

Fruit thinning on 'Khalas' and 'Barhi' date palm cultivars in Al Kuwaitet research station in UAE

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Abstract:

Fruit thinning was applied in March and April 2016 on 'Khalas' and 'Barhi' date palm cultivars in El Kuwaitet Research Station Al Ain (UAE) on 4 date palm trees from each cultivar compared to the same trees number as control. Two fruit thinning techniques were applied: cutting the length of spikelet's and cutting some of strands in the bunch. From each bunch 25% of total number of fruits was removed from the bunch.

'Khalas' cultivar showed better results with the first fruit thinning technique by removing the quart of the length of strands. The amelioration of weight was 34% compared to control (no thinning). 'Barhi' cultivar showed better response to removing the quart of number of strands from the bunch. The amelioration was 38%.

1-Introduction:

Fruit thinning is considered as important cultural operation for improving the quality of dates as also for other fruit trees. Quality of dates is improved by increasing fruit weight and size and regulating date palm production by reducing the magnitude of the year to year production affecting the date palm.

Fruit thinning on date palm was experimented by different methods:

- (1) Research of frond/bunch ratio, in different cultivation situations and with different cultivars. Ration of 1/6 to 1/12 were experimented. The research results recommended maintaining the ratio in the range of 1/10 to 1/12. As examples Shabana et al., 1999 recommended the ratio of 1/8 for Ashhal, Hilali Ahmar, Jash Jafar and Jash Habash in Arab Emirates and (Ben Salah, 1992) recommended ratio of 1/10 for Tunisian Lemsi cultivar.

(2) Experiment different levels of fruit thinning to reduce the date palm natural production. Fruit thinning is applied to reduce by one third to one quart the natural production of the date palm. Methods of removing were also experimented. Removing fruits from all bunches by cutting parts of the strands or cutting some strands in the center of the bunch (Ben Salah et al 1998, Abbas 1998, El Kassas 1989). All the authors agree that this practice of thinning improved fruit quality as reflected in increasing fruit weight and size. This effect was more obvious in some variety as: Jabri, Khunaizi, and Hilali (Ben Salah et al., 1998). For example, thinning one third of the fruits of Khunaizi has increase fruit weight by 25%. Differences in fruit weight between the two levels of thinning (one third and one fourth) were small and approached 10%.

(3) Thinning fruits using growth substances was also tried, El Hamadi et al. (1983) have used Ethephon at 200 to 400 ppm from the fruit set and have deduced that the level of thinning increase by increasing the concentration. NAA was used by El Kassas (1989) at 100-200 ppm and 2-4d at 30-80 ppm has increase fruit weight and volume and reduce the bunch weight, Shabana et al (1998) have also use NAA at 50-100 ppm on spray at the end of Kimri stage and have increase the volume, weight and flesh part of the fruit, but the higher concentration has delayed fruit ripening.

This report present the results of fruit thinning applied on two cultivars cultivated in the research station of El Kuwaited in Al-Ain.

2- Material and methods:

To improve fruit production, experiment on fruit thinning was applied in 2016 season on two cultivars: 'Khalas' and 'Barhi' on 4 date palm trees from each cultivar compared to the same trees number as control. Removing in each bunch 25% of total number of fruits was applied by two techniques: reducing the length of spikelet and cutting the quart of the number of strands in the bunch.

In August 2016, total production was calculated and samples of fruit were collected from treatments and the control (without fruit thinning) for weighting fruits and measuring dimension of the fruits.

3- Results:

Results of the fruit thinning showed no big difference as effect of fruit thinning on total yield for 'Khalas' and 'Barhi' cultivars. The quality was ameliorated in the cultivars under the different techniques of fruit thinning.

'Khalas' cultivar showed better results with the first fruit thinning technique by removing the quart of the length of spiklets. Fruit weight is ameliorated from 7gr in control to 8.5 and 9 gr in each treatment compared to Control. The response of 'Khalas' cultivar was better to cutting from the length of strands. The amelioration of weight was **34%** compared to control (no thinning).

Fruit weight of 'Barhi' cultivar is ameliorated from 6gr in control to 7.5 and 8.2 gr in each treatment compared to Control. 'Barhi' cultivar showed better reaction to removing the quart of number of spiklets from the bunch. The amelioration was **38%** compared to the control.

