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# Citrus Planting Management

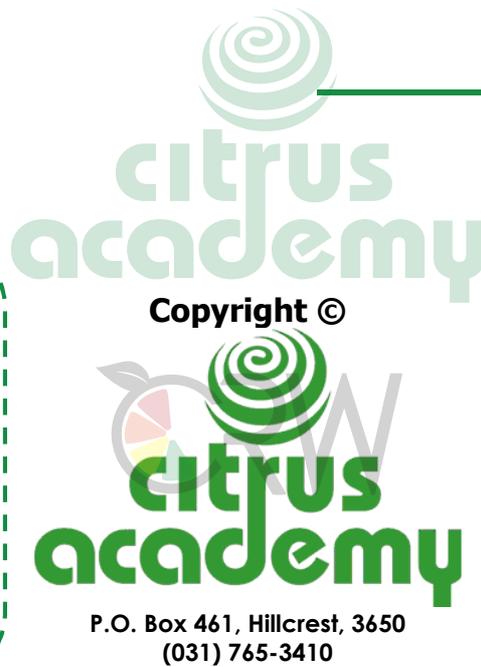
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## 5 Orchard Recordkeeping

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### Learner Guide

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**Additional information sources:**  
Citrus Production Guidelines: Volume I – Citriculture: Establishment, *Citrus Research International*  
Cultivar Fact Sheet, *Citrus Research International*  
Citrus Academy production learning material:  
Enterprise Selection and Establishment  
Orchard Establishment  
Propagation

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## Introduction

Now that the hard work of planning and planting a new orchard is done, the long work of managing the orchard begins. Over the next eighteen to thirty years, the orchard will have to be looked after, managed and monitored, so that it will produce good volumes of good quality fruit.

For the first few years, the young trees have to be taken care of to ensure that they grow vigorously so that they start producing marketable fruit as soon as possible. Assuming that your cultural practices are in order and that you will have all the necessary pest and disease control measures in place, you should see the trees coming into production within three to four years.

## information

### Production Practices

For more information on correct cultural practices as well as pest and disease control measures, you can consult the CRI's Citrus Production Guidelines ([www.cri.co.za](http://www.cri.co.za)). Production learning material in the form a series of audio-visual DVD's can also be ordered from the Citrus Academy, or can be downloaded in pdf-format from the website: [www.citrusacademy.co.za](http://www.citrusacademy.co.za).

## The Importance of Recordkeeping

To comply with the requirements of accreditation systems such as GlobalGAP, you have to keep records of a wide range of production practices. This already forms a good basis for the sort of orchard records that make for an effective management tool. But it does require that one views recordkeeping as more than a compliance issue, and rather as a function essential to management.

## definition

### GlobalGAP

GlobalGAP is an internationally recognized set of farm standards dedicated to Good Agricultural Practices (GAP). Through certification, producers demonstrate their adherence to GLOBALGAP standards.

## Tree Census Records

Central to the recordkeeping that is necessary for effective orchard management is the tree census. A tree census accurately records how many trees there are in every orchard on the farm, and includes details of the cultivar, rootstock and planting year of each orchard block. Apart from being necessary for the sake of compliance and a handy management tool, tree census information must be submitted to the Citrus Growers' Association every year. This enables the CGA to keep track of the citrus plantings per cultivar, per region, per province, and for the whole country. It also enables them to develop long term projection models,

which use current planting data combined with data on the bud-wood sold by the Citrus Foundation Block to project the planted area and production per cultivar for the next ten to fifteen years.

It would be tempting to think that the tree census can be recorded when the orchard blocks are planted, and then to assume that this will remain accurate and true for the whole lifespan of the orchard. This is however not a safe assumption to make. Keeping the map and plan that you developed while planning for the establishment of new citrus plantings is an excellent start, but this cannot be the end of it. Things happen to trees in orchards, and it should be recorded whenever there is significant tree loss, or replacement of lost trees. To be safe, it is good practice to double-check tree census records at least every three years by physically counting the trees.

If you for some reason do not have any records of orchards that have already been planted, it is essential that you put these records together. Hopefully you will at least have a map of the farm with numbered orchard blocks and the area of the blocks in hectares. If you do not even have this, you will need to obtain a map from the survey office, or have one drawn up by a surveyor. A surveyor will also be able to measure the area of the orchards for you. If you know the area of an orchard block, you can use the tree spacing to calculate the number of trees planted in that area.

## example

### Calculating the Number of Trees

If you know that the tree spacing is six by three (meaning six metres between rows and three metres between trees in the rows), you can work out that there are 555 trees planted per hectare, as follows:

- $6\text{m} \times 3\text{m} = 18\text{m}^2$  (meaning that one tree takes up  $18\text{m}^2$ )
- $1\text{ha} = 10,000\text{m}^2$  (a hectare being an area that is 100m by a 100m)
- $10,000\text{m}^2 \div 18\text{m} = 555$  (meaning that in one hectare of  $10,000\text{m}^2$ , there is space for 555 trees if they each take up  $18\text{m}^2$ )

Once you know how many trees are planted per square metre, it is short work to calculate the number of trees in each orchard block, and on the whole farm. It is a good idea to double check your calculations by physically counting the trees in at least one or two of the blocks. Also, be careful to assume that the tree spacing on the whole farm will be the same. It can vary between orchard blocks, depending on the cultivar and orchard layout.

Determining what cultivar was planted in orchards that you don't have records for, and how old the trees are is more difficult. Your best bet is to first try and get more information, starting with individuals that might have been involved in the planning or establishment of the orchards. You can also approach the nursery that supplied the trees, where they may still have records of the sale.

If you cannot get this information, your last port of call would be to consult an expert to help you determine the cultivar. From the growth habits of the trees, the maturation date of the fruit, and the fruit characteristics, an expert will at least be able to make an educated guess, which will be accurate enough for your purposes.

## Other Records

Other records that must be kept for individual orchard blocks include:

- ❖ Production records
- ❖ Spray records
- ❖ Weather data
- ❖ Results of annual leaf sample analyses, and
- ❖ Yield records showing volume, internal and external fruit quality measurements, maturity indexing data, export pack-out percentage, and so on.

## Conclusion

You need to keep track of what is happening in the orchards on your farm – remember always, you cannot manage what you do not measure. There are a great many things that can go off the rails in citrus production, and finding out about a threat once it has already done damage to your trees and to production is too late. With good recordkeeping systems, you will be able to pick up deviations before they develop into problems, and be able to address them in good time.

  
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