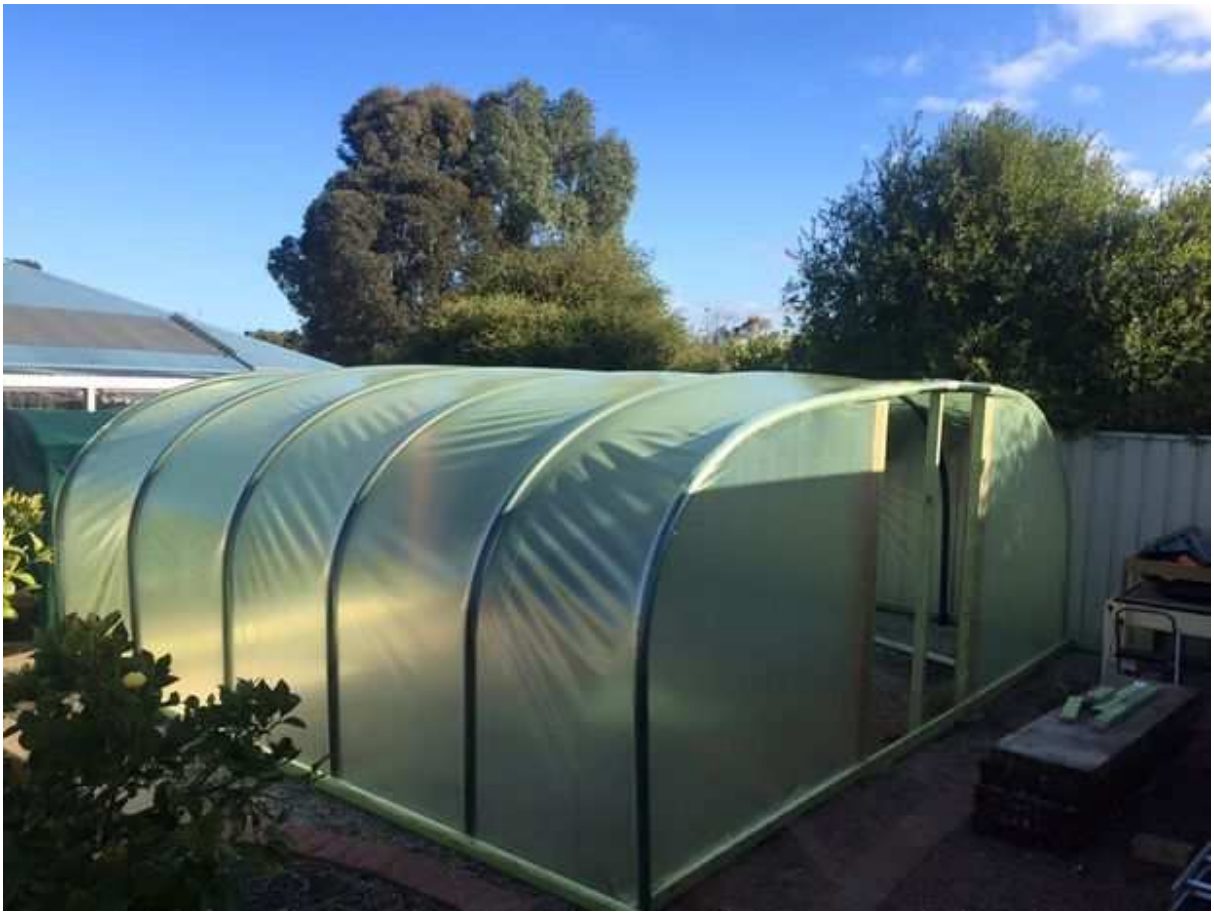


Afternoon gardeners!

Here's an easy Shade house / Greenhouse build you can do on the cheap. I put most of it up myself today, it's really quite easy.

I've covered it in 70% shade cloth for the harsh Aussie sun.

It just kills everything if you miss one watering.

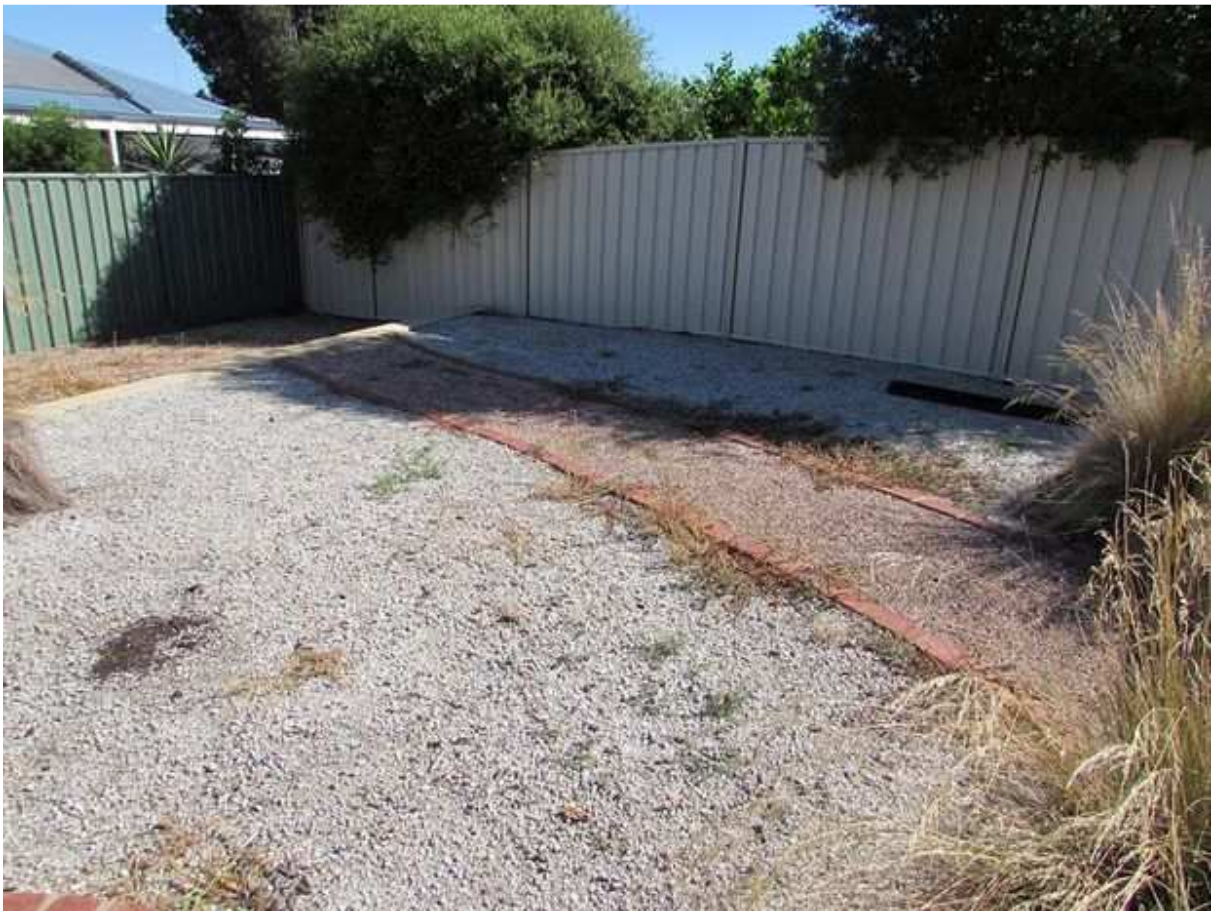
I only did a quick measure and sketch of what I wanted, the spacings of the pickets and used an online calculator to estimate the shade cloth required.

This is very sturdy and doesn't budge in the wind whatsoever, my wife actually hung from the centre of the poly support and it didn't shift at all.

The measurements of this shade house are 5.5 metres long by 2.5 metres wide, I later made a greenhouse ( more pics of this at the final step) of 6 metres x 5 metres using a similar design with the only differences being a treated pine frame around the base to hold the plastic in place and 3 ceder posts cemented in the ground to support my tomatoes this coming season

The larger greenhouse holds extremely well in harsh weather even with 6 meters between the star picket supports.

## Step 1: Select Location and Gather Materials



The chosen area.

I chose this area as it gets minimal afternoon sun and decent morning sun, little wind also.

Very weedy though, I can't keep up with burning all of them!

Please note the bottom prices are quoted in the Australian dollar, however if you aren't located in Aus this will be of a great benefit, because we get crazy shafted price wise on many goods and services so you should be able to do this much cheaper, which is always nice.

Materials purchased:

10 x 1650 mm star pickets - $60 (Statewide irrigation)

20 meters of 2 inch green line rural grade poly - $90 (Statewide irrigation, just ask for the offcuts)

70% shade cloth - 20 x 3.6m - $350 (A local mum and dad nursery, a little steep but we like to support the locals)

Star picket post rammer - $55 (Home Hardware)

I also purchased a 50 metre roll of heavy duty builders plastic (300um grade - $400) to cover the ground in both houses, you'll find that with the temperature in the greenhouse and the awesome irrigation in the shade house you will get muchos weeds.

It was costing a fortune in butane to burn the weeds and because we try to avoid all chemicals on our block this seemed the best way to go.

Sprinkler system materials:

I don't have prices on the following because I bought bulk at a heavy discount when a local hardware closed down but the components for the sprinkler system comprised of:

