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# Effect of thinning of flowers on fruit set in the cultivar 'Algerie' in the Marina Baixa

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**SUMMARY –** In order to obtain optimum and profitable commercial fruit size in loquat culture thinning of flowers and/or fruits is required. In the Marina Baixa area, thinning is applied at different timings. However, in our climatic conditions with the cultivar 'Algerie' a range of successful results on fruit set is obtained depending on the phenological growth stage at when the thinning is applied. Results from this study pointed out that flower thinning made in the first stages of growth resulted in increased fruit set. It seems that flowers are an important sink for nutrients and a substantial competition for fruit growth. This fact implies that the best time for flower thinning depends on the climate of the area. In those areas with poor setting, thinning in the first stages of development of flower clusters can improve fruit setting. On the other hand, in those areas with heavy fruit set, thinning of flowers should be delayed in order to minimize fruit set and to decrease the need of fruit thinning.

**Key words:** *Eriobotrya japonica* Lindl., fruit thinning, fruit setting.

***RESUME –*** *"Effet de l'éclaircissage des fleurs sur la nouaison chez le cultivar 'Algérie' à Marina Baixa". Afin d'obtenir une taille commerciale du fruit rentable et optimale, la culture du néflier nécessite un éclaircissage des fleurs et/ou des fruits. Dans la zone de Marina Baixa, l'éclaircissage est appliqué à différentes périodes. Cependant, dans nos conditions climatiques, on a obtenu chez le cultivar 'Algérie' une série de succès concernant la nouaison du fruit en fonction du stade de croissance phénologique lorsque l'on effectue un éclaircissage. Les résultats de cette étude soulignent qu'un éclaircissage des fleurs réalisé lors des premiers stades de croissance a donné une augmentation de la nouaison des fruits. Il semblerait que les fleurs soient un puits important de nutriments et qu'il y ait une concurrence importante pour la croissance du fruit. Ce fait implique que la meilleure période pour l'éclaircissage des fleurs dépend du climat de la zone. Dans les zones à faible nouaison, l'éclaircissage durant les premiers stades de développement des inflorescences peut améliorer la nouaison des fruits. D'autre part, dans les zones à forte nouaison, l'éclaircissage des fleurs devrait être retardé afin de minimiser la nouaison et de réduire le besoin d'éclaircissage des fruits.*

***Mots-clés :*** Eriobotrya japonica *Lindl., éclaircissage des fruits, nouaison des fruits.*

## Introduction

Loquat culture in the Marina Baixa area needs convenient fruit thinning in order to get an optimum and profitable commercial fruit size. As the number of fruits per tree increases the fruit size decrease.

Despite of the cultural practices applied, culture under mesh or in open fields, type of cultivar, ripening season of the cultivar, etc. the authors agree that the most convenient number of fruits per cluster is 3 or 4. However, growers prefer to thin flowers in terms of saving time and labor cost. However, flower season is quite variable, depending on the climate, the best timing for such a practice is not well established. Consequently, a failure on the timing for thinning can result in loses of crop.

The objective of this study is to know the relationships between thinning at different phenological stages and fruit set.

## Material and methods

Plant material consisted in 15 trees from cultivar 'Algerie', 10 years old, grafted on loquat seedlings. The trees were selected from random locations from the same plot. Cultural practices were the usual in the area. Drip irrigation consisted in five emitter per tree.

