruits depended on many factors. One of the most vital factor which affects and plays an important role in this concern is spraying with some growth regulators.

Many and several investigators indicated that spraying some fruit trees with some growth regulators at the different concentrations enhanced cell division, increased cell size and consequently increased fruit weight and tree yield either as per kgs or number of fruits per tree as well as improved the most fruit properties. Brassinosteroids (BR) are a group of plant hormones that have various effects on plant growth and development. Physiological functions don't appear to play documented role in promotion of some significant processes of certain plants. Natural brassinolids are natural plant growth promoter for all crops, which promotes growth, production, improves fruit quality, increases percentage of fruit setting, spraying before flowering can promote formation of flower buds during flowering stage can reduce flower and fruit dropping (Seadh *et al*., 2012). Effects of exogenous brassinosteroid applications have been studied in many fruit and vegetable crops, such as grape (Işçi and Gökbayrak 2015), pepper (Serna *et al*. 2012), papaya (Manju and Kumar 2015) and passion fruit (Gomes *et al*. 2006) with varying results. Also, the foliar application of macro and micro-nutrients have been very important role to improve fruit set, productivity and quality of fruit. It has also a beneficial role in recovery of nutritional and physiological disorders of many fruit trees. Various experiments have been conducted on foliar spray of micro-nutrients in different fruit crops and shown a significant response to improve yield and quality of fruits (Kumar and Verma 2004 & Lalithy *et al*.,2014).

For these considerations, the present investigation was carried out to study and evaluate the response of some fruiting parameters i.e., (fruit set %, fruit retention %, and either kgs or number of fruits/tree) and some fruit properties of "Fuerte" avocado trees under spraying with different rates (concentrations) of milagrow (BR) compound.

MATERIALS AND METHODS

The present study was conducted during two successive experimental seasons (2014 and 2015) on avocado cv. Fuerte (Persea americana Mill.) at avocado orchard belonging to El-Kanater El-Khayira, Horticulture Research Station at Kalyubeia Governorate, Egypt.

The trees were about 18-years old when this study started, planted according square system, growing in clay loamy soil at 7 meters apart and flood irrigation was used. The trees received the regular cultural practices recommended by the Ministry of Agriculture and irrigated through farrow (surface) irrigation system.

Twelve trees uniform in their vigor, size, shape and all mostly disease free, were selected for the investigation. The trees selected for the experiment were kept under the normal cultural practices. Treatments were arranged in a randomized complete block design with three replicates were used for each treatment where each replicate was represented by a single tree. Foliar millagrow (brassinosteroid (BR)) treatments used at swollen bud stage, full bloom and beginning of fruit set as follow:

Millagrow* (BR) 2.5, 5.0 (as a recommended), 7.5 g /100 liter .

Control (Trees were sprayed with Nile water).

Treatments were sprayed three times, the first at swollen bud stage, second after first spray at 15 days interval (b) and third one after second spray at 15 days interval (C). These treatments were applied at three time stages: a) swollen bud stage, b) (full bloom), c) beginning of fruit set.

Measurements:

- Fruit set % and Fruit retention %

Fruit set % : Number of set fruits per branch was recorded one month after full bloom; 5 attached branches of each tree were used for this purpose. The percentage of fruit set was calculated using the following equation:

$$\text{Fruit set (\%)} = \frac{\text{Average number of set fruits / branch}}{\text{Average number of flowers/branch}} \times 100$$

Fruit retention % : Number of retained fruits / branch was recorded at harvesting time. The percentage of fruit retention was calculated using the following equation:

$$\text{Fruit retention (\%)} = \frac{\text{Average number of retained fruits / branch}}{\text{Average number of set - fruits/branch}} \times 100$$

Yield number of fruit and yield weight (kg)/tree:

At harvest time, total number of fruit per tree was collected and yield was determined as Kg/tree (total number of fruits/tree × average fruit weight (g).