13mm poly pipe - 30 metres

3 x 90 degree 13mm corner connections

3 x 'T' 13mm connections

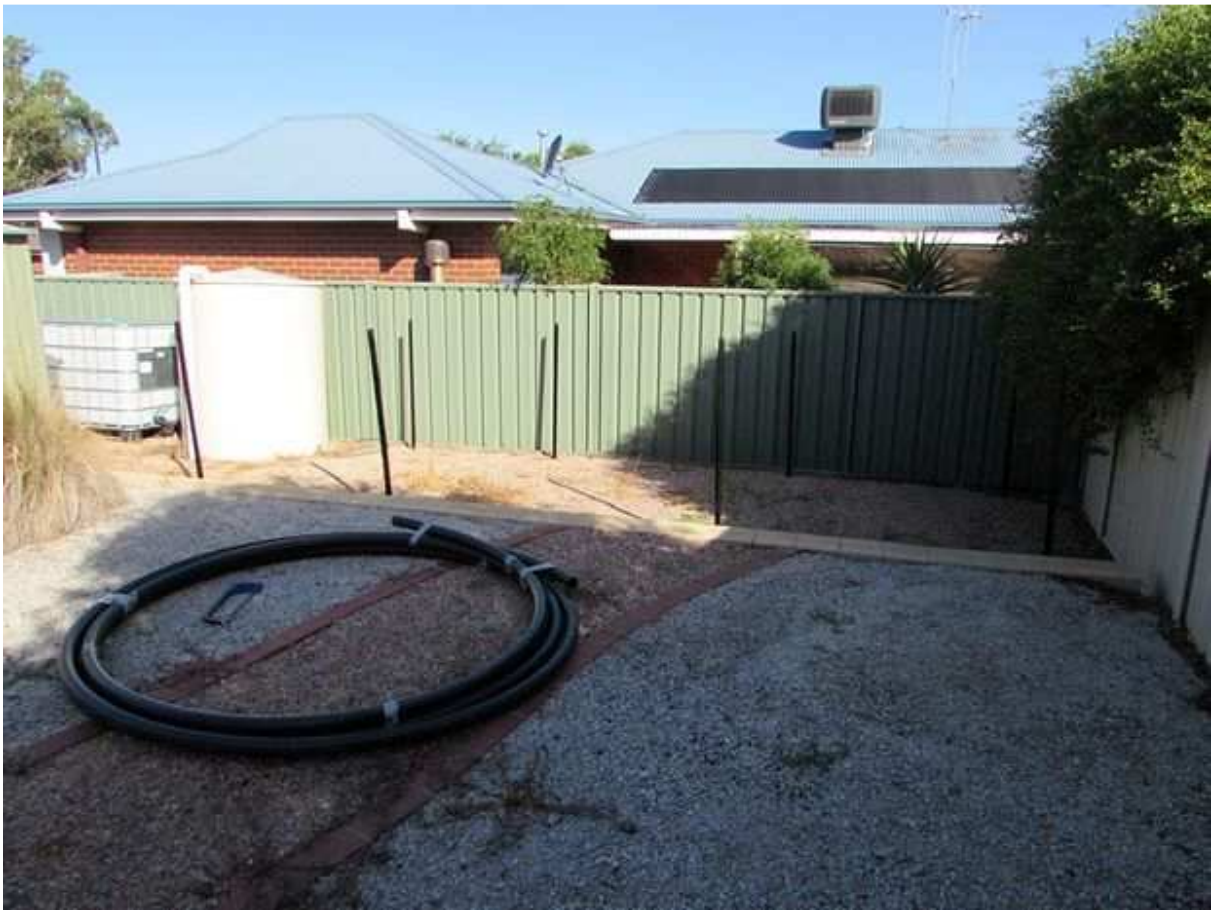
1 x 13mm pipe to garden hose connection

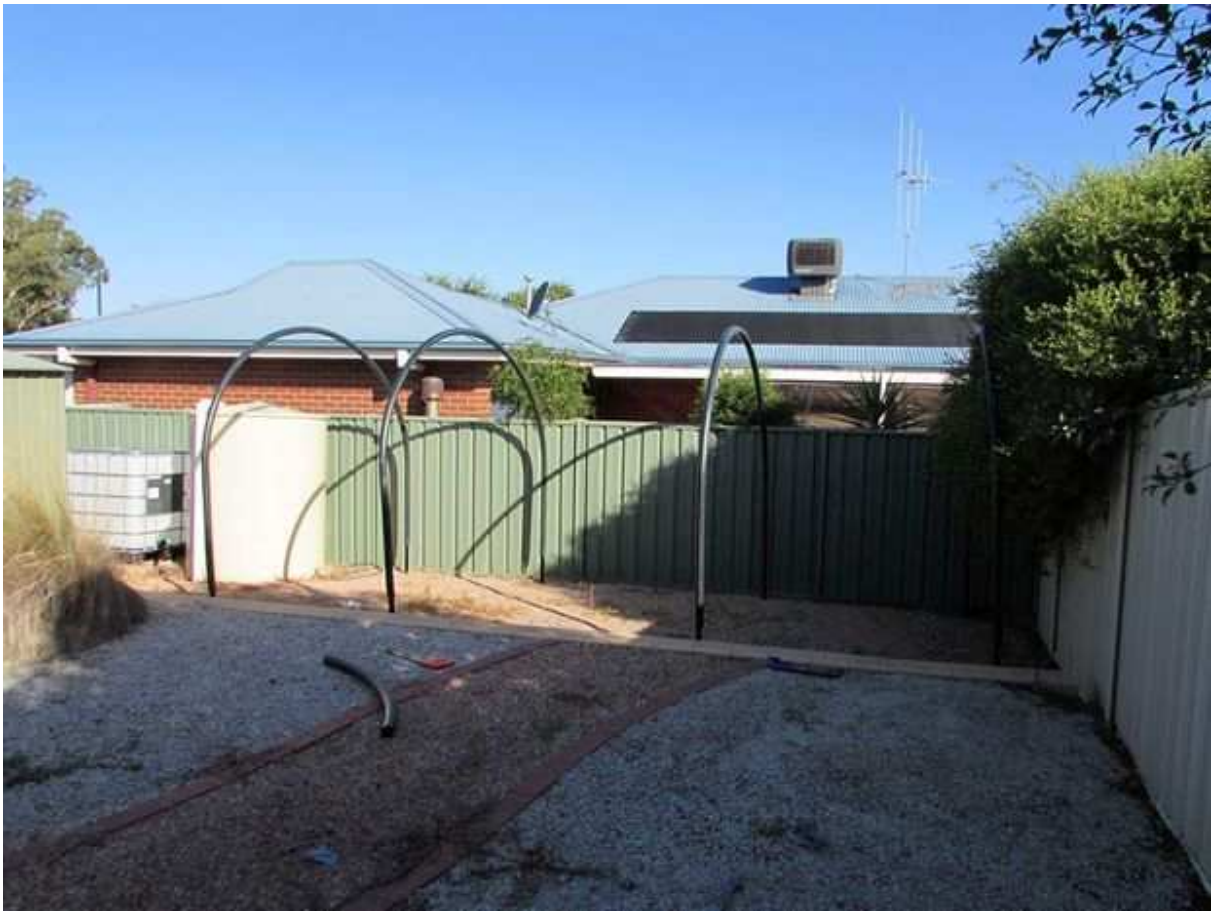
20 full jet spray bits (50 piece contractor pack at Bunnings - you'll find a use for the rest)

You'll also need Weetbix for breaky and drinking water, lots and lots of water!

Garden twine - twist ties - cable ties - hand saw and other odd bits around the house my wife always tells me to throw out.

## Step 2: Lets get these supports up!





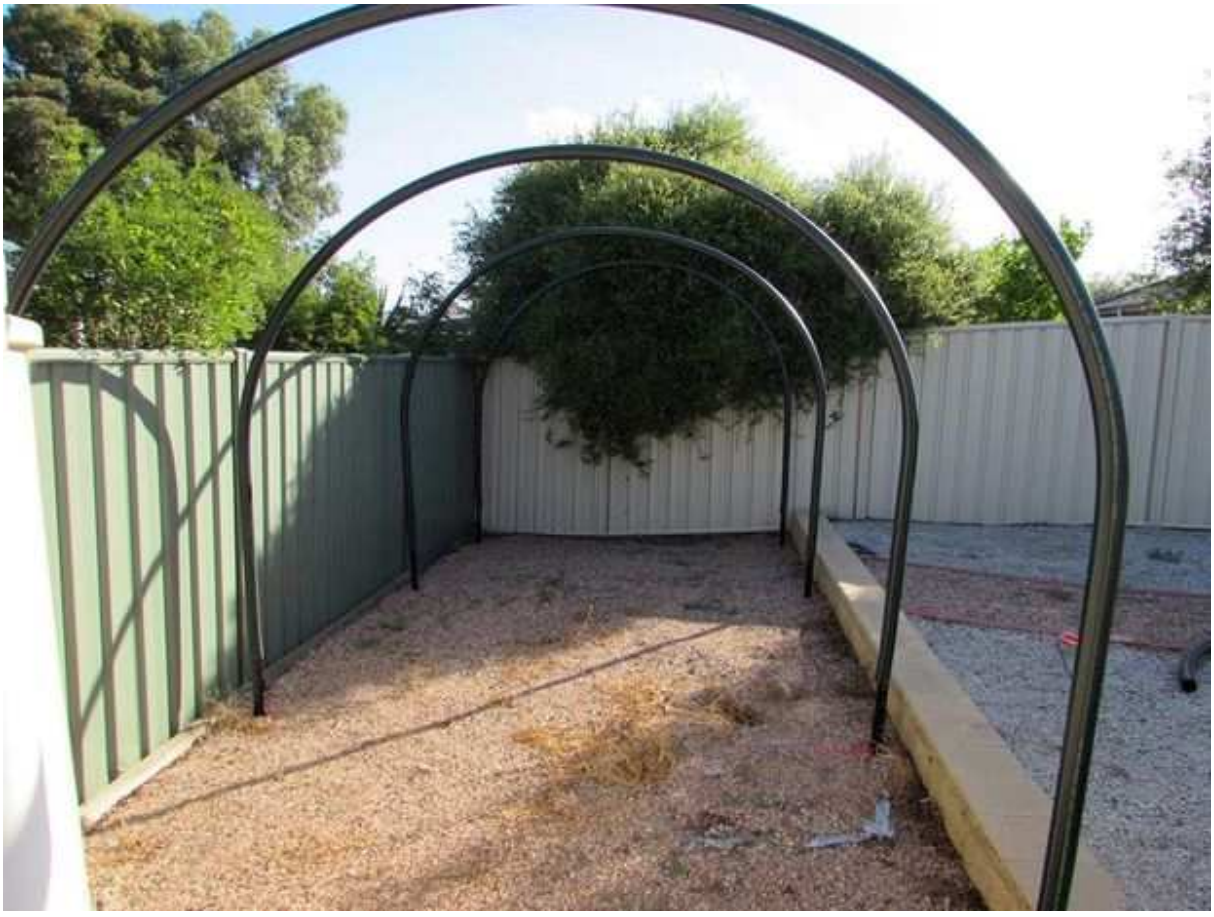
I rammed the star pickets down to 1250mm with the post rammer at equal lengths.

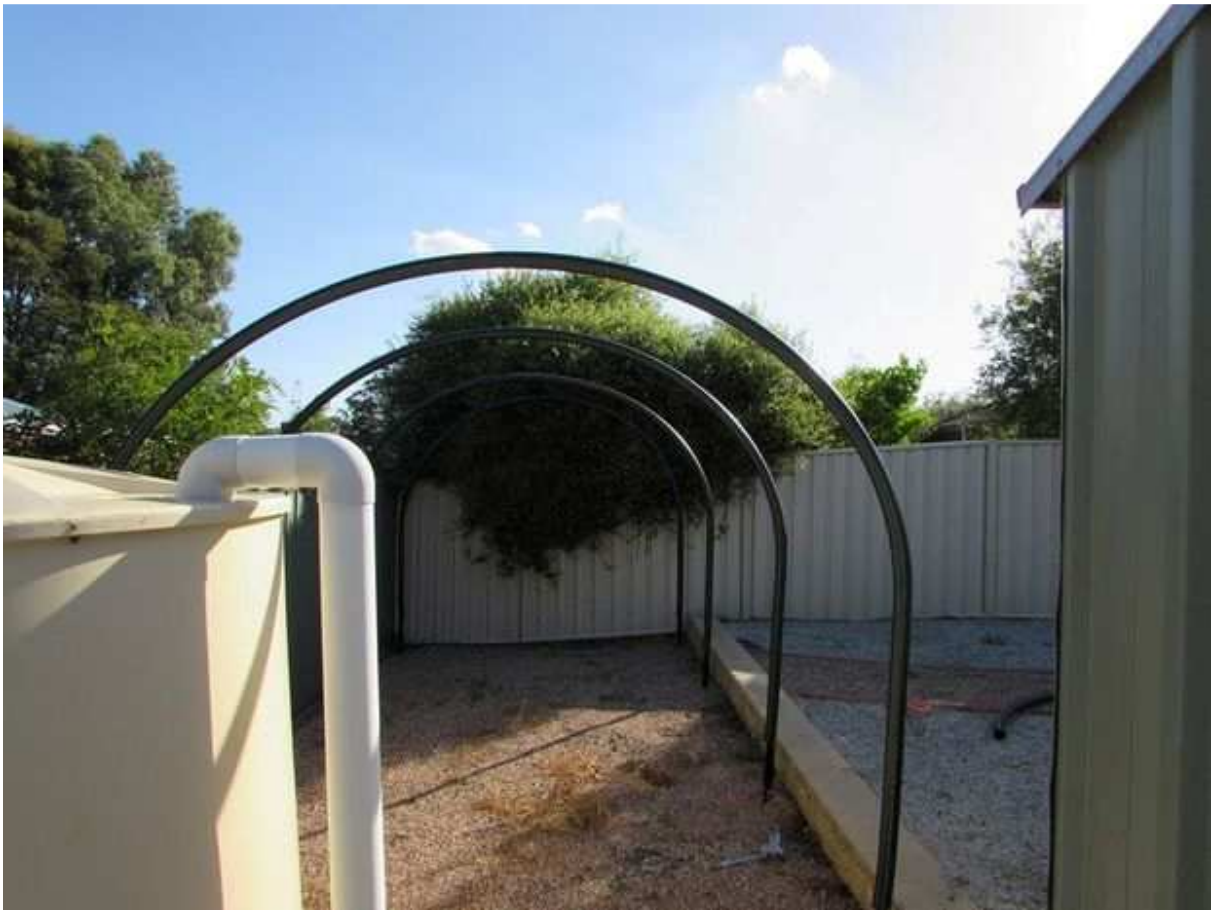
Although i'll most probably never use the rammer again it made the job a cinch!