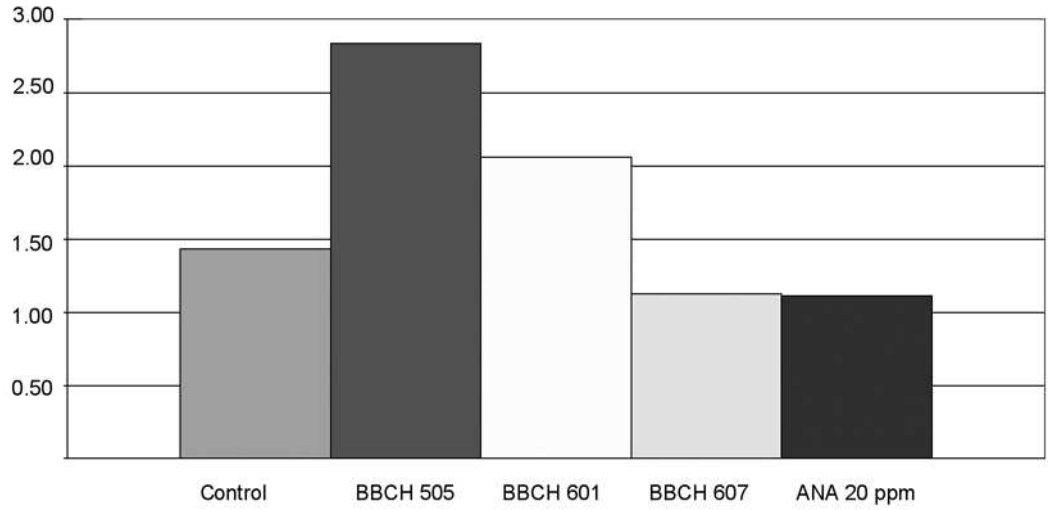


Fig. 1. Number of fruits set per cluster branch, according to the phenological stage when thinning was applied.

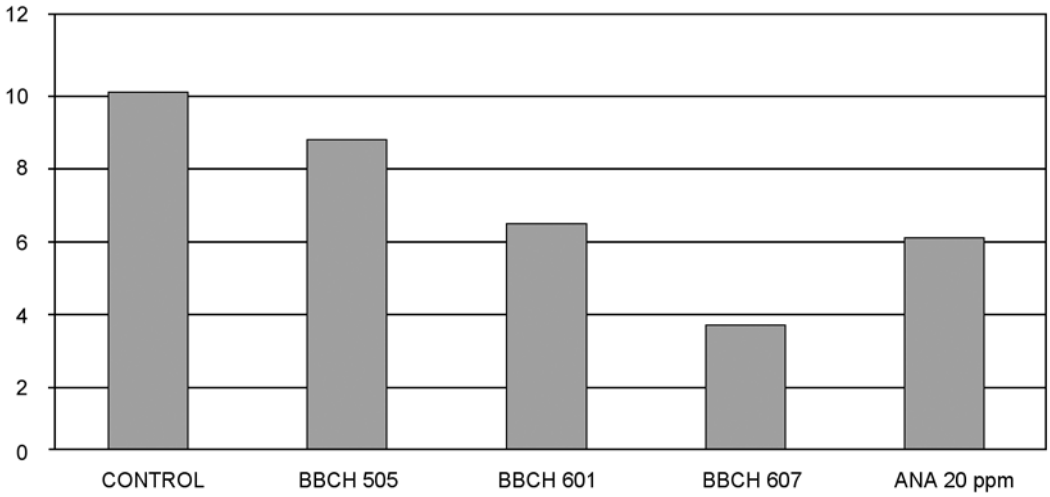


Fig. 2. Number of total fruit set according to the thining applied.

Ten cluster per tree were selected, fruit set was recorded, on January 22, after the following treatments:

(i) Treatment 1. Control, no thinning of flowers, fruit thinning as usual.

(ii) Treatment 2. Thinning of flowers on BBCH phenological stage 505 (Martínez *et al.,* 1999): flower cluster fully expanded; some terminal flower buds begin to swell. Only 3 branches per cluster were left.

(iii) Treatment 3. Thinning of flowers on BBCH phenological stage 601: beginning of flowering (10% of flowers open). Only 3 branches per cluster were left.

(iv) Treatment 4. Thinning of flowers on BBCH phenological stage 607: flowers fading, majority of petals fallen. Only 3 branches per cluster were left.

(v) Treatment 5. Chemical thinning with ANA 20 ppm, applied on BBCH phenological stage 609: end of flowering, all petals fallen (fruit set).

## Results and discussion

According to the results, the number of fruit set per cluster branch was higher when thinning was made earlier. The number of fruits resulted from thinning on BBCH phenological stage 505 was almost twice than the control, consequently, thinning at this stage will result in higher cost than regular fruit thinning. On the other hand, to thin flowers before BBCH phenological stage 607 did not result in less fruit set. On the other hand, thinning of flowers at this stage resulted in 3.6 fruits set per cluster which is about the number of optimum fruits per cluster. Chemical thinning resulted in optimum fruit set too, spraying did not allow setting of no-pollinated flowers.

## Conclusions

(i) Thinning of flowers in the first stages of development resulted in higher fruit set (number of fruits/number of flowers) but did not result in saving of fruit thinning.

(ii) Thinning of flowers on BBCH phenological stage 607 resulted in the optimum number of fruits per cluster.

(iii) From a cost point of view, the best flower thinning is the one made at the end of the flower season, when the number of flowers is almost de number of fruits (one fruit per branch of cluster). This task make easier later fruit thinning.

(iv) Fruit setting did not rely on the number of flowers.

(v) The best thinning practice is to thin fruits rather than flowers, except chemical thinning.

## References

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