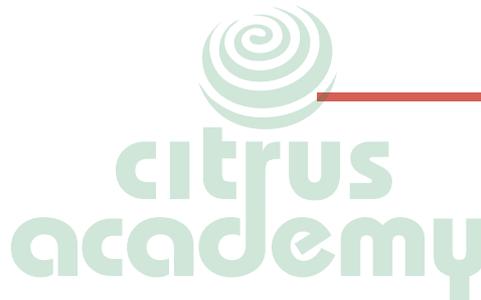

Citrus Packing

1 Value Chain

Learner Guide



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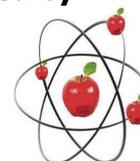
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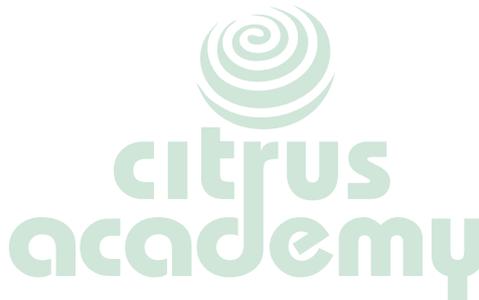
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Introduction

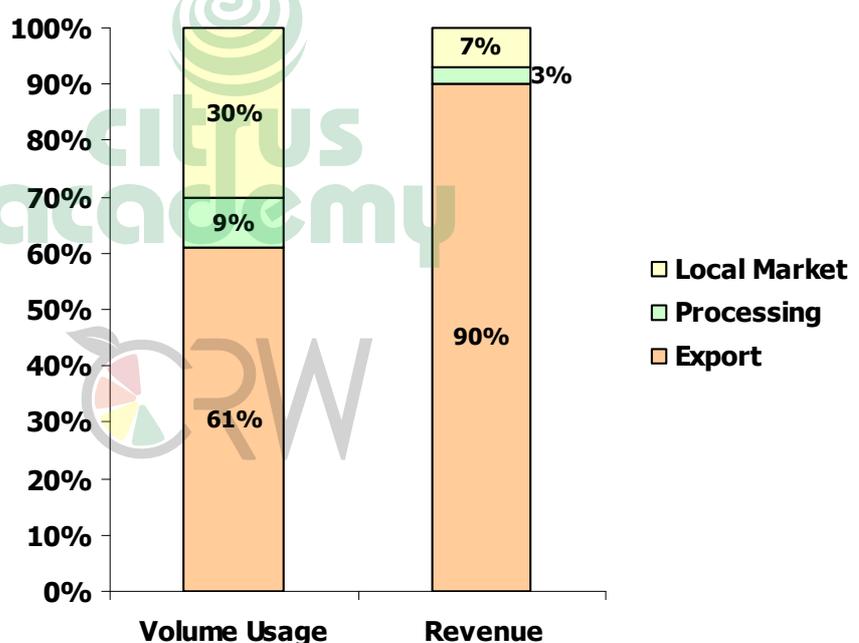
Just like every other businessman, a citrus grower runs his business in order to make a profit. How do you make a profit from farming with citrus? With very few exceptions, citrus farming is profitable only when the majority of the fruit produced on the farm is sold on the overseas market, where you can sell citrus for more money than on the local market.

We are lucky in South Africa to have land, water, and the right climate to produce a wide range of citrus fruit for a big part of the year. The fact that we are in the southern hemisphere also means that our citrus is ready for the market at a different time of the year from northern hemisphere countries. Because of these favourable conditions, we are able to produce good quality citrus fruit and supply it to people living in countries where they either don't produce citrus – because they don't have the land, water and right climate – or during a time of year when their fruit is not ready for the market.

information

Citrus Usage and Income

Of the commercially grown citrus in South Africa, about 61% is exported as fresh fruit. Of the balance, about 30% is sold on the local market and 9% is sent for processing. Yet over 90% of total revenue is generated from exports.



Export Agents

Many growers use an agent to help them with their fruit exports. An export agent's job is first and foremost to know the market, and to advise the grower on where to send how much of his fruit.

The export agent also plans and manages the shipping and sale of the fruit, and tells the grower and packhouse what the specific market requirements are for the fruit. The export agent then receives the money for the fruit from the buyer, pays costs, fees and levies to service providers, keeps an amount as commission, and pays the rest to the grower.