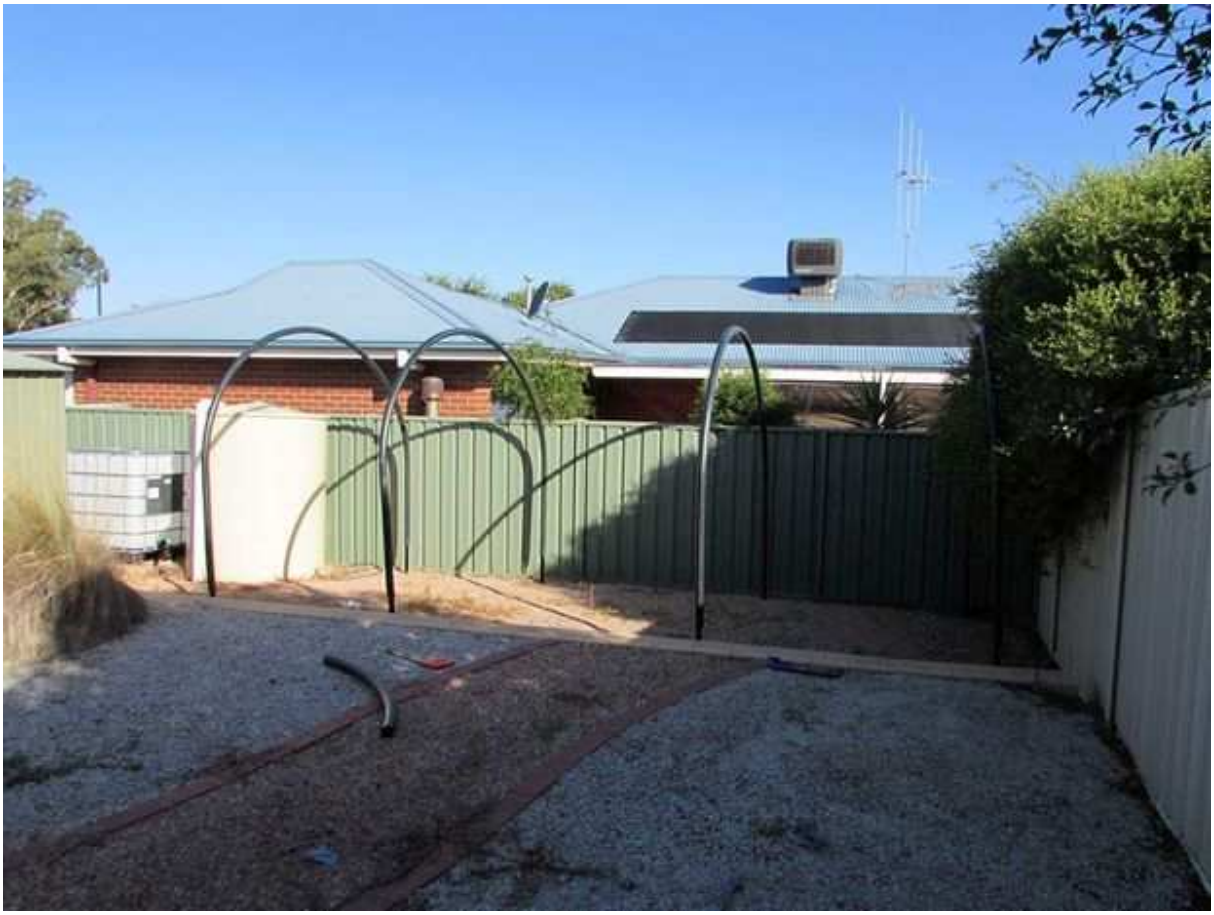
Some ended up a bit wonky however.

I'll quickly put it together so nobody notices.

## Step 3: Now we are cooking!







I cut the poly pipe into 4 and hoped I wouldn't donk my head walking in.

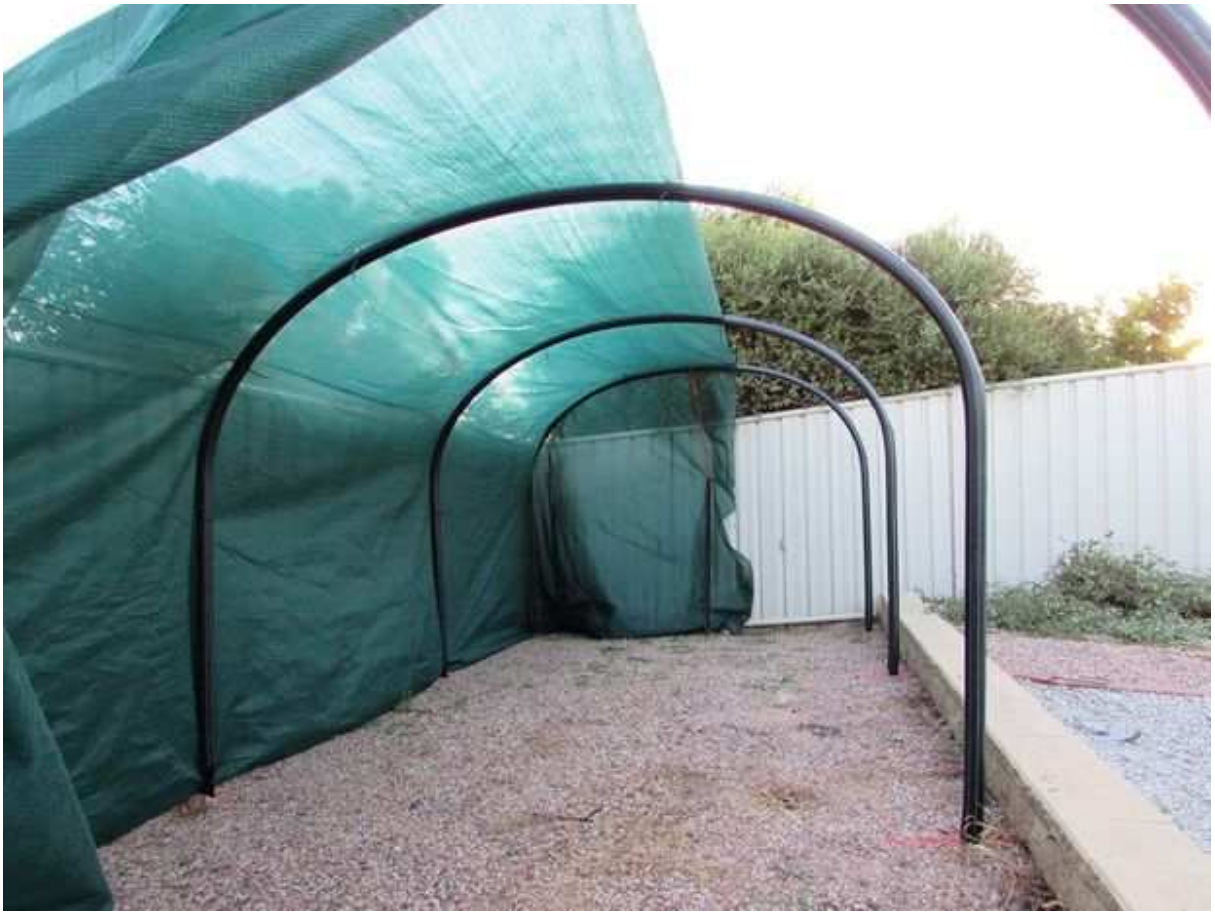
Perfect lengths!

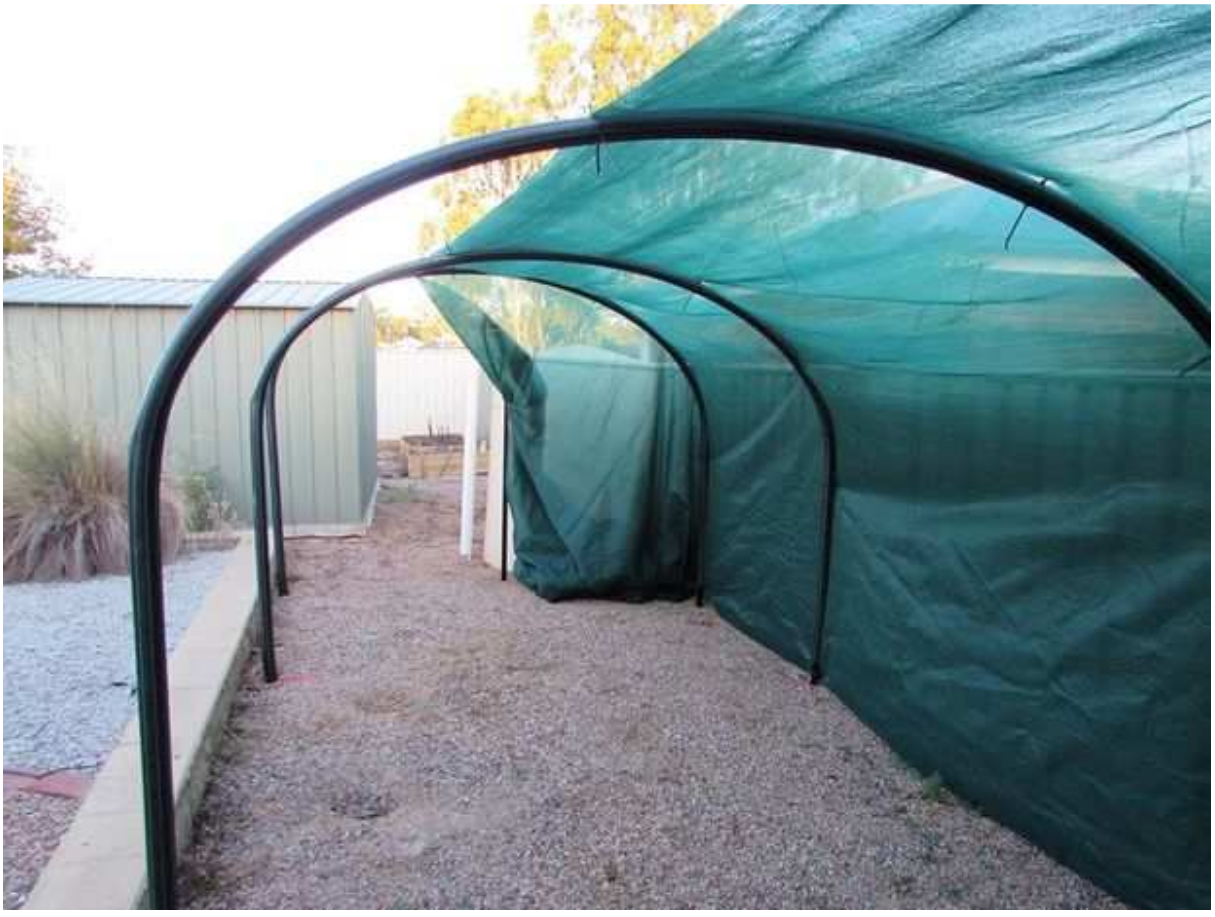
This is where a second person (or extra morning weetbix) comes in handy, slide one end of poly halfway on to one picket and half on the other.