Fruit physical and chemical properties:

Fifteen fruits from each treatment (three replicates) were collected at maturity stage to estimate some physical properties such as fruit weight (gm), fruit length (cm), diameter (cm) and flesh weight percentage. When fruits were reached ripe stage, fruits were cut into quarters and peeled, the seed coat removed and the flesh pooled and homogenized by a pestle. The fatty acid methyl esters were prepared using solution of methylalcohol, benzene, 2,2-dimethoxy propane, sulphuric acid (37:20:5:2 v/v/v/v) and n. heptane was used for separation of methyl esters as described previously (Garces and Marcha, 1993). Free fatty acids were identified by comparison of retention time of the gas chromatographic peaks with these of commercial free fatty acid methyl ester standards. They were automatically computed as a percentage by the data processor (Chrom-card) from the ratio of individual peak area to the total peaks area of fatty acids.

Statistical analysis:

Statistical analysis of the data was thoroughly out and the individual comparisons were compared by using the New least significant Differences (New L.S.D) according to (Waller and Duncan, 1969) Interaction studies were carried out and calculated as referred by (Snedecor and Cochron, 1972).

RESULTS AND DISCUSSION

I- Fruit set and Fruit retention (%).

Data in Table (1) showed obviously that all sprayed treatments with milagrow (BR) resulted in a significant increase in fruit set % as compared to the control treatment which sprayed with tap water. Moreover trees sprayed with either 7.5 or 5.0 g/100 l of milagrow treatments were statistically the superior as exhibited significantly, the highest values of fruit set i.e., (83.2 % and 85.2 %) and (82.0 % and 83.0 %) during both seasons of study, respectively. Meanwhile, the opposite trend was observed with control treatment which was statistically the inferior as exhibited the least value of fruit set percentage i.e., (50 % and 52 %) in the two seasons of study, respectively. Furthermore, trees sprayed with 2.5 g/100 l level of milagrow treatment seemed be in between value the abovementioned two extents in this respect (65.2 % and 68.2 %) during both 2014 and 2015 seasons of study, respectively.

Concerning the fruit retention percentage, data in the same Table displayed clearly that, the response of fruit retention % was typically followed the same trend previously detected with the abovementioned parameter i.e., (fruit set %). However, all sprayed treatments of milagrow under study increased significantly the fruit retention % as compared to the control in the two experimental seasons. Data revealed that, the least significant percentage of fruit retention was always in concomitant to the control treatment (63.66 % and 64.6 %) in the two seasons of study, respectively. Moreover, either trees sprayed with (7.5 g/100 l) at (5.0 g/100 l) of milagrow treatments were the most effective treatments regarding the increasing of fruit retention %, since they resulted in statistically the highest values in this concern (87.0 and 88.2 %) and (85.6 and 86.2 %) during both 2014 and 2015 seasons of study, respectively. Meanwhile, treatment of (2.5 g/100 l) came in between the aforesaid two extents. On the other hand, all treatments of milagrow did not significantly varied as compared each other in their fruit retention %. Such trends was true during the first and second seasons of study.

II- Tree productivity:

Number of fruits/tree.

Data in Table (2) show significant differences in number of fruits / tree among all treatments, the average of the two years show that 5 g/L treatment and 7.5 g/l treatment produced the highest number of fruits (144.65 and 140.15)/tree, respectively with high significant difference between them, followed by 2.5 g/L treatment (111 fruits /tree) in comparison with "untreated trees (control) which produced the lowest number (94.5 fruits/ tree).

With regard to the tree yield as kg, data represented in Table (2) showed obviously that, yield as kg/tree was responded significantly to all used milagrow (BR) treatments under study. However, the greatest statistically value of yield as kg/tree was resulted from avocado trees being sprayed with milagrow (BR) at rate 5.0 g/100 L followed by the (BR) treated at 7.5 g/100 L as compared to the control i.e., (30.65 and 32.23 kg/tree) and (27.87 and 29.44 kg/tree) during the first and second seasons of study, respectively. Moreover, an opposite trend was observed with water sprayed trees (control) which induced significantly the least value of

tree yield (kg/tree) i.e. (14.70 and 14.93 kg/tree) in both 2014 and 2015 seasons of study, respectively. On the other hand, trees sprayed with milagrow (BR) at rate of 2.5 g/100 L gave intermediate values of yield as kg/tree (16.50 and 20.72 kg/tree) during the 1st and 2nd seasons of study, respectively.

