Effect of spraying on pollen grains extract and Oligo Green biomass in some chemical, physical and productive properties of Date Palm (Phoenix dactylifera L.) cv. Shawythi

By
Atheer Abd Al-Hussein Mohamed Al- Saady

Summary

This study is conducted during the growth season , 2016 , on date palms trees ,(*Phoenix dactylifera* L.), twenty – year age , Al- Shwathi class planted in Akad date palms station , belonging to general corps for date palms in ministry of agriculture , Al- Bada site , Al – Shatra district , north of Thiqar governorate. The objective of this study is to know the effect of foliar spray of pollen grains extract (10 , 20) gm . L^{-1} , foliar application of oligo green fertilizer (100, 200) mg .L^{-1}, number of spray times (one spray , two sprays) on some physical , chemical and physiological properties of fruits and yield components .

The first spray is done after three weeks of pollination (mid of Al-hababuk stage) while the second spray after six weeks of pollination (mid of Al- chemri stage) .

The results of this study can be summarized as follows :

1.The results showed that the foliar spray out of different levels from pollen grains extract and oligo green fertilizer have positive significant effect on improving chemical properties of leaves , physical and chemical properties of fruit productivity during Al- Khalal and Al- Rutab stages .

2. Pollen grains extract treatment (20) gm . L^{-1} was significantly superior on all spray times (one spray , two sprays) in contrast with control one (distilled water) giving higher increase of physical characteristics of fruits (fruit weight , fruit size , length and diameter of fruit) during Al-Khalal and Al-Rutab stages.

As well , this treatment gave higher significant increase on chemical characteristics (Total dissolved solids , reducing sugars , Total sugars , dry matter , mineral concentration of fruits , leaf content of chlorophyll and carbohydrates. In this context , this treatment was superior in fruit maturity , weight of raceme and yield .

In addition to above , pollen grains extract treatment (20) gm . L^{-1} showed a significant effect by giving lesser of water content and sucrose percent in fruits and lesser maturity period . Besides that, the results showed that oligo green fertilizer treatment (200) mg .L^{-1} (which is not significantly different out of pollen grains extract treatment (20) gm.L^{-1} in most of studied characteristics) have significant effect in contrast with control treatment in all studied characteristics except fruit content of total dissolved solids during Al-Khalal stage.

3. Two spray treatment (after two weeks , six weeks) out of pollination was superior significantly by giving higher increase in (size , height , and diameter of fruits) , as well as dry matter , mineral concentration in fruits , and leaf content of chlorophyll and carbohydrates . besides that it was superior in some characteristics such as (maturity ratio , weight of raceme , yield) .In addition to that , it recoded lesser significant decrease (sucrose , water content of fruits , period of fruit maturity whereas there is no significant differences between one spray treatment and two spray treatment in specific characteristics of fruits.

4.The interaction between the treatments was so clear , where(pollen grains extract treatment (20) gm $.L^{-1}$ + two spray) was superior by giving higher significant increase in (fruit weight , seed weight , size- height- diameter of fruit , total dissolved solids , reduced sugars , mineral concentration , maturity ratio, raceme weight and total yield) whereas lesser water content on Al-Ratab stage , lesser sucrose ratio , and lesser maturity in both Al-Khalal and Al-Ratab stage , but it does not differ significantly of(pollen grains extract treatment (20) gm.L^{-1} + one spray) except leaf content of chlorophyll , potassium concentration in fruits on Al- Khalal stage . Also , it does not differ significantly (oligo green fertilizer (200) mg. L^{-1} + two spray) where recorded lesser water content , higher dry matter in fruits during Al-Khalal stage except fruit and flesh weight in Al-Khalal stage , raceme weight and total yield .