



Pruning strategies for avocados in late production regions

Pruning strategies is a highly debated topic. Couple that with a late production region that has trees bearing two crops at the same time and the debate becomes even more complicated. This can be a daunting exercise and, if done incorrectly, can result in major yield and performance loss which will only be visible in the following years.

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In this article, only 'Hass' is considered, specifically in the KwaZulu-Natal and Southern Cape regions, although late hanging regions in Limpopo and Mpumalanga could also benefit. These regions have two crops (a mature crop and a new crop) hanging on the same tree. Thus Uniconazole or Paclobutrazol cannot be used to control tree vigour during the flowering and fruit set periods, as well as the summer shoot management period.

This can become a major problem as carbohydrates need to be managed appropriately to promote both vegetative and reproductive growth. This article discusses and evaluates two strategies; all-cut asymmetric pruning and selective limb removal pruning.

To understand which pruning strategies work and which do not, we must look at why we prune and how this physiologically affects the tree. We prune:

- to increase light interception and distribution (in the tree as well as the interrow), as shoots that do not receive sunlight will die off, resulting in less growth points to bear fruit;
- to maintain tree shape and size, as these increase light interception and make management practices easier;
- to induce shoot and branch renewal: pruning branches induces growth of new shoots that can later be trained to form new fruiting branches or framework leaders; and
- to increase tree complexity: the more complex the tree, the more bearing positions there are.

Different sizes of cuts can trigger different responses from the tree. A small top cut can induce sporadic growth of many weak water shoots, while a large shoulder cut induces the growth of only a few strong water shoots, but both cuts play a crucial role in pruning. Another point of interest is that a cut above the start of a previous new flush can create very strong multiple shooting from that specific area.

Both pruning strategies are vastly different, both in time and effort required.

All-cut asymmetric pruning (KwaZulu-Natal)

This method was originally implemented by ZZ2 and was later refined by local growers to accommodate the conditions present in KwaZulu-Natal. All-cut pruning is a fast and simple

technique whereby a hedge trimmer mounted on a tractor cuts one side of the trees, allowing light into the centre. This large uncontrolled cut is followed by maintenance pruning to reduce the regrowth.

The method is termed asymmetric as trees planted in a North-South orientation will be pruned with an all-cutter every alternate year on the east side then the west side. On the opposite side of the tree, a diagonal cut is made to reduce the height of the tree. This large cut is done directly after harvesting for the first time, but can be repeated two to three times a season.

As stated earlier, follow-up maintenance pruning is required due to the all-cutter making small and big uncontrolled cuts resulting in variable regrowth of water shoots which will form a green wall if left unattended. The strongest vertical water shoots are removed to allow weaker shoots to grow more horizontally, increasing the complexity of the tree and also enabling faster flowering. Along with the maintenance pruning, windows will be cut on the opposite side of the tree, which did not receive pruning, to allow light into the tree canopy.

Selective pruning (Southern Cape)

At a study group hosted in March 2023, growers in the George area showcased their method of pruning. This method is more labour intensive and requires more attention to detail and timing. A rotating central leader approach is taken where small trees are trained to have 3-4 central leaders and each year one leader is cut out, and a new branch allowed to grow in its place. The central leader that is removed is cut back hard, allowing enough space for adequate light to enter the middle of the tree. Renewing the central leader also helps manage tree height.

Along with one of the central leaders being cut back, lateral branches are also pruned, in total 15-20% of the tree is cut back. This includes any branches that grow aggressively into the rows between the trees or grow strongly, limiting light from entering the middle of the tree. A general rule of thumb is that if there is/are dead space/branches in the middle of the tree, the tree is not getting adequate light.

The sun facing branches are pruned to allow more light in. Since we are based in the Southern Hemisphere, these would be the north-western and north-eastern sides of the tree, and would rather be cut open, before the back side of the tree would be cut.



Protecting the health of avocado trees: Understanding ASBVd and how to prevent its spread on orchards

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As with the all-cut method, follow-up pruning is required. With the same principles applying, the strongest vertical water shoots are removed allowing more horizontal growth of weaker shoots, thereby increasing the tree complexity.

Conclusion

In a case where money is limited and the equipment is available, the all-cut method can be utilised, but the degree of development of water shoots will vary and maintenance pruning will be needed to a greater extent than with selective pruning. Additional pruning within the same season will also be required to maintain the hedge form.

The selective pruning method may be effective, but requires labour with insight into pruning and can require more time to work through an orchard block. Pruning of orchards with this method should be done on a tree-to-tree basis, as neighbouring trees require different pruning intensities. This method also works best if training starts when trees are small. If done correctly, this method can yield good results.

In conclusion, both methods have pros and cons, and no method is perfect or can be used as a blueprint for pruning. Every orchard and region should be dealt with according to what method works best. It is important to prune, as any pruning is better than no pruning. 🌱

Avocado Sunblotch Viroid (ASBVd) is a disease that can affect the health and productivity of avocado trees. This small RNA molecule is capable of replicating itself within the cells of the tree, causing symptoms such as yellowing leaves, sunken or raised, yellow-green discolouration areas on the fruit with a bumpy appearance, stunted growth and reduced fruit yield. ASBVd is considered a major threat to the South African avocado industry and it is important for growers to be aware of the disease and take steps to limit its spread.

ASBVd is primarily spread through infected plant material, including grafts, buds, and seeds. Once a tree is infected, it can take several years for symptoms to appear. In some cases, infected trees may not show any symptoms at all, making it difficult to detect the disease.

To prevent the introduction of ASBVd into an avocado orchard, it is important to use certified disease-free planting material. This material is carefully screened for the presence of the viroid before it is used to propagate new trees. By using disease-free planting material, growers can help ensure that their orchards remain free of ASBVd and other diseases.

In addition, growers should practise

good sanitation to prevent the spread of ASBVd. This includes disinfecting tools and equipment between trees, and removing and destroying any infected trees. By practising good sanitation, growers can reduce the risk of introducing ASBVd into their orchards and prevent the spread of the disease if it is present.

It is also important for growers to regularly monitor their trees for symptoms of ASBVd. This can include yellowing leaves, stunted growth, and reduced fruit yield. If any symptoms are detected, the affected trees should be removed immediately to prevent the spread of the disease to other parts of the orchard.

In addition, it is important to monitor nearby avocado orchards for the presence of ASBVd. If the disease is detected in an orchard block, steps should be taken to prevent the spread of the disease to the next orchard blocks. This can include increasing monitoring and implementing stricter sanitation practises.

By taking these steps to prevent and manage ASBVd, growers can help protect the health and productivity of their avocado trees and industry as a whole. ASBVd is a major threat to the South African avocado industry and by working together, growers can help ensure the continued success of the industry for years to come. 🌱