Citrus Pruning

2 Pruning Equipment

Learner Guide

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Introduction

Choosing the right pruning equipment and making sure that the equipment is working properly before pruning starts is half the battle won. In this module we look at the equipment that is used for pruning, how to choose the right tool for the right job, and how to clean, maintain and store the equipment to get the best and longest use out of it.

Pruning Equipment and Uses

There are a number of pruning equipment brands, ranging widely in price and quality. As with everything else, you need to remember that what you pay for is what you get. You need to carefully weigh up saving money in the short term against having to replace equipment regularly. Poor quality equipment may also make pruning slower and less productive, and even cause damage to trees and injury to pruners.

Using the wrong equipment for a particular pruning action, or not properly maintaining and repairing equipment, can also slow down the pruning process and cause damage to trees.

Pruning Shears

The first pruning tool is pruning shears. Pruning shears can be used to cut branches up to thirty millimetres in diameter, which is about the thickness of a broomstick. You have to be careful while using pruning shears, because you can easily remove fruit-bearing wood. It is best to use pruning shears mostly for skirting, and to use a lopper or a pruning saw for cutting branches with a bigger diameter inside the tree canopy.

Pruning shears are available in different types, shapes and sizes, and it is helpful for workers to select the shears most suitable to them. For instance, workers with smaller hands will prune much quicker and better if they have smaller pruning shears that they can handle easily, while left-handed workers need left-handed pruning shears.

Loppers

Loppers are larger than pruning shears, and have long handles. Loppers are meant for cutting branches of up to 45mm and can also reach further.

Mechanised loppers and pruning shears are either battery-driven or pneumatic. They are much more powerful than hand-operated shears and loppers, and can cut smoothly and evenly through branches. They are considerably more expensive than manual shears and loppers, but may be worth the cost for the sake of efficiency, productivity and limiting damage to trees.

Pruning Saw

A pruning saw is a small saw that is used with one hand, and is used to make most cuts while pruning. Some types of pruning saws fold up, which make them safer to use and carry, while others with longer blades come with a sheath. Pruning saws usually only cut in one direction. Forcing them too hard in the wrong direction can warp and break the blade.

Other Saws

Larger saws, such as bow saws, wood saws and chain saws, are sometimes used during pruning because they can speed up the work. It is, however, not advisable to use bow and chain saws because they make rough cuts which are more vulnerable to infections. They are mostly used to cut tree trunks for re-grafting, or to remove large branches.

Other Equipment

While pruning you will also need a few other things. Strong PVC gloves are useful for protecting your hands while pruning, especially for citrus varieties that are thorny. A skirting stick that is as long as the required skirting height is also useful, as is a stick the length of the required tree height. For high trees you will need a ladder, although most pruners prefer to climb the trees to make cuts inside the canopy.

Equipment Maintenance

If you look after your pruning equipment it can last for many years. Proper maintenance matters even more if you want to use high-quality, expensive tools productively for a long time.

Maintaining Pruning Shears and Loppers

Pruning shears and loppers are similar in terms of their parts and the manner in which they have to be maintained. In this section we refer to pruning shears, but all of the tasks are equally applicable to loppers.

Before we look at maintenance practices for shears, you need to know their parts and understand the role each part plays. Your pruning shears may look slightly different from this, but you should be able to identify all the parts that we have labelled here.

The handles of pruning shears are normally covered in a non-slip coating and designed to fit into a hand comfortably, so that they can be used for long periods without causing pain. The volute spring, which is a spring that forms a spiral, allows the shears to open and close smoothly. Rubber pads on the handles act as shock-absorbers, which makes shears more comfortable to use and increase productivity. The larger of the two blades is called the cutting blade, while the other is the anvil blade. The blades bypass, much like the blades of scissors. The centre nut can be loosened or tightened to adjust the blades, and the locknut keeps the centre nut in position with interlocking teeth. The thumb lock makes it easy to lock the shears when they are closed.

Before pruning starts for the season, pruning shears must be cleaned thoroughly, greased and checked. Look closely at the blades to see whether they need to be replaced.

While you are pruning, it is important to check your shears every day, and to sterilise them regularly. You should also sharpen the blades at least once a week. We do this after cleaning and greasing the shears. Once pruning is over pruning shears must be cleaned thoroughly, oiled and greased where necessary, before being stored.

Checking Pruning Shears

Check that your shears are in a good working condition before pruning starts and regularly during pruning. Check that the volute spring is clean and has the right tension. It should be relatively easy to push in, but it should then kick out strongly when you let go. Check that the blades are clean and sharp, and check the blade alignment, which we discuss in more detail later on in the section about adjusting blades. If the shears are just coming out of storage, check for rust. If you hold the shears horizontally in your hand and drop the top handle to close them, the cutting blade should close about two thirds down the length of the anvil blade.

Cleaning Pruning Shears

Pruning shears get covered in sap and bits of the tree while pruning, and they have to be cleaned thoroughly to prevent damage and to keep them working smoothly.

You will need soapy water in a bowl or in a spray bottle, a sponge scouring pad and a cloth or paper towel, and a spanner that fits the locknut screw on your shears. You need to take the shears apart to clean them properly. Please check the instructions for your make of pruning shears to be sure, but it should involve the following steps.