The Value Chain

When we look at the value chain for South African citrus, we look at the chain of events that must take place to bring our citrus to the market overseas. We call it a value chain because getting the fruit to the market is not enough – we must make sure that the fruit that arrives in the market is what the consumer wants in terms of how it looks, what it tastes like, and how it was produced. This means we must comply with the quality standards and requirements of the consumer. This is what gives the fruit value, and what makes the consumer willing to pay money for the fruit.

Before we look at the links of the value chain, we need to understand the meaning of the term 'value'. A useful definition for this term is the 'benefit that you can expect for something, normally measured in money'. People perceive the value of a thing differently, mostly depending on how much they need the product, how unique the product is, and how much the product meets their own expectations and requirements.

The **value** of a thing is not set by the cost of producing it – it is set in the mind of the person who holds the money, and if that person does not think it is worth spending money on, the product has very little value.

definition

Value

The benefit what you can expect for something, normally measured in money.

The Cold Chain

Another important thing that one must remember when exporting citrus, is that it is also a cold chain. Citrus is cooled to maintain the quality of the fruit, to slow down the ripening process and respiration, and to stop or slow down the development of postharvest diseases. Once citrus is cooled, whether that is in pre-cooling facilities at the packhouse or when it reaches the harbour, the cold chain must not be broken. Breaking will cold chain is the quickest way of breaking the value chain.

Links in the Value Chain

Please note that in this module, we use a simple example of a value chain to explain to you how it works, and we have included industry averages for the percentage cost that every link in the chain adds to the final cost of export fruit. Remember that cost structures of different operations and value chains are different, depending on cultivar, production practices, packaging, market and shipment of the fruit.

Your value chain may also include steps that we have not included here, such as fruit being repacked overseas before being sold. But it is important that you understand these principles, that you are able to analyse your own costs, and above all, that you understand how easily the value of your fruit can be lost.

Link 1 – Production

The first step in the value chain is the production of citrus fruit. Production includes every step up to the point where fruit is hanging on the tree, including:

- ❖ Choosing the right variety and cultivar
- ❖ Planting the orchard
- ❖ Taking care of plant nutrition and irrigation
- ❖ Pruning the trees when necessary
- ❖ Protecting them from pests, diseases and competition from weeds

All of these activities are aimed at producing the best possible quality fruit, and fruit that the consumer wants and will spend money on.

All of these activities also cost money. The grower pays the capital costs of establishing the orchard, including the land and land preparation, the irrigation system, the trees and so on, and he must buy the machinery and equipment that he will need.

After that, he must pay all the input costs for producing good quality fruit, including salaries, water, fertiliser, plant protection products and fuel.

Production is driven by two factors: **quality** and **volume**. The grower must produce fruit in volumes that justify the money he spent on capital and input costs. Volume is normally expressed in tonnage per hectare. The quality of the product is essential in creating value, meaning something that the consumer will pay money for. If the grower fails in either of these two respects, his farm will not be profitable.

If the grower and his workers do all their production tasks well, they will come to the harvesting season with a good volume of superior quality fruit hanging on the tree. We have already said that there has been considerable cost involved in getting the fruit to this point, but let us consider what the value of the fruit is.

It is obvious that it must have some value, and that good quality fruit of a superior cultivar will have more value, but what exactly is the value? In terms of realising the value that we aim for – the money that an overseas consumer pays for the fruit – it is not much at all. In order to realise this value, the fruit has only taken the first step on a long journey. We need to add more value, which means that we have to spend more money. Up to this point, we have only spent about 11.5% of what it will eventually cost us to get the fruit to the consumer.

Link 2 – Picking

The next step is to harvest the fruit and send it to the packhouse. This adds more costs, because pickers and supervisors have to be paid for their work, and equipment is required for harvesting. This cost is included in the 11.5% above.

1&2 – Production and Picking	11.5%
Total	11.5%

Link 3 – Packing

Once the fruit reaches the packhouse, it is, in some cases de-greened, washed, treated, waxed, sorted, graded, sometimes wrapped and labelled, and then packed into cartons, which are then stacked on pallets and inspected to make sure it is fit for export. In some cases, fruit will be pre-cooled at the packhouse before being transported. The cost that is added in this process can be quite a lot, and depends on the type of citrus you have and the market for which it is meant. But on average, packing adds another 13% of your total cost.

1&2 – Production and Picking	11.5%
3 – Packing	13%
Total	24.5%

Link 4 – Transport

The next link in our chain is moving the fruit from the packhouse to the port from where it is shipped to an overseas market.