The obtained results are generally in line with those found by Mussig (2005) who found that BRs are known to facilitate pollen tube growth and decreased flowers drop in pomegranate. In this respect, El-Sharkawy and Osman (1992) indicated that increase in fruit set and reduced flowers drop may be due to the effect of cytokinins and auxins through preservation of loss of protein material in middle lamella according to Kachave and Bhosale (2007) on grape and Abubakar *et al*. (2013) on pomegranate. Furthermore, the foliar application of macro and micro nutrients have very important role in improving fruit set, productivity and quality of fruits. It has also a beneficial role in recovery of nutritional and physiological disorder on foliar spray of micro-nutrients in different fruit crops and shown significant response to improve yield and quality of fruits (Kumar and Verma 2004 and Lalithy *et al*., 2014). These results are in parallel with those of Gabr *et al*., (2011) revealed that BRs and Dormex treatments significantly increased the yield of "Canino" apricot trees

Table 1. Effect of different doses of Milagrow on fruit set and fruit retention % of avocado trees cv. "Fuerte " during 2014 and 2015 seasons.

Characters	Fruit set %			Fruit retention %		
Treatment	1st	2nd	Average	1st	2nd	Average
Control	50.00	52.00	51.00	63.66	64.60	64.13
2.5 g/100 L	65.20	68.20	66.70	76.67	80.60	78.63
5.0 g/100 L	82.03	830	82.52	85.67	86.20	85.93
7.5 g/100 L	83.20	85.20	84.20	87.00	88.20	87.6
L.S.D. at 5 %	3.26	3.46	-------	12.57	13.54	------

Table 2. Effect of different doses of Milagrow on number of fruits/tree and yield (kg)/ tree of avocado trees cv. "Fuerte " during 2014 and 2015 seasons.

Characters	No. of fruit/tree			Yield/tree (kg)		
Treatment	1st	2nd	Average	1st	2nd	Average
Control	94.00	95.30	94.50	14.70	14.93	14.82
2.5 g/100 L	110.00	112.00	111.00	16.50	20.72	18.61
5.0 g/100 L	143.00	146.30	144.65	30.65	32.23	31.44
7.5 g/100 L	136.00	144.30	140.15	27.87	29.44	28.66
L.S.D. at 5 %	3.56	4.48	--------	3.92	4.05	-----

Fruit physical properties.

Data in Tables (3 & 4) showed that there are significant differences in fruit weight, fruit dimension and flesh weight (%) between the tested treatments, the average values of the two seasons show that fruits which treated with 5.0 g/100 L were superior among the tested trees in weight, dimensions and flesh (%,) comparison with the other treatments. As for fruit weight could be arranged descending as follows: 5.0 g/100 L (217 gm as average of two seasons), 7.5 g/100 L (207.84 gm) and 2.5 g/100 L (182.5 gm) then fruits of untreated trees (control) which were the lightest in weight (156.36 gm).

With regard to fruit dimension data in the same Table revealed the same trends were observed on fruit weight, i.e. fruits which treated with 5.0 g/100 L were longest and widest diameter (11.2 × 6.12 cm), and trees treated with 7.5g/100 L ranked to second highest length (10.77 cm) but had the narrowest diameter (6.2 cm.). 2.5 g/100 L and untreated trees, fruits ranked the third and fourth degree for both length and diameter (10.47 × 5.55 cm) and (9.87 × 5.39 cm,) respectively.

Table 3. Effect of different doses of Milagrow on fruit weight (g), fruit length and fruit diameter (cm) of avocado trees cv. "Fuerte " during 2014 and 2015 seasons.

