

SFF Project 404831 Increasing Market Share for NZ Olive Oil

Milestone M09

Conference Summary Presentation of Focus Grove Progress to Date and Key Learnings

Overview

This presentation summary compiles the overall learnings from the project, interpreting the data and results from all the participating groves. The summary will highlight specific issues of 'focus' drawing on the actual results from across each of the groves.

Tree renovation and restructure for enhancing productivity.

We typically have been confronted with redeveloping 15-20 year old trees that have had no horticultural management in their lives to date. Trees are excessively tall with very poor leaf quality. The primary intervention to remove 1-2 major limbs to introduce light to the interior canopy is showing the anticipated responses of regeneration of new shoots and improved overall tree leaf canopy growth. (Also refer to spray programme section later).

In some groves renovation pruning was begun 1 year earlier than the Focus Grove Project and these now have two-year old renewal growths that show significant flower presence in the beginning of their third season from initial restructuring. This is a vital observation indicating the anticipated maintenance of tree productivity during redevelopment as well as a commentary on leaf retention on new growth. The achievement in long term leaf retention is indicative of the co-dependence between tree structure and the comprehensive spray programme.

Coming into the new 2017-18 crop cycle, all Focus Groves show exceptionally high flowering. This does follow a lower floral intensity from the previous year so is not unexpected. Additionally, we think that the improved tree structure is now contributing to ensuring improved bloom. The strategy to manage the crop load on trees if fruit set is successful will require secondary thinning pruning to reduce total fruiting volume. This is necessary to enable adequate annual shoot growth (for next year's flowers) and reduce tree yields from being excessive. A secondary effect of excessive fruit number is a lower oil yield at pressing. So for high quality oil we think a controlled crop volume of more optimally ripened olives is the preferred management approach.

Grove Disease Control – Spray Programmes

Our groves present a spectrum of success with disease control. At the upper end, groves are becoming very clean of obvious disease and the overall grove inoculum load appears to be diminishing, further reducing disease pressure and enabling even better outcomes from the spray regimes. Alternatively where the spray regimes have not been adhered to adequately, we are actually seeing disease presence increasing, when disease-risk weather conditions occur. This second scenario is limited to just a single grove. We have seen evidence of direct loss of crop to anthracnose infection of bloom and young fruitlets.

Where spray programmes are used well but seasonal conditions occur that cause long intervals between sprays because of ground conditions (typically in winter), it seems that disease control is better than may have been anticipated. The outcome from this is that control of grove disease pressure and retention of leaf canopy is somewhat more positive than expected. The significance of this observation cannot be over-emphasised because the inference is that a robust disease control regime does not have to be perfect to achieve meaningful durable benefits.

In response to losses of fruit from bloom stage through early fruit development and also to fruit rot at maturity, caused by anthracnose, we have modified the spray programme recommendations to close a potential infection gap. The issue arises from anthracnose infection at flowering even though the disease expression may occur during later fruit development or at ripening. The revised recommendation is to use a Manzate programme applied at 7 day intervals over the 3 weeks of flowering (regardless of rainfall except if 20mm+ rain occurs during flowering the Manzate must be immediately reapplied). In addition we recommend including a systemic fungicide Difference with the first Manzate spray at about 5% open bloom. This is to give some extra protection at a very vulnerable period in the crop calendar.

Summary

The stage of the Focus Grove project has now been reached where we can begin to observe the beneficial effects of leaf canopy health and tree structure on flowering, fruit set, fruit growth and harvested yields. The grove management improvements enable olive groves which have substantially greater growth potential than has been historically evident. The expectation is that such groves have a considerably higher (but unquantified) productivity potential, beginning with better fruit set from an abundant flowering. These features and the subsequent control and management of the ensuing crops will provide the next tranche of knowledge of grove performance under New Zealand maritime climatic conditions.