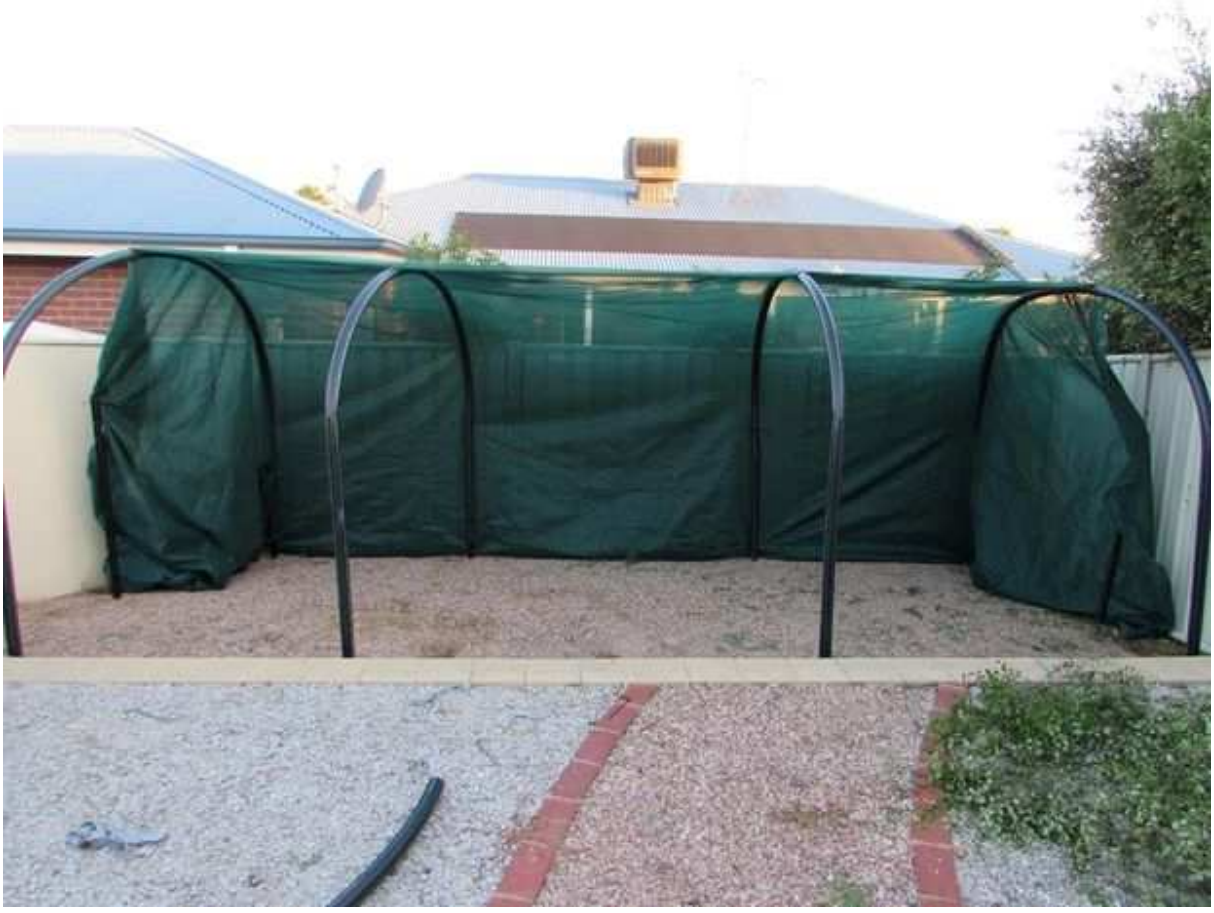
Work it down side by side until it is right to the ground or at your needed height.

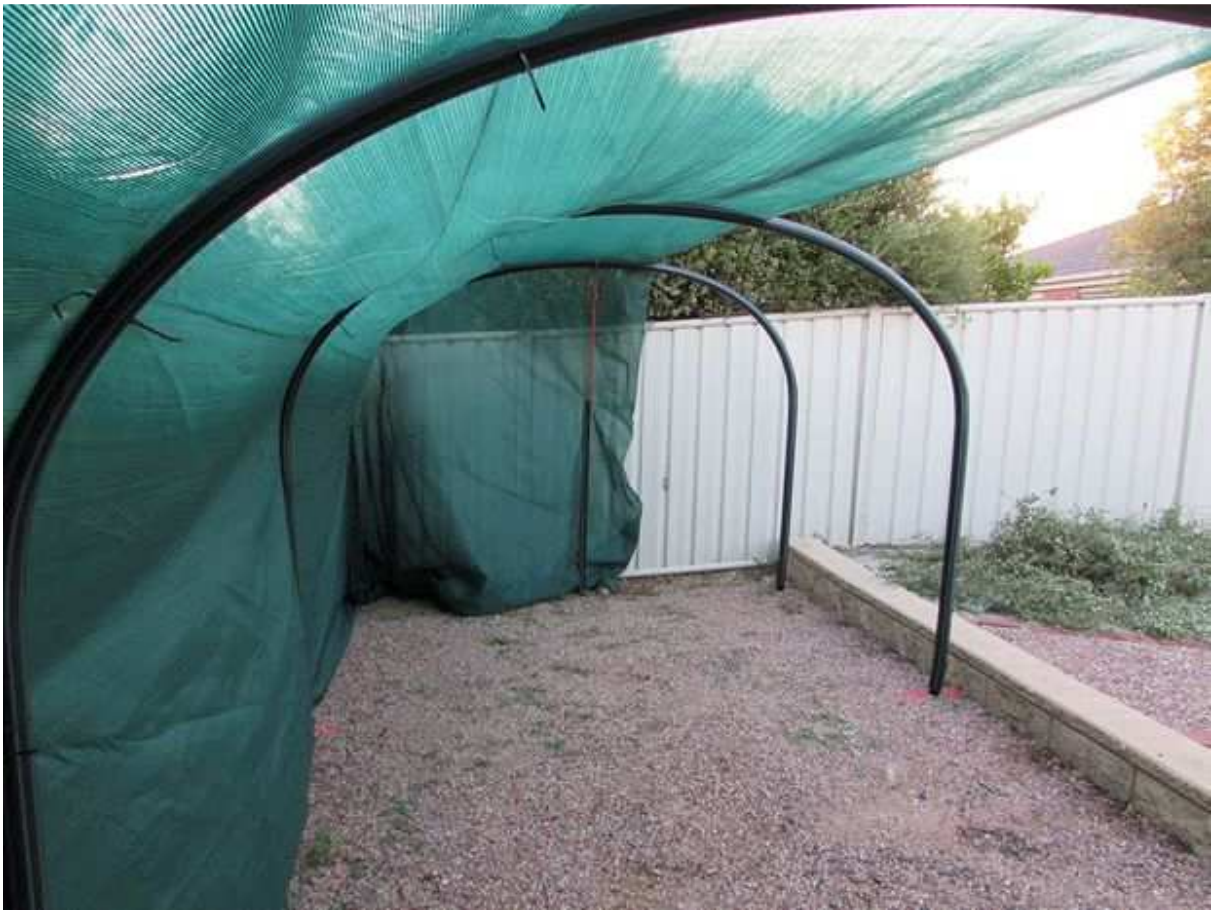
The 2 inch poly slides fantastically over the star pickets, it was made for this!

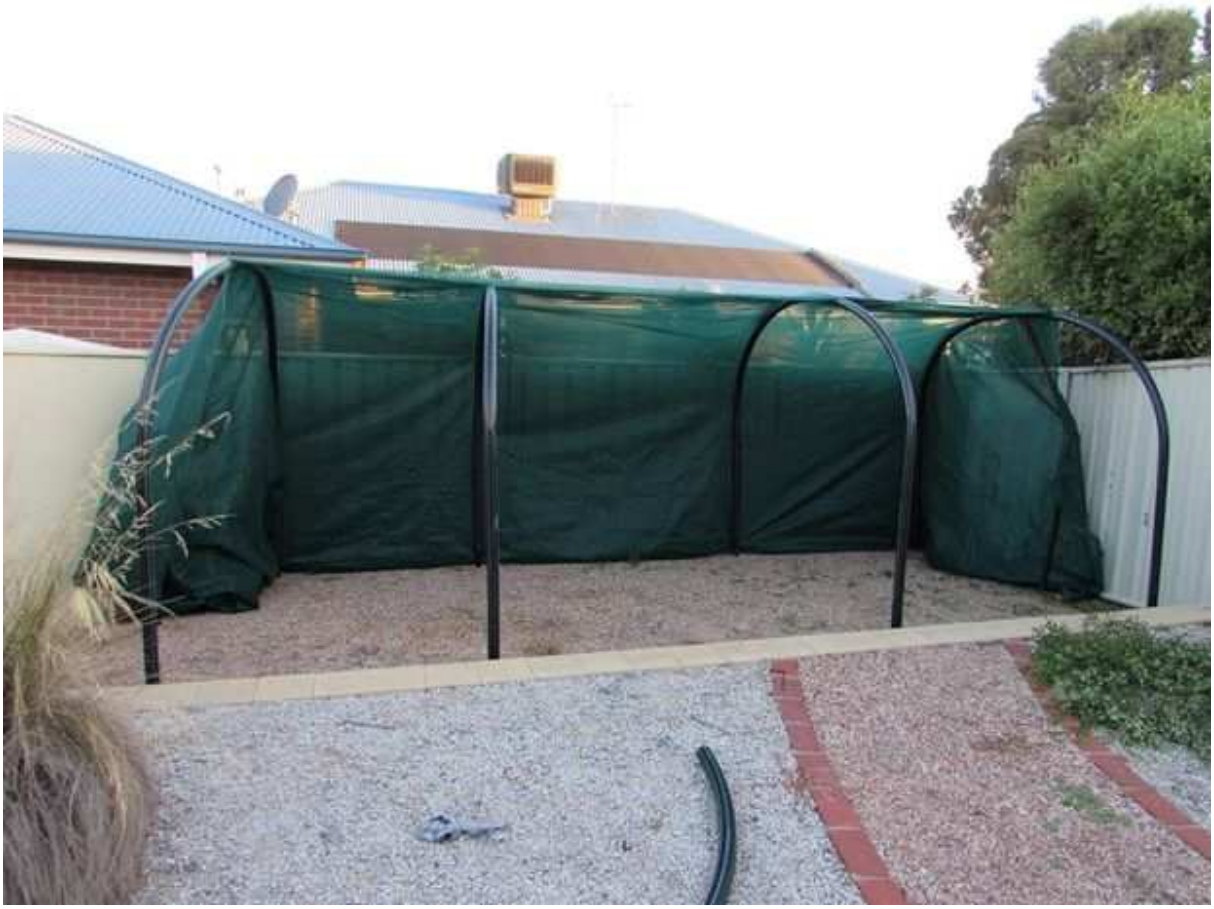
## Step 4: Test the stability - are you happy?