Characters	Fruit weight (g)			Fruit length (cm)			Fruit diameter (cm)		
Treatment	1st	2nd	Average	1st	2nd	Average	1st	2nd	Average
Control	156.00	156.67	156.34	9.40	10.33	9.87	5.27	5.50	5.39
2.5 g/100 L	180.00	185.00	182.50	10.10	10.83	10.47	5.50	5.60	5.55
5.0 g/100 L	214.00	220.00	217.00	11.03	11.36	11.20	6.00	6.23	6.12
7.5 g/100 L	204.00	211.67	207.84	10.50	11.03	10.77	6.16	6.23	6.20
L.S.D. at 5 %	26.71	25.20	--------	0.719	1.08	------	0.57	0.56	-----

In this respect, Gabr *et al*. (2001) on apricot, revealed that the increment of fruit weight, volume, length and diameter values were linearly related to the BRs concentration on the spraying solution. Moreover, brassinolide stimulate elongation and cell division (Kauschmaun *et al*., 1996). The fruit growth induced by brassinolide has been related to promote photosynthesis accumulation in fruits or an increase in RNA and DNA content, polymerase activity and protein synthesis (Krizek and Mandava 1983) and (Li & Chory 1999). Moreover, Wang *et al*. (2004) reported that brassinolide increased fruit weight of orange. Besides, Symons *et al*. (2006)

showed that increases in endogenous brassinosteroids levels, but not indole-3-acetic acid (IAA) or GA levels, are associated with ripening of nonclimacteric fruits. Also, they verified that application of brassinosteroids on grape berries promoted ripening.

Chemical properties

Fat (%)

Results in presented in Table (4) show the average of the two years of fat (%) in the fruit. There is significant differences in fruit fat content among the all tested treatments. In general fruit fat content was low in fruits which treated with 7.5 g/100 L (26.50 %) and high in 5.0 g/100 L (26.67 %) treated trees. The increase in flesh weight (%) obtained in Table (4) due to applied Milagrow at 5 or 7.5 g/100 L did not led to any significant increase in fat %.

Table 4. Effect of different doses of Milagrow on flesh weight (%) and fat (%) of avocado trees cv. "Feuert " during 2014 and 2015 seasons.

Characters	Flesh weight (%)			Fat (%)		
Treatment	1st	2nd	Average	1st	2nd	Average
Control	79.00	79.00	79.00	26.56	26.63	26.6
2.5 g/100 L	82.00	82.30	82.15	26.56	26.67	26.62
5.0 g/100 L	83.00	83.60	83.30	26.67	26.67	26.67
7.5 g/100 L	83.00	83.30	83.15	26.53	26.5	26.5
L.S.D. at 5 %	0.40	0.40	------	0.53	0.48	-------

CONCLUSION

From the obtained results it could be concluded that spraying avocado trees cv. Fueret with Milagrow at different doses 5 g/100 L or at 7.5g/100 L were the most effective for increasing the fruit set (%), fruit retention %, number of fruits/ tree, the yield (kg)/tree. All tested treatments failed to increase fat (%) in the fruit.

REFERENCES

Abubakar, A.R., A. Naira and A. Moieza, (2013). Effect of bio stimulants on growth, chlorophyll content, flower drop and fruit set of pomegranate Cv. Kandhari Kabuli. Inter. J. of Agric., Enveron. &Tech., 6: 305-309.

Bergh, B.D (1992). The Avocado and Human Nutrition. Avocados and your health. Proc of second World Avocado Congress 1992. pp.37-47

El-Sharkawy, Sh. M. and I.M. Osman, (2009). Effect of foliar applications of some growth regulators on flowering, fruit production and quality of “Wichita” and“Western Schley” pecan cultivar. Egypt. J. Hort., 36(1): 29-46.

