

How we built a sturdy protective system for our country yard orchard and vegetable gardens.



We are very fortunate to live in a beautiful opening in a eucalypt forest and we have all sorts of hungry native animals with which we share our space that are very keen to taste our crops, and always very interested in what we are growing.

The system I am about to describe is 100% effective against marauding Eastern Grey Kangaroos, Swamp Wallabies, Pademelons, Bandicoots, Possums, Currawongs, Bower Birds, Brush Turkeys, Magpies, Lyrebirds and, of course, Grey-headed flying-foxes! It also keeps out pesky bunnies!

The only wildlife the netting system does not stop is small native rodents (eg. Antechinus, Bush & Swamp Rats), and smaller birds like Red-browed Finches & Superb Fairy Wrens. But we like these animals inside our gardens as they are not generally interested in the fruit and vegies – they mainly keep down the insect pests.

We now have an abundantly producing vegetable garden and a thriving fruit orchard where we get to keep all the goodies we grow all to ourselves!

The Vegetable Garden



Following is the system and methodology we adopted. It is not the only way you can do it effectively but we did find that, with a bit of practical sense and only a few tools, this system can be built quite cheaply and it works. Our system protects four raised vegetable beds each containing 10 square metres of growing space.

I estimate the protection system cost me about \$600 and three weekends to construct - a small price to pay for endless fresh vegies for the whole family.

The basic elements and tools required are:

- 50mm polypipe (either green with pale yellow stripe or black; ensure it is strong and flexible; available in 50 or 100m rolls which can be purchased for under \$2 a metre. Don't use cheap, thin walled polypipe which can split)
- a hacksaw
- standard metal star pickets
- black UV resistant knitted bird netting in a 5m wide roll
- a string line
- a cake of soap
- heavy galvanised chook wire (1.4m height)
- a roll of tie-wire
- plastic cable ties
- strong galvanised wire
- a heavy sledgehammer
- tape measure
- cordless drill and bits
- pliers
- scissors
- spirit level

The simplicity of the system is founded upon the fact that the 50mm polypipe slides neatly and tightly over the star picket.

- Step 1 - Peg out the area you wish to net (a long rectangle is best) with your tape measure and space the star pickets at 2 metre intervals around the perimeter of your shape. Make sure they correspond with the star picket on the parallel edge of your rectangle and make sure your corners are perfect right-angles.

For ease of construction make sure the arch of the tunnel above the wire mesh is the same distance as the width of your netting (eg. 5m). This will remove any need to sew up lengths of netting to ensure you get 100% cover. Make sure you have at least 100mm overlap of bird netting over the top of the wire mesh fencing around all four sides.

- Step 2 – Bang the star pickets in plumb with the sledgehammer. Check the 'plumb' with the spirit level.
- Step 3 – Cut lengths of polypipe that will arch over the short side of your rectangle and match up with the corresponding star picket on the other side. Make all the polypipe lengths the same but make sure they allow enough head space to walk erect beneath them when they are in place over each star picket. (It's a real pain if you have to scrunch over your body every minute you are in your garden !).
- Step 4 - Scrape a little bit of soap inside each end of your cut polypipe lengths. This will help them slide more easily over your star pickets.
- Step 5 - Now erect your polypipe tunnel frame by sliding each length of polypipe end over the matching star picket on the other side of your rectangle. Push each end of polypipe right down to soil level.

- Step 6 – If you wish to make the garden wallaby as well as bird-proof, now is the time to erect your chicken mesh around the perimeter. Splay out about 150mm of the bottom edge of mesh on the ground on the outside of your rectangle – this will help deter persistent critters that might try to dig under your fence. But don't forget to allow a 800mm door way or two. Erect an additional star picket post to mark out where you want these and begin to erect your wire mesh edge at the outside of these doorways.
- Step 7 – Strengthen the frame by drilling a series of parallel, horizontal holes through the polypipe at 1.5 metre intervals through which can be run the strong galvanised wire which reinforces the frame and helps hold up the netting. Use the string line to ensure these holes match up along the length of the polypipe frame.
- Step 8 – Once the frame is sufficiently strengthened you can drape your netting over. Use the plastic cable ties to tie down one long side. Then stretch the netting (taut but not too tight) from the other long side and use the cable ties to tie down this edge. Now you can complete your structure by folding in and tying down the two short ends of your tunnel.
- Step 9 – Gates can be fiddly but we went for a simple 'Queensland style' gate with a wire hoop at the top of a star picket looping over a second star picket that formed the edge of the door. Allow enough slack in the overhanging bird netting so you can bend under it and get inside.



The Orchard

This was a more time-consuming and expensive structure but the way we looked at it, fruit trees can live and produce for decades, so if we wanted to grow our own fresh, organic fruit, we wanted to make sure our efforts were 100% native critter-proof.