I've shaken and rocked it so much and I'm extremely happy with it's stability. I'm so confident it'll stand the test of time i'll be putting all my precious orchids under it!

If yours is a bit shaky, perhaps get longer star pickets.

We're based on heavy clay here so it's not an issue. You could cement the pickets in too, but it will be a lot less moveable in the future - if need be.

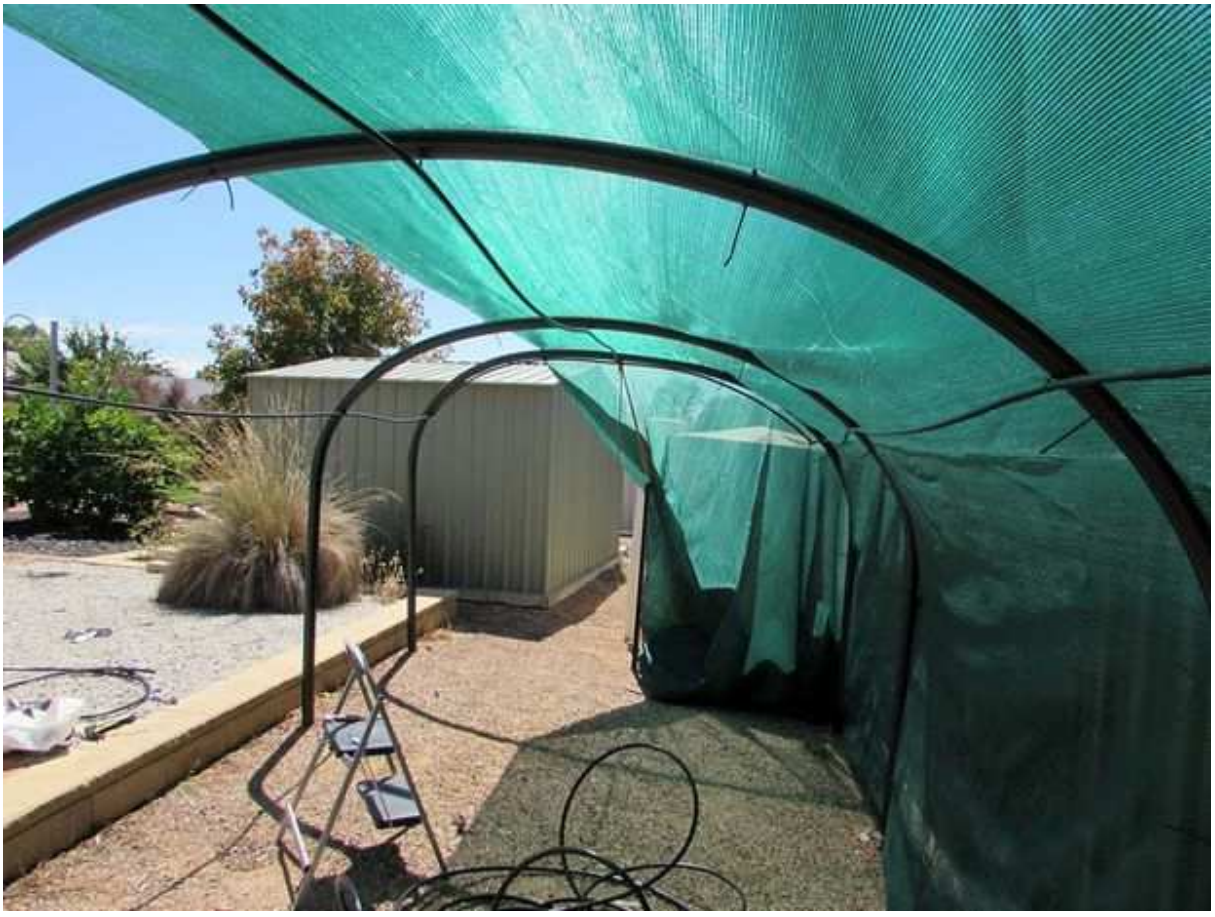
I put the shade cloth over half before it got too dark to continue. I'll cover the other half tomorrow and sew the two halves together with UV stabalised thread.

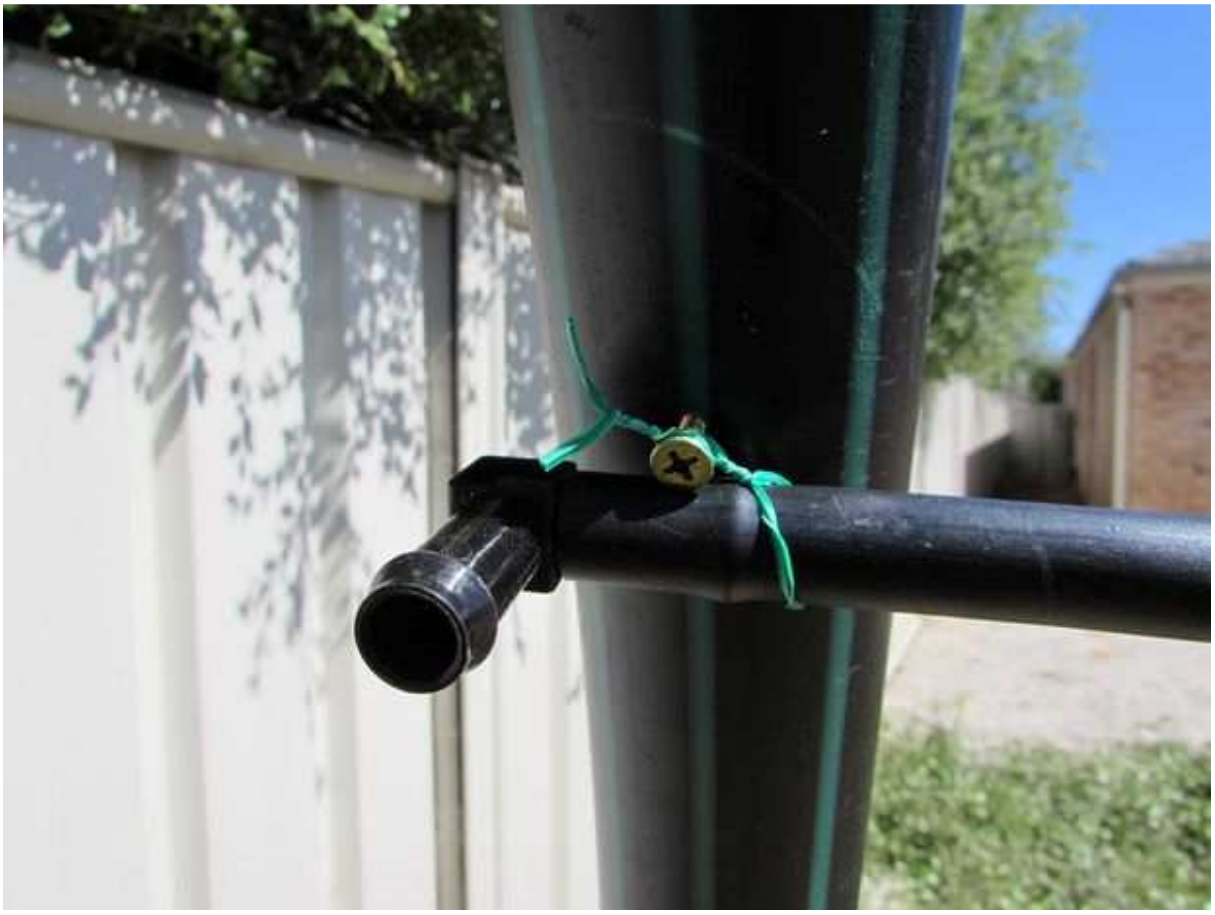
To tie the shade cloth to the poly I just used black cable ties and they worked a treat.

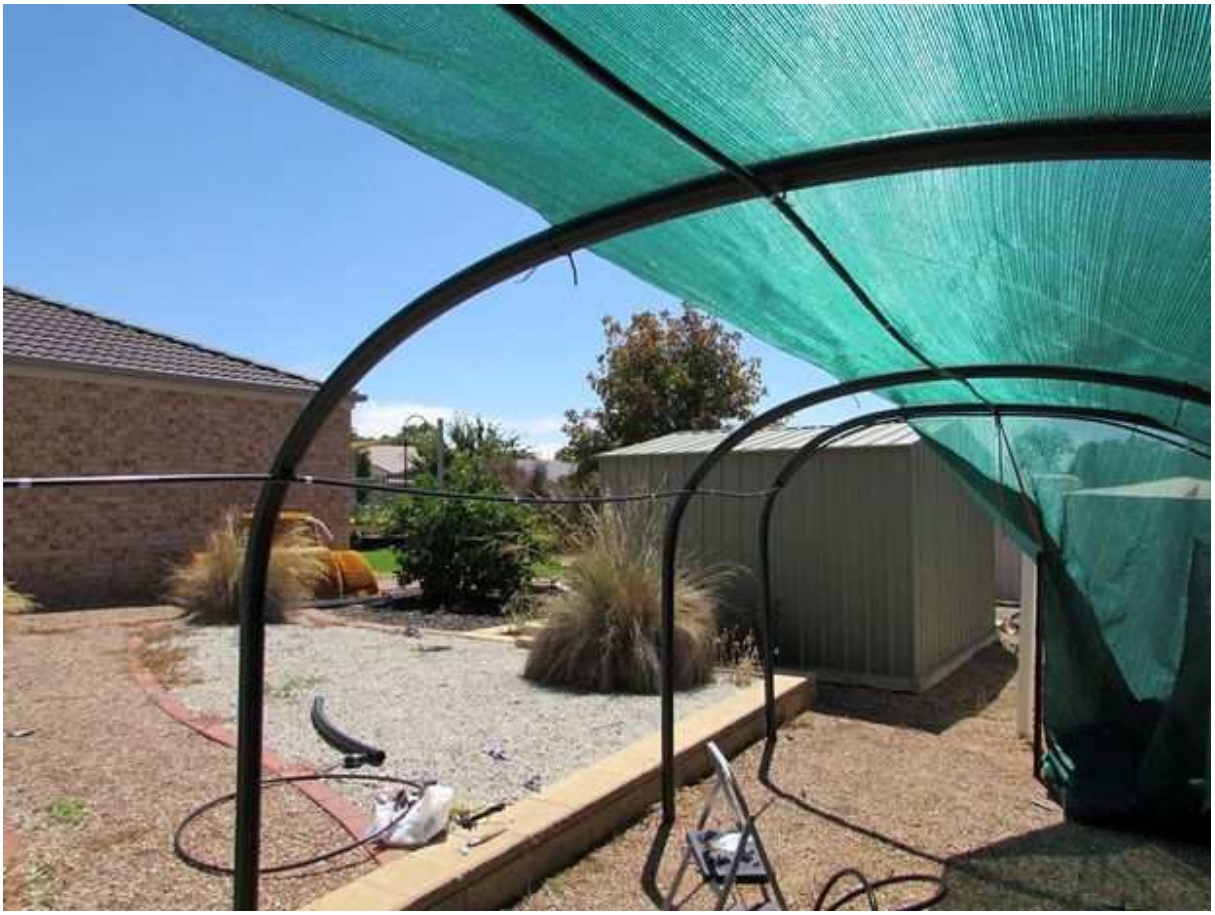
I ended up using the last two star pickets at the ends, I couldn't think of another use for them and I kinda wanted to play with the post rammer a little more!