Eyres, L., Sherpa, N. and Hendriks, G. (2006). Avocado Oil- A new edible Oil from Australasia. Institute of Food, Nutrition and Human Health. Massey University, NZ. 2006

Gabr, M.A., M.A. Fathi, I.M. Azza and G.B. Mekhaeil, (2011). Influences of some chemical substances used to induce early harvest of “Canino” apricot trees. Nature and Science, 9: 59-65.

Garces, R. and Marcha, M. (1993). Analytica Biochem 211:139-143.

Gomes, M.M.A., E. Campostrini, N.R. Leal, A.P. Viana, T.M. Ferraz, L.N. Siqueira, R.C.C. Rosa, A.T. Netto, M. Nuñez-Vázquez and M.A.T. Zullo, (2006). Brassinosteroid analogue effects on the yield of yellow passion fruit plants (Passiflora edulis f. flavicarpa). Scientia Horticulturae, 110: 235-240.

Işçi ,B. and Z. Gökbayrak (2015). Influence of brassinosteroids on fruit yield and quality of table grape 'Alphonse Lavallée'. Vitis 54, 17–19

Kachave, D.B. and A.M. Bhosale, (2007). Effect of plant growth regulators and micronutrients on fruiting and yield parameters of "Kagzi" lime (Citrus urantifolia) fruits. Asian J. Hort., 2: 75-79.

Kauschmann, A., A. Jessop, C. Konc, M. Szekeres, L. Willmitzer and T. Altmann, (1996). Genetic evidence for an essential role of brassinosteroids in plant and development. The Plant Journal, 9(5): 701-713.

Krizek, D.T. and N.B. Mandava, (1983). Influence of spectral quality on the growth response of intact bean plants to brassinosteroid, a growth-promoting steroidal lactone. 1. Stem elongation and morphogenesis. Physiologia Plantarum, 57(3): 317-323.

Kumar S and Verma DK. (2004). Effect of micro-nutrients and NAA on yield and quality of Lichi cv. Dehradun. Proceedings of International sem. on Recent trend in Hi-tech. Horticulture and postharvest tech. pp.193.

Lalithy KA, HB Bhagya, K Bharathi and Kulapati H. (2014). The Biascan; 9(1):159-162.

Li, J.M. and J. Chory, (1999). Brassinosteroid actions in plants. J. Exp. Bot., 50: 275-282.

Manju, A. and S. Kumar (2015). A dynamic response of post potassium and micro nutrients combined with brassinosterids- a steroidal plant hormone, on accumulation of sugar in papaya cv. Tnaupapaya. International Journal of Agricultural Science and Research (IJASR) ISSN(P): 2250-0057; ISSN(E): 2321-0087 Vol. 5, Issue 6, 277-282

Müssig, C., (2005). Brassinosteroid-promoted growth. Plant Biol., 7(2): 110-117.

Seadh, S.E., A.N.E. Attia, M.A..Badawi and M.S.E.El-Hety (2012). Response of seed yields and its components of safflower to sowing dates, nitrogen fertilizer levels and times of foliar applications of milagrow. Journal of biological science 12 (6): 342-348.

Serna, M.; Hernández, F.; Coll, F.; Coll, Y.; Amorós, A.; (2012). Brassi- nosteroid analogues effects on the yield and quality parameters of greenhouse-grown pepper (Capsicum annuum L.). J. Plant Growth Regul. 68, 333-342.

Snedecor, G.W. and W.G. Cochron (1972). Statistical methods 6th ed. Lawa State Univ. Press, Amer. Lawa, U.S.A. pp. 507.

Symons, G. M.; C. Davies; Y. Shavrukov; I. B. Dry; J. B. Reid and M. R. Thomas (2006). Grapes in steroids. Brassinosteroid are involved in grape berry ripening. Plant Physiol. 140(1): 150-158.

Waller. P.A. and D.B. Duncan (1969). Amer State Assoc J 1969:1485-1503.

Wang, C. F.; Y. You; F. L. X. Chen; Jun Wang and Jin-shi Wang (2004). Adjusting effect of brassinolide and GA_4 on the orange growth. Acta Agriculturae Jiangxiensis Universitatis, 2004, 5 – 22.