Remove the spring and put it in the soapy water. Loosen the locknut screw and remove the locknut and centre bolt and nut. Separate the handles and the blades. Spray all the parts with soapy water. Scour the parts with the scourer. Never use a steel pad, as this will remove too much metal. Rinse all the parts, pushing the spring in and out. Dry each part. In particular, make sure that the indent in the bottom half of the anvil blade and the anvil blade itself is clean and dry. Be careful when working with the cutting blade, remember it is sharp.

Sterilising Pruning Shears

Pruning shears that are not properly sterilised can transmit diseases between trees. Best practice is to sterilise your shears after every row, and every time you change cultivars.

You can use either a container in which you can dip the blades, or you can use a spray bottle that you can carry with you. Apply the product, shake off the excess water, and you can continue working.

Greasing Pruning Shears

Pruning shears must be greased, and not oiled. Put a little grease in the indent in the anvil blade, around the hole through which the centre nut goes, and grease the central bolt and nut.

Reassemble the shears, checking that the parts fit properly and snugly. Replace the centre nut and bolt, tighten the nut, and replace the locknut and its screw. Spray a little lubricant oil on the spring before replacing it.

Adjusting Blades

When the blades of pruning shears are properly aligned they are neither too close nor too far apart. If they are too tight, it will be more difficult to open and close the shears, and it will slow you down. If they are too loose, they will not cut cleanly, which will also slow you down and may even cause damage to stems and branches. You can check whether the alignment is right by removing the spring and holding the shears in your hand so that the anvil blade is at the bottom. Lift the top handle and drop it down. The shears should close to about two thirds along the length of the anvil blade. If they are too loose, they will close all the way, and if they are too tight, they will not close far enough along the anvil blade.

To adjust the blades, with the spring removed, loosen the locknut screw and remove the locknut. Adjust the centre nut until the blades close just right. Replace the locknut and the locknut screw, and replace the spring.

Sharpening Blades

To sharpen pruning shear blades you must use the correct sharpener or sharpening stone. Never use sandpaper or metal files.

To sharpen the blade, open the shears and hold them flat in the left hand with your fingers between the handles. The sharpener should be at an angle of about 23º. This means that if this is 0º, and this is 90º, halfway would be 45º. Halfway between that and the blade gives you the right angle of about 23º. Move the sharpener a few times along the sloped edge of the blade or use circling motions while keeping it at the right angle. Don't just work in one area, though, as this will make the edge uneven. Don't use too many strokes at a time, but rather sharpen the blade every day with two or three strokes. When you are done, turn the shears over and clean the burring from the straight edge of the blade, using the sharpening stone at a 5º angle.

Replacing Blades

When the cutting blade no longer bypasses the anvil blade perfectly along its entire length, it needs to be replaced. You will find specific guidelines for replacing the blades of your make of pruning shears, but generally it involves the following steps.

Take the shears apart as for cleaning. Make sure that the replacement blade is the right one for your model shears. Grease and reassemble the shears again with the new blade in place, and then adjust the alignment of the blades.

It might sometimes be necessary to replace other moving parts during the season as well, so check your shears regularly and follow the manufacturer's instructions.

Maintaining Pruning Saws

Saws are much easier to maintain than shears. As long as they are kept clean and sterile, they should remain in good working order. A pruning saw is cleaned by simply spraying soapy water on the blade and wiping it carefully with a cloth, and it is sterilised using the same method as for pruning shears. Remember to also sterilise your pruning saw between rows and whenever you change cultivars.

You may, however, from time to time need to replace a saw blade. The blades of pruning saws can break if you push them too hard in the wrong direction and they twist.

To replace the blade, remove the bolt and nut in the handles, pull the blade out, and push the new blade into position so that the hole for the bolt lines up with those in the handle. Replace the bolt and nut, and tighten them. On a larger pruning saw you may have two bolts that you need to remove.

Managing Pruning Equipment

Here are a few simple steps that will help to make sure that a grower gets the best use out of this equipment during pruning.

Generally speaking, it is good management practice to issue pruning shears and pruning saws to individual workers before pruning starts, and to have a worker use the same tools the whole time. Keeping tools clean, sterile and in good working order makes pruning easier and quicker, and workers who take responsibility for their own tools are able to take advantage of this.

Keep a small box with emergency parts for shears and saws on hand during pruning. Small problems with tools can then be solved immediately without wasting time. A screwdriver and spanner for taking shears and saws apart should also be in this emergency toolkit, along with sharpening stones and cleaning material.

Lastly, check the warranties and guarantees when you buy new equipment. Making use of the free replacement parts can mean considerable cost savings. Some manufacturers have a lifetime guarantee on parts of the shears, such as the handles.

Storing Pruning Equipment

Tools and equipment must be stored in a cool, dry, secure area where they are protected from the elements. To prevent rust, spray them with a little oil, wiping away the excess.

Conclusion

The best trained pruners will not be able to do their work well if they do not have the right tools and equipment. Buy the best equipment you can afford, put measures in place to keep tools in the best possible condition, and make sure that problems can be solved as soon as they occur while pruning.