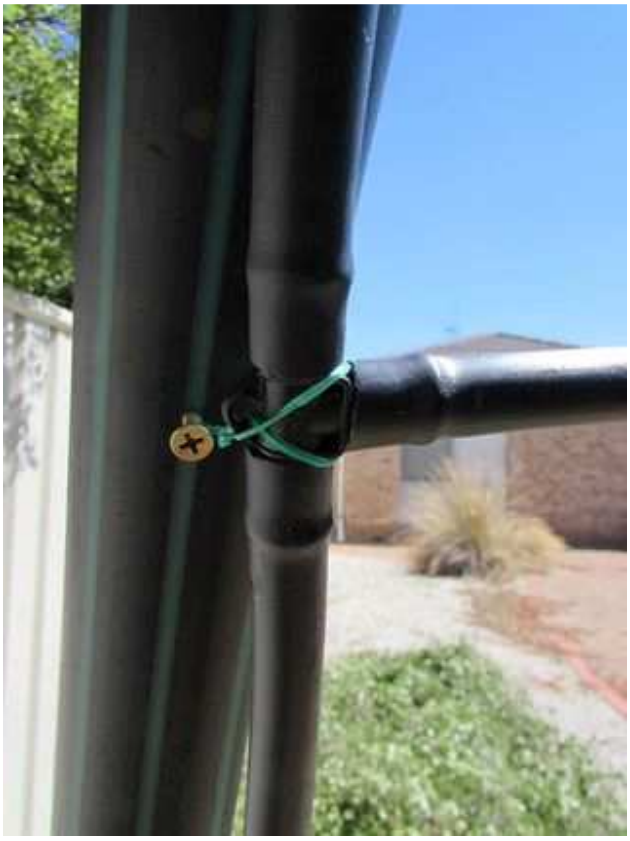
For the door I'm just going to use velcro and have a flap of the shade cloth I can just lift up as needed. I just need to figure out what will accompany the orchids in there. I'm leaning toward putting a fish tank for the aquaponic system in there which would keep it nice and cool.

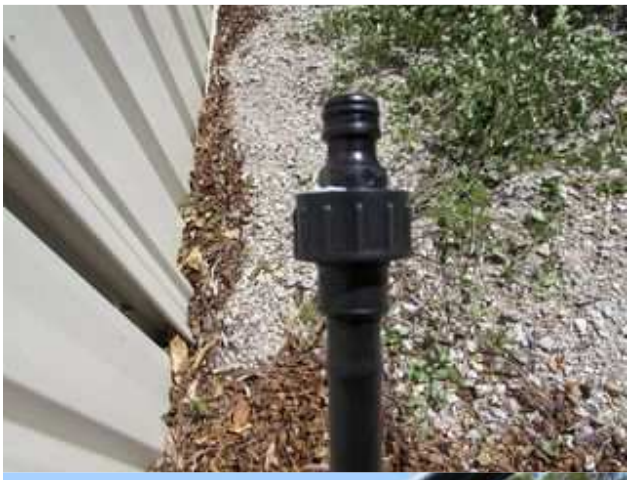
## Step 5: Let's make some rain!











Show All Items

Pic 1 - I'm adding in the watering system here before I put the other half of the cloth on, I have 3 runs of 13mm poly.

1 length right in the middle and 1 either side halfway between the fully straight pipe and the top water line.

This a simple way to fix the pipe to the uprights, 1 screw and a bit of twist and tie (Pic 2)

In the near future I may end up replacing these with cable ties, but for now they hold the water weight remarkably well.

I'll best demonstrate the system in the funky diagram below:

Funky Diagram:

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|
|
| <--- This is the 3rd 'T' connection that has the hose fitting on the end, just plug in your hose and wallah!

PIC 4 - The pipe heading down ends up as PIC 5, plug and play!

PIC 6 - A bit hard to see but i've marked out the locations with white dots of where the spray jets will be located along the runs of 13mm pipe.

The jets spray more like a cone shape really, so i've positioned them on an angle so when they are spraying neither the downward or upward facing spray will hit the shade cloth.

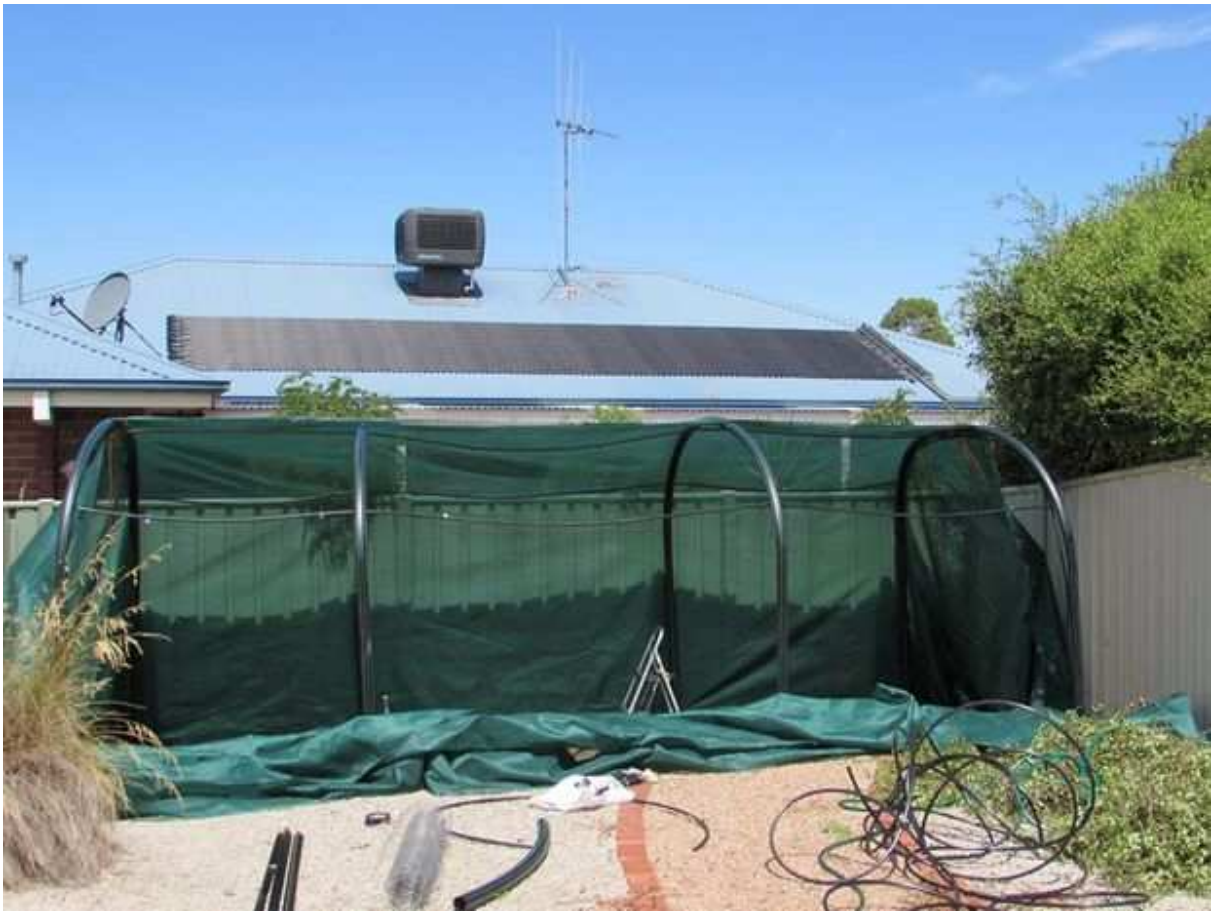
PIC 7 - This pic shows the cone shape I mentioned. I used to use micro sprayers for most of the pipework through my garden beds, but since I have gone the full spray I won't go back, although sometimes I put micro sprays between the the full circle jets, mostly because I still have so many left...

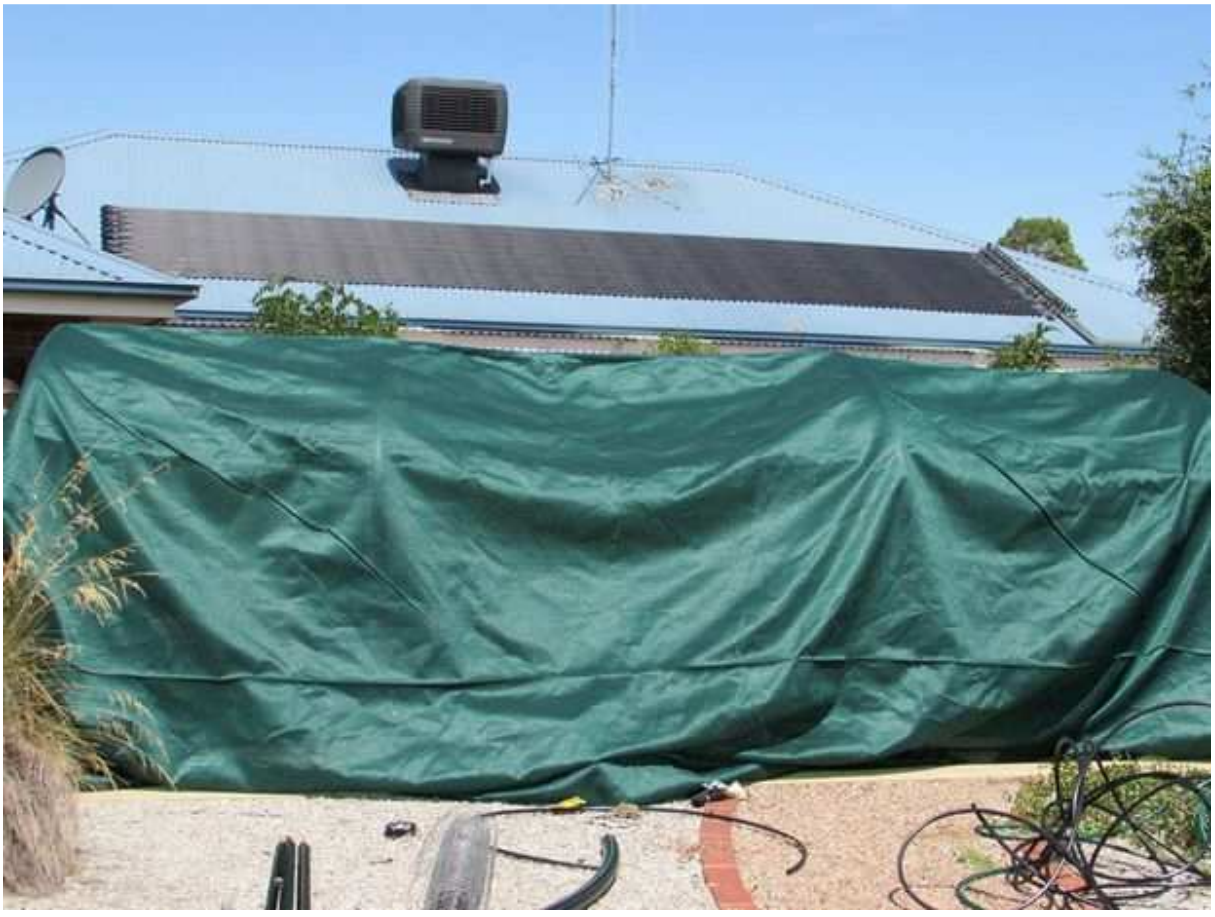
You'll also notice I don't use clamps on the ends of my fittings. I never have.