The system I am about to describe does not require heavy machinery (apart from a post hole digging tractor) and can be done by a single keen handy-person. The only bit requiring two people was for a few hours when erecting the central hardwood poles.

The home orchard contains 22 fruit trees (apples, pears, plums, apricots, nectarines, peaches, oranges, mandarins, lemons, tangelos and lemonades) and four blueberry bushes, as well as additional vegetable garden space.

The structure is 25m x 20m in dimension with a sloping canopy that has a maximum height of 4.5 metres in the centre and a minimum height of 3.5m around the edge.

I estimate it cost us about \$1,600 for materials and about five weekends to design and construct. This figure does include the contract fencer costs but does not include the drip irrigation system.

The orchard trees were in for 18 months (protected by wire netting cylinders) when we pegged out the perimeter and contracted a local rural fencer to erect a wallaby-proof, 1.2metre high perimeter fence. We had the canopy in mind when we pegged out the orchard & hired this bloke, so the unusual feature we incorporated into the design was 4m long hardwood fence posts at 8m intervals around the perimeter.

Once the fencer was finished (he also made and erected our two beautiful hardwood orchard gates) we then set about erecting the netting canopy as follows;

Step 1 – At two points inside the rectangle, lined up with the tall hardwood posts on either short side of the perimeter, dig two holes 500mm deep and 300mm in diameter. These holes will form the base for the interior hardwood posts. Repeat this process and dig another two holes of the same dimensions, lined up with the other hardwood posts on the short side of the rectangle.

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Step 2 – Using gravel, sand and cement make up a strong mix of concrete in a wheel barrow and fill these holes with it, erecting a 90mm galvanised steel stirrup in the wet cement of each hole. Ensure this stirrup dries level, straight and true in the cement. Repeat this step for the other three holes. Allow a full week for the cement to properly dry and cure.

Step 3 – Purchase 4 x 4.5 metre x 100mm x 100mm hardwood posts (or similar – metal could work just as well), treat them with a good preservative such as 'Woodshield', and drill a 3mm diameter hole through one end of each post at each mid point and each diagonal about 50mm down from the post end. These holes will be used to thread through galvanised wire which will help hold up the netting.

Step 4 – Using two strong people erect the hardwood posts in the stirrups, straight and plumb, and fix the base of each post to each stirrup using strong galvanised

metal 10mm bolts. Star pickets driven in at an angle and attached to the side of the posts at knee height can be used to stabilise the posts.

Step 5 – Screw a star picket, using 3 x strong galvanised screws per star picket, with about 900mm overhang to the top of each tall hardwood fence post. Cap each star picket with a yellow plastic cup. This will effectively raise the edge height of the netting canopy 900mm above the height of the hardwood posts.

Step 6 – Run two parallel horizontal runs of strong galvanized wire above the fencing wire mesh and right around the perimeter. One run should be through the top hole of the star picket, just below the plastic cap, and the second run should be at a midpoint between this higher horizontal wire and the top of the fencing wire mesh. These wires help straighten and strengthen the drape of the netting to create the vertical netting walls of the enclosure.

Step 7 – Run lengths of strong galvanised wire from the top of each star picket down one side through the top of both corresponding interior hardwood posts and out to the corresponding tall fence post on the other side. Repeat this process for the other pair of interior hardwood posts. Then run the diagonal wires from each corner of the fence perimeter, through the interior hardwood posts, to the corresponding corner. These wires both stabilise the interior hardwood posts and create the framework over which is draped the netting. CAUTION – to do this step you will be working at a maximum height of 4.5 metres on a ladder and you need to be very steady and careful!

Step 8 – Our orchard dimensions and perimeter fence design were carefully structured to accommodate three runs of 10m wide UV resistant netting. The central run of netting was erected first. This was dragged over the central strip of orchard canopy wire framework first, so that it had a metre overhang outside the line of each pair of interior hardwood posts. The second run of netting joined the edge of this central run and had a 2m overhang which formed the draped outside wall of the enclosure on one side. The third run of 10m wide netting joined the other side of the central run and formed a 2m draped wall on the other side of the enclosure.

Step 9 – Now comes the tricky bit – sewing up the two long edges of the netting where runs two & three joins the central run one. This is a potentially dangerous job, done at height, and you must be very careful and steady doing this Step. We used 1.5mm tie wire and painstakingly threaded it through both joining edges to make a bird-proof joined edge. It's a pain of a job but be sure to do it well and leave no gaps. Leave a single hole and a Bower Bird will find and exploit it inside a week!

Step 10 – Now tie down the ends of each run of netting to the top of your wallaby proof fence mesh using either plastic cable ties or a fencer's staple gun.

You now have an orchard which is 100% animal predator-proof!