Pallets can be loaded onto flatbed, tautliner or refrigerated trucks, depending on the cultivar and the market. Refrigerated trucks are used to transport fruit that has been pre-cooled at the packhouse. The fruit can also be packed into containers at the packhouse, with the packed container then shipped on a truck. Another option that is gaining popularity in South Africa is transporting containers or loose pallets by rail.

The distance that the fruit has to travel to the port depends on where you are in the country and where the port is from where your fruit will be shipped. The distance and method of transport determines how much it will cost you, but on average, transport makes up about 1.5% of your eventual cost.

1&2 – Production and Picking	11.5%
3 – Packing	13%
4 – Transport	1.5%
Total	26%

Link 5 – Harbour Handling

Before the fruit is loaded onto a ship, it may have to be stored at the harbour terminal for a period of time, where it is either cooled in pre-cooled facilities, or kept in holding rooms that maintain the temperature of the fruit if it has already been pre-cooled. This also costs money, and together with the handling fee that the fruit terminal charges, it adds another 3.5% to your costs.

1&2 – Production and Picking	11.5%
3 – Packing	13%
4 – Transport	1.5%
5 – Harbour Handling	3.5%
Total	29.5%

Link 6 – Shipping

The fruit is now loaded onto ships, either in containers, or as loose pallets. On the ship fruit must be kept at the temperature to which it has been pre-cooled, and is sometimes also exposed to cold a sterilisation treatment, depending on the market it is going to.

Shipping of fruit, including insurance, makes up about 18.5% of your total cost.

1&2 – Production and Picking	11.5%
3 – Packing	13%
4 – Transport	1.5%
5 – Harbour Handling	3.5%
6 – Shipping	18.5%
Total	48%

Link 7 – Receiving and Transport

When the fruit arrives in the overseas market, it is again handled in the harbour, sometimes stored, and transported to the point where it is sold to the consumer.

The grower also carries these logistics costs, which is about 13% of the total cost.

1&2 – Production and Picking	11.5%
3 – Packing	13%
4 – Transport	1.5%
5 – Harbour Handling	3.5%
6 – Shipping	18.5%
7 – Receiving and Transport	13%
Total	61%

Link 8 – Sales

The fruit is now eventually sold to the consumer. The retailer adds on his profit margin, which is normally around 30% of the final costs, and the consumer buys the product.

1&2 – Production and Picking	11.5%
3 – Packing	13%
4 – Transport	1.5%
5 – Harbour Handling	3.5%
6 – Shipping	18.5%
7 – Receiving and Transport	13%
8 – Sales	30%
Total	91%

Other Cost

The last cost item that we must add is the commission of the export agent and the importer, and the various levies and inspection fees that is paid on export fruit. This adds the final 9% to the cost.

1&2 – Production and Picking	11.5%
3 – Packing	13%
4 – Transport	1.5%
5 – Harbour Handling	3.5%
6 – Shipping	18.5%
7 – Receiving and Transport	13%
8 – Sales	30%
Other Costs	9%
Total	100%

Value and Profit

The big question is now: how much does the consumer pay for the fruit?

If the consumer looks at the product and thinks that it is good value for money, she will pay enough to cover all the costs that we have listed above, and there will be a little left for the grower to make a profit. The value is therefore more than the costs for producing, packing and shipping the fruit. This is of course mostly the case – there are enough growers in South Africa that is able to make a decent living from producing citrus to prove that it can be a profitable business.

Breaking the Value Chain

But a chain is something that can be broken, and breaking the value chain is to lose all the value of our product. Let us look at this chain of events again, and consider everything that can go wrong and that can mean that the consumer will not see enough value in the fruit to be willing to pay enough money for it, to cover our costs and put some money in the pocket of the grower.

Link 1 – Production

Let's say that when the fruit was on the trees, somebody didn't pay attention to the irrigation of the trees while the fruit was growing, and the fruit turned out to be very small. If this fruit is even exported – which in many cases it won't be because it will simply not meet the requirements – the consumer will not be willing to pay good money for the fruit, because it does not meet her expectations. The fruit will have to be discounted, or sold on the local market for a lot less money.

The value chain was weakened, value was lost.

Link 2 – Picking

As a next example, let's say that while fruit was being picked, a fruit fell on the ground and the worker picked it up and put it with the other export fruit, because he was never told not to do this. Nobody could see that this fruit was infected and it went through the packhouse and was packed with other fruit in a carton.