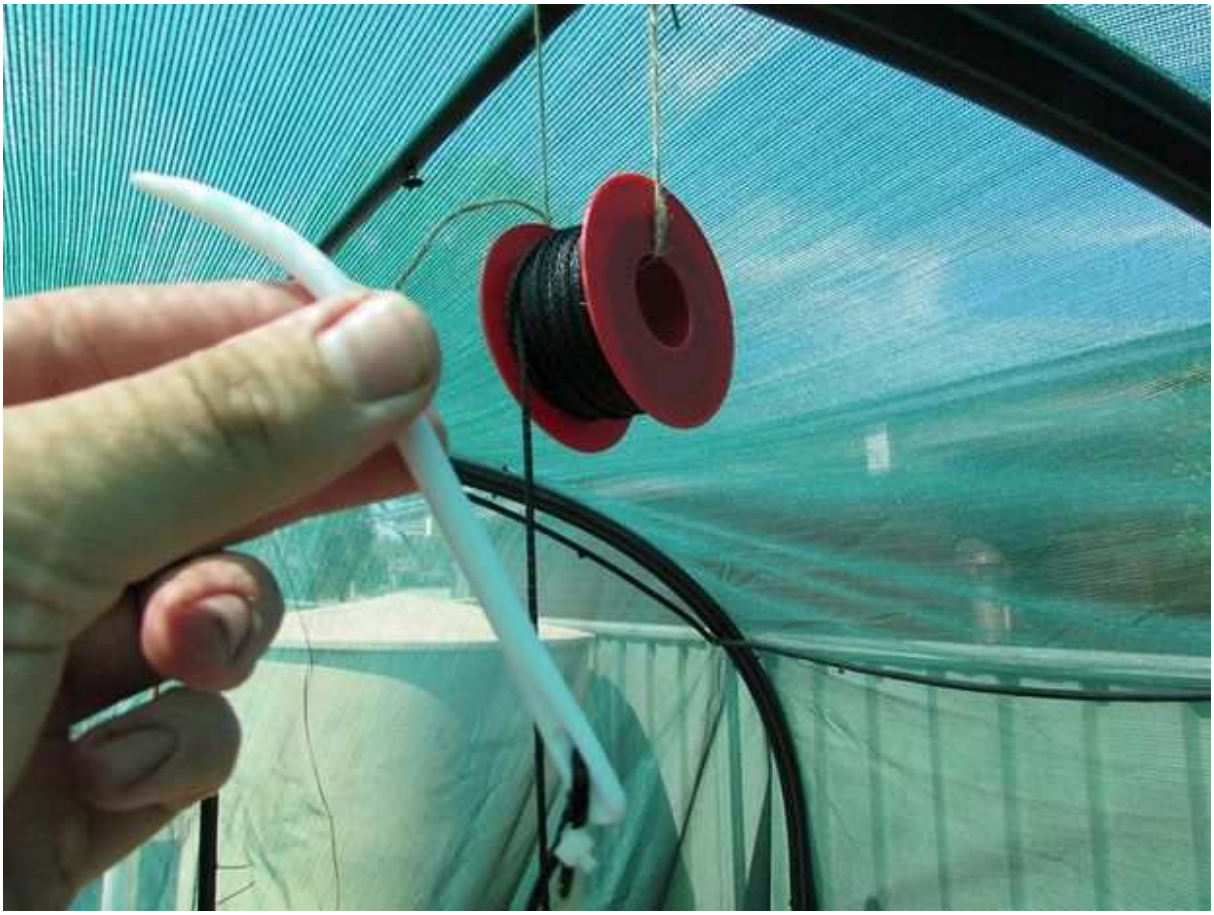
You only ever need them if the pressure entering the system is far more than what can exit out through the sprayers.

Generally you can just turn the tap down a little, or sometimes I use reducers at the start of the system, limiting the pressure that enters.

## Step 6: The BIG sew!







Lay the cloth alongside the frame, then hoist it up.

I fixed it temporarily by just using a few cable ties to hold it in place. I hung the nylon reel in the middle loosely so it was easy to pull for more string.

I started in the middle and worked my way to the back, then unreeled the reel and worked my way to the front.

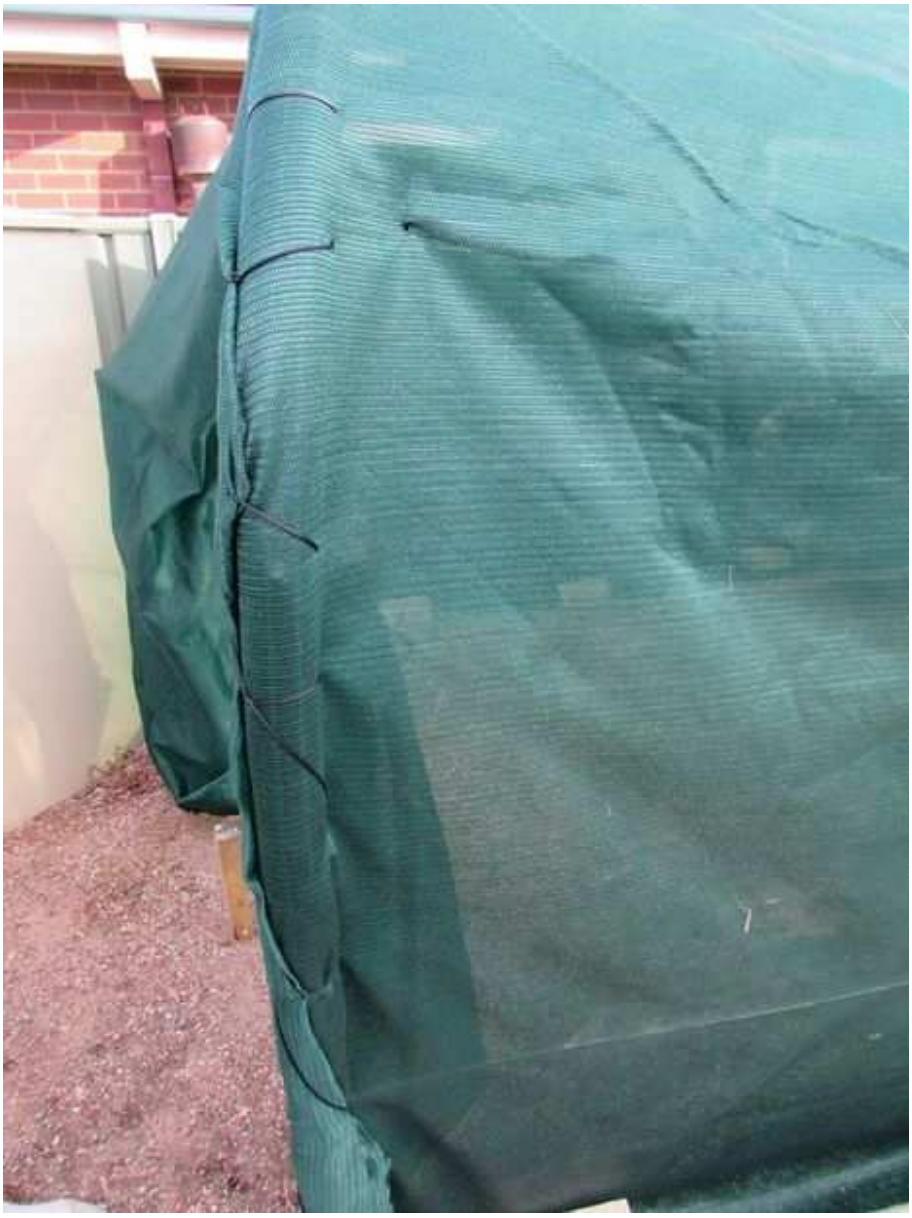
Using a pattern like this:

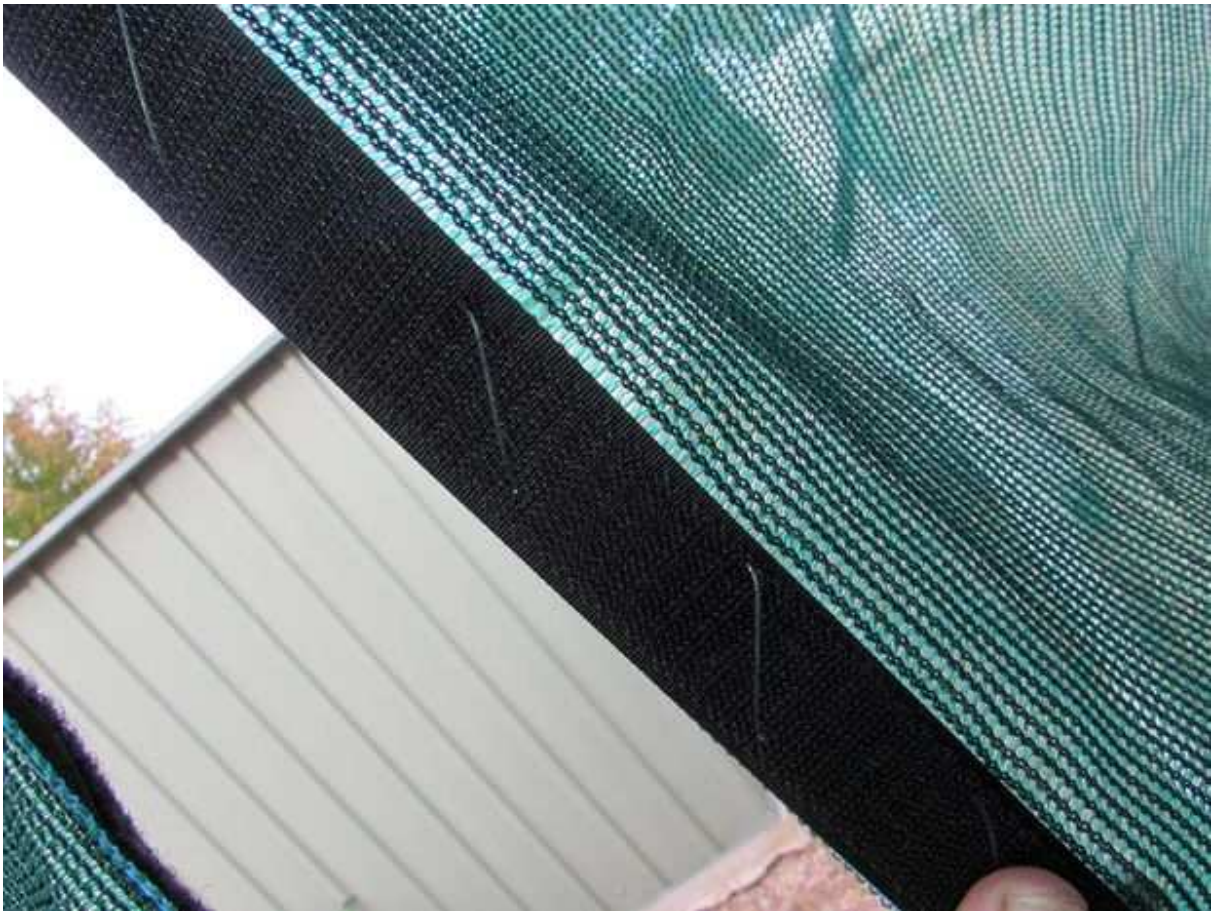
---/--\--/--\--/--\--/--\--/--\--/--\--/--\---