تأثير الرش بالميلاجرو على المحصول وجودة ثمار الأفوكادوا صنف "فيوريت"

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أجريت الدراسة الحالية خلال موسمي ٢٠١٤، ٢٠١٥ على الأفوكادو صنف "فيوريت" بمزرعة محطة بحوث البساتين بالقناطر الخيرية، محافظة القليوبية، مصر، وكانت الأشجار تبلغ ١٨ عام ومنزرعة على مسافات ٧ متر بالنظام المربع والتربة طميية خفيفة وتروى بالري السطحى (الغمر)، وتعامل بالمعاملات البستانية الموصى بها طبقا لتوصيات وزارة الزراعة. والهدف من هذه الدراسة تقييم تأثير الميلاجروا (١٠ % بوتاسيوم + ٢٠ % فوسفور + ٣ % بورون + براسينولايد ٠.٢ %) على كل من عقد الثمار والنسبة المئوية للتساقط وعدد الثمار لكل شجرة ومحصول الشجرة بالكيلو جرام وأيضا المحصول مقدرا بالطن وكذلك صفات جودة ثمار الأفوكادوا (صنف فيورت). وكانت معدلات الإضافة (٠، ٢.٥، ٥.٠ و ٧.٥ جم/١٠٠ لتر) فى مراحل مختلفة وهى: ١) مرحلة انتفاخ البراعم، ٢) مرحلة تمام التزهير، ٣) بداية عقد الثمار. وذلك خلال موسمي ٢٠١٤ و ٢٠١٥. ولقد أشارت النتائج المتحصل عليها أن معاملات الرش بمركب الميلاجرو أدت إلى زيادة كل القياسات المتحصل عليها وذلك فيما يتعلق بالنسبة المئوية لكل من عقد الثمار وتساقط الثمار وخاصة التي تم رشها بمعدل ٧.٥ جم/١٠٠ لتر ماء حيث سجلت أعلى القيم لكل منهما. وأوضحت النتائج أيضاً أن أعلى محصول تم الحصول عليه من معاملة رش الأشجار بمعدل ٥ جم/١٠٠ لتر ماء مقارنة بالمعاملات الأخرى يلي ذلك معاملة الرش بمعدل ٧.٥ جم/١٠٠ لتر ثم ٢.٥ جم /١٠٠ لتر، بينما أظهرت معاملة المقارنة (الكنترول) أقل القيم. ومن الناحية الأخرى فإن الأشجار التى رشت بمعدل ٧.٥ جم و٥ جم /١٠٠ لتر أعطت أعلى عدد من الثمار لكل شجرة في حين أن أقل عدد من الثمار لكل شجرة كان مرتبطاً بالأشجار الغير معاملة (الكنترول). وفيما يتعلق بالخواص الطبيعية فإن النتائج أظهرت أن أعلى القيم لوزن الثمار وأبعادها وكذلك النسبة المئوية للحم إلى وزن الثمرة كان مرتبطاً بالمعاملة التي رشت بمعدل ٥ جم/١٠٠ لتر ماء. فى حين أن أقل الثمار وزناً نتج عن المعاملة بمعدل ٢.٥ جم/١٠٠ لتر ماء وكذلك الأشجار الغير معاملة (الكنترول). وفيما يختص بمحتوى الثمار من الدهون فإن الاختلافات بين المعاملات لم تصل إلى مستوى المعنوية. كذلك أشارت النتائج إلى أن استخدام الميلاجرو في مرحلة انتفاخ البراعم رشاً على الأشجار أدى إلى زيادة محصول الثمار وتحسين صفات جودة الثمار، إضافة إلى أن مركب الميلاجرو يعتبر أحد المركبات الواعدة لزيادة المحصول.

[*] **Millagrow commercial name of Brassinolide (BR) 2% registered by No. 7239 in Ministry of Agriculture which of potassium 10%, phosphorus 20%, boron 3% and brassinolide 0.2 % in their solutions contains.**