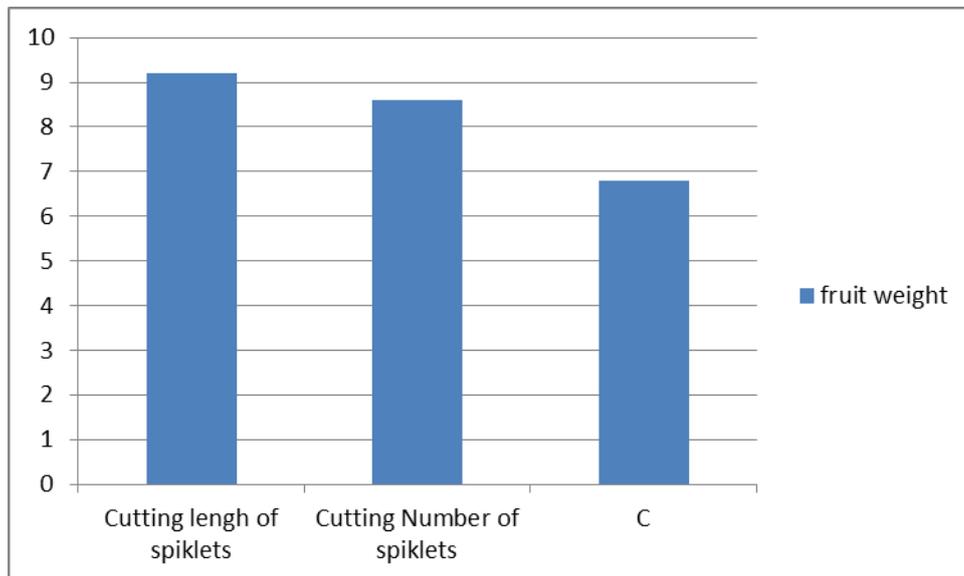


Fig. 1: Fruit thinning of 'Khalas' cultivar

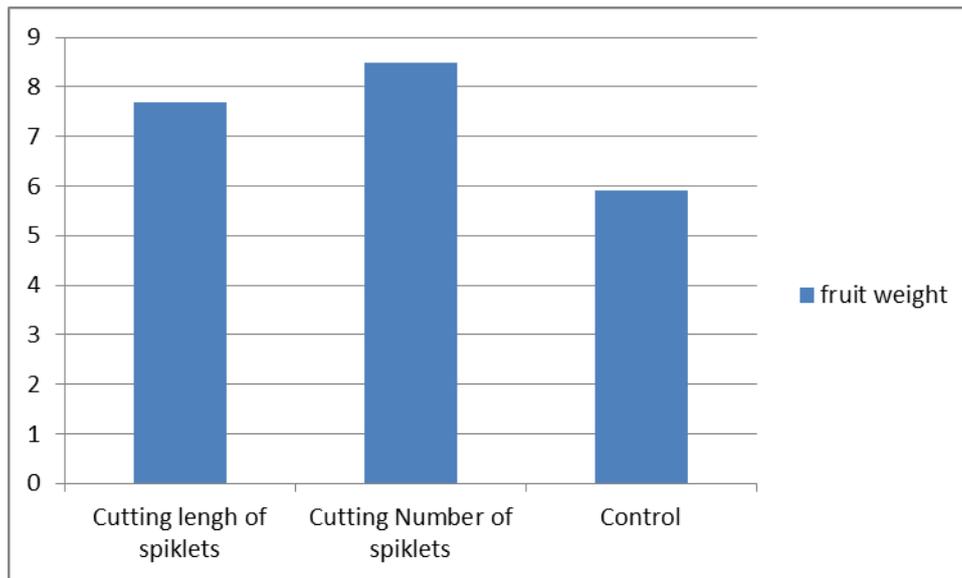


Fig. 2: Fruit thinning of 'Barhi' cultivar

Conclusion:

'Khalas' and 'Barhi' date palm cultivars quality date was ameliorate by fruit thinning by removing the quart of date in the bunch by cutting number of length of strands.

Cultivar 'Khalas' response was better with cutting length of strands and 'Barhi' cultivars response was for removing the quart of the number of strands from the bunch. Total production was not different between the 2 treatments and the control. We recommend repeating the experimentation for the second year.

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