But when the fruit arrives in the overseas market, the entire carton is infected with sour rot. This fruit cannot be sold to the consumer, and will be destroyed. The grower will still have to pay for all the costs of producing, packing, transporting and shipping the fruit, but he will get no money for it.

The value chain was broken by one picker that wasn't trained properly, and value was lost.

Link 3 – Packing

Let us now look at the packhouse. Let's say that the concentration of fungicides in the hot water fungicide bath was not monitored regularly, and the fruit was not treated well enough to kill all the fungal spores that it brought in from the orchard.

Nobody can see that there is a problem at the packhouse, and the fruit is packed and shipped. It arrives in the market overseas, and some of the fruit is covered in mould. The importer takes the time to sort the fruit again, to find those that can still be sold, adding even more cost for the grower. The grower will now only get some of the money for the shipment, and may or may not be able to cover his costs.

The value chain was compromised, value was lost.

Another example from the packhouse is the person stacking the pallets not paying attention, and thinking that it is not really important to use the right stacking pattern – as long as the cartons stand in stacks on the pallets, he cannot see why he should do the extra work to put them in a pattern. This pallet is now loaded on a truck and transported to the harbour.

Because the stacks on the pallet are unstable, the cartons start shifting, and by the time the pallet is picked up to be loaded onto the ship, it is so unstable that the stacks simply topple over.

The fruit and the cartons end up smashed to pieces on the quayside. The harbour is not willing to take responsibility for this, and the packhouse carries the cost for that pallet.

The value chain was broken by a pallet stacker that didn't understand the importance of his job, value was lost.

Link 5 – Harbour Handling

We have already said that maintaining the cold chain goes hand in hand with maintaining the value chain. Let us look at an example here.

At the pre-cooling facilities at the harbour, the inspectors are on their way, and the forklift driver takes your fruit out of the cold room and put it outside, ready for inspection. But the inspector is delayed, and arrives three hours late. By now, your fruit has been standing outside on a sunny winter's day in Durban for five hours. The fruit has warmed up and started to respire faster.

The inspector eventually arrives, approves the consignment, and the fruit is returned to the cold room. But now, because the cold chain has been broken, the fruit starts to decay very quickly, because that is what happens when the temperature is not kept stable. By the time the fruit arrives in the market overseas, decay has set in good and proper, and the whole lot has to be destroyed.

Breaking the cold chain is the surest way to break the value chain.

What Link Are You?

There are a great many examples of how things can go wrong in this chain of events. How many more can you think of?

What can happen in the particular job that you do, that can compromise the fruit and destroy its value? What does it mean for you and your job, if the grower and the packhouse have to carry these losses, which could easily have been prevented?

Conclusion

Exporting a fresh product like citrus fruit is not for the faint hearted. It is possible to make good money from this business, but it means that one must be willing to face many risks.

Some risks cannot be controlled by the grower, like the weather, the exchange rate, and production from other countries that compete with our fruit.

But there are also many of these risks that can be controlled, and many things that each person in this chain can do to make sure that the value of the fruit is not placed at risk unnecessarily.

active learning

Watch the DVD clips, read through the learning material and do workplace research to gather the knowledge and information to complete the assignments below.

Activity 1 – Flowchart

Draw a flowchart to explain your understanding of the process that is followed in the fruit industry, from when the fruit is picked to when it is delivered to the consumer.

Activity 2 – Group Project

Work as a group to complete the following tasks:

- ✓ Hold a discussion around the flowcharts that each member of your group developed in activity 1. Draw a poster showing the links in the value chain that your group agrees on.
- ✓ Add to each link in the chain the critical control points that will impact on the quality of the product.
- ✓ Brainstorm as a group and identify the possible pitfalls for each link and critical control point in the chain. Write your conclusions on post-it notes and add these to your poster.
- ✓ Summarise your findings by making keynotes in your workbook.

Activity 3 – Workplace Research

Conduct workplace research and write a 2-page report on the cost chain of your business. Include the following information:

- ✓ Details of the citrus type(s) that is handled / produced by your organisation
- ✓ Details of the markets that are targeted for your fruit
- ✓ The links in the value chain for the fruit, including detailed information on the actions taken at each link and the persons / service providers responsible for those actions
- ✓ The percentage cost associated with each link in the value chain

Activity 1 – Flowchart

Draw a flowchart to explain your understanding of the process that is followed in the fruit industry, from when the fruit is picked to when it is delivered to the consumer.