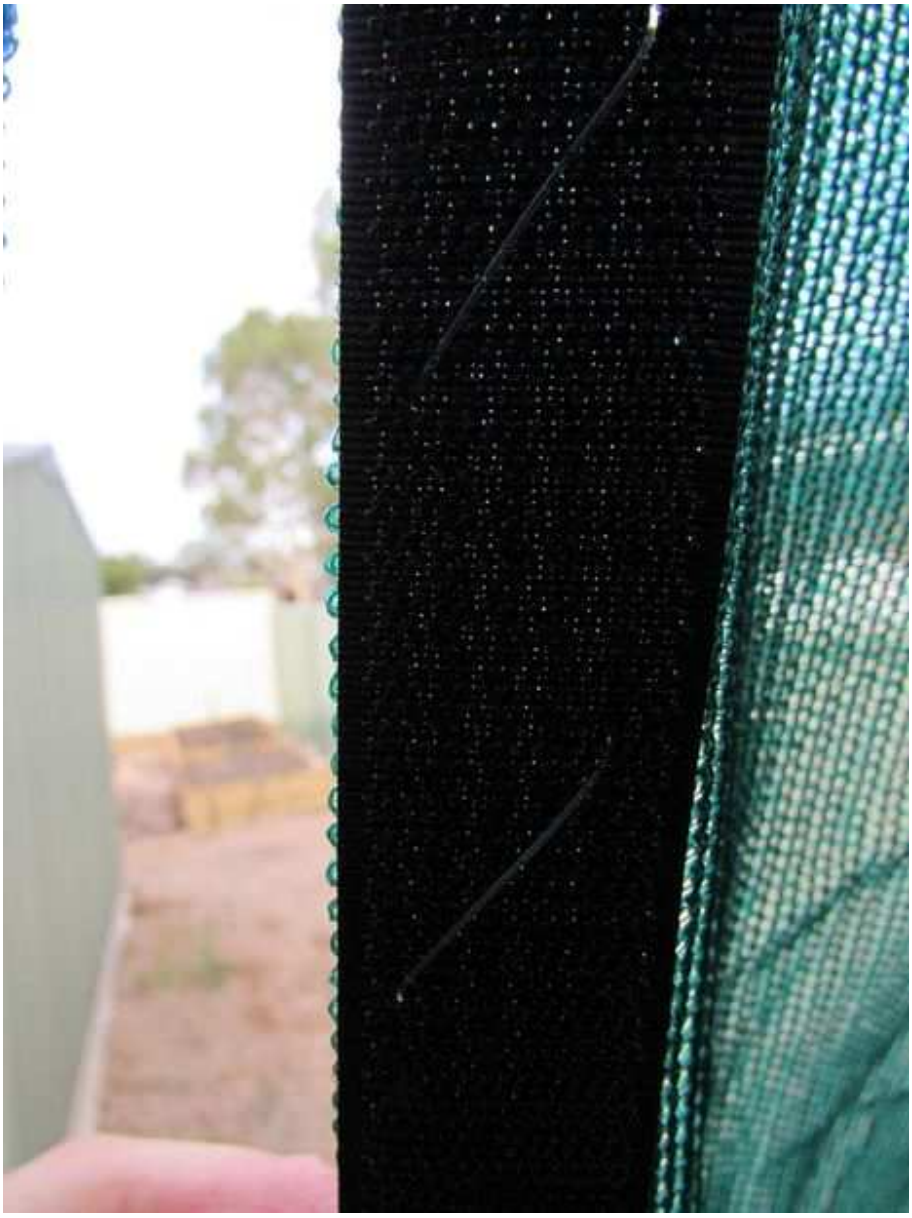
Going up through the shade cloth (one part on top of the other) across the top about 2 inches then back through to the bottom, across the bottom 2 inches and back up. Just think of waves.

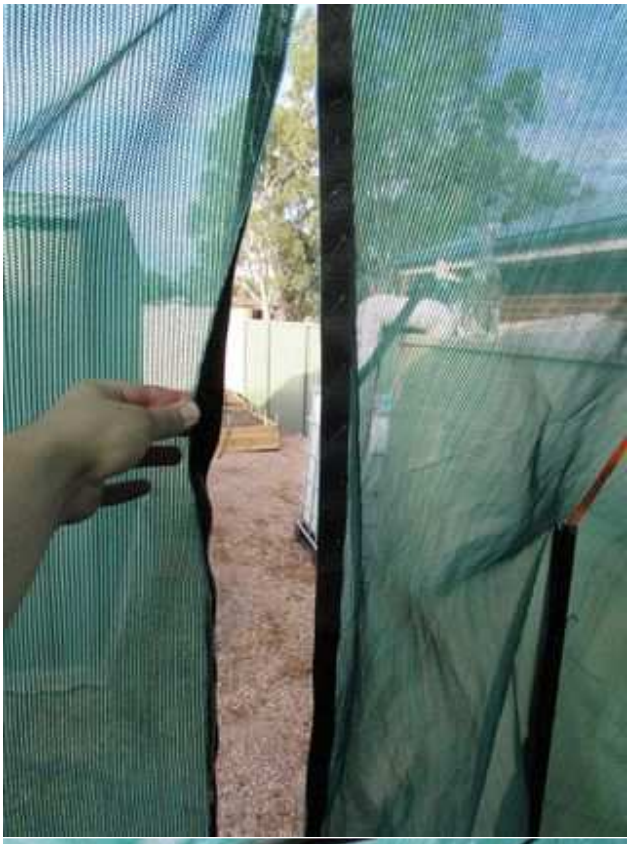
The drawing above is the best I could do!

## Step 7: Finishing it all off









Once you have sewn the top and ends together use the leftover nylon string to fix the cloth around the uprights at each end, just wrap and tie off.

PIC 2, 3 & 4 - I needlepointed fishing line and velcro on the entrance for a no fuss door.

I also used a little leftover velcro and hung it on the side so I'm able to hold back the flaps when I want a little more air in the shade house.

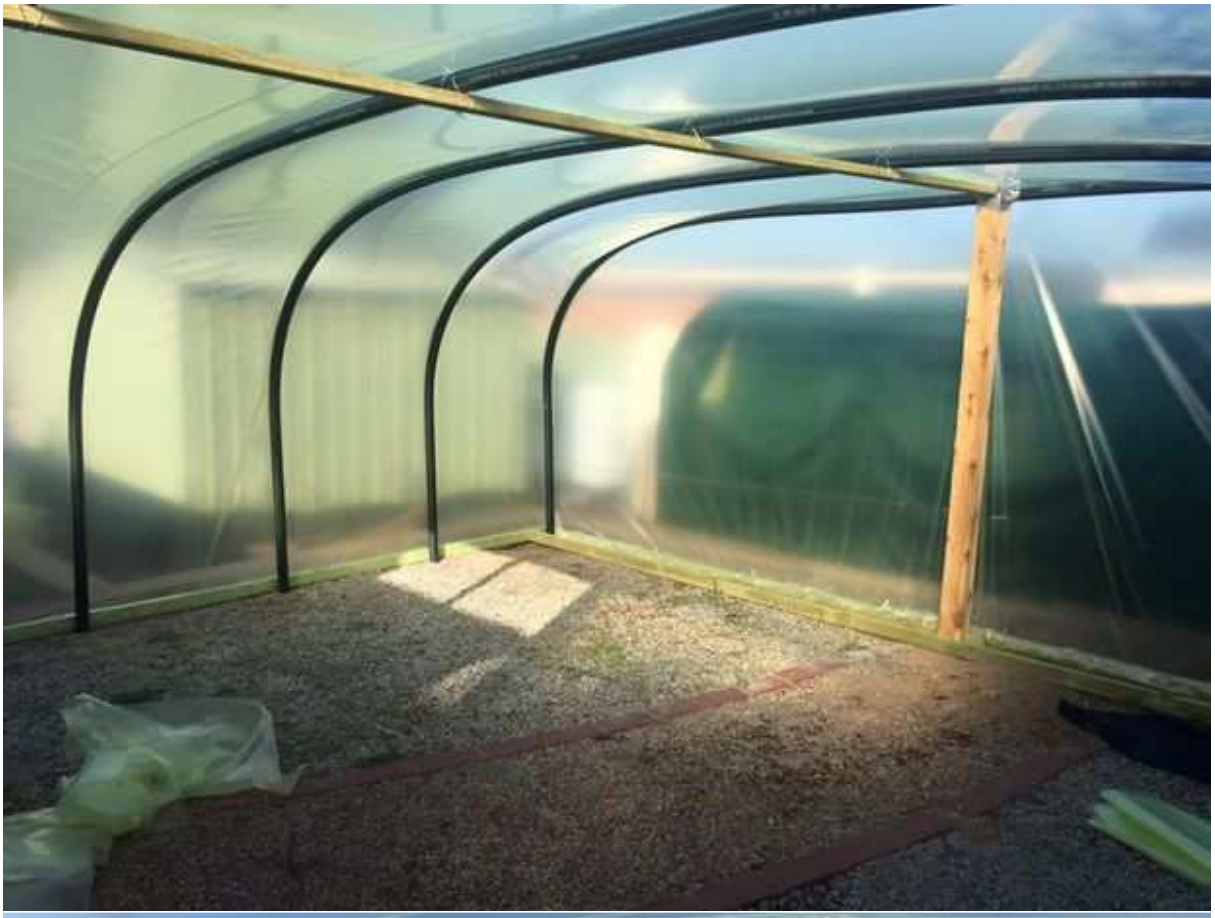
PIC 5 & 6 - Open and closed door - Note the seam line up top left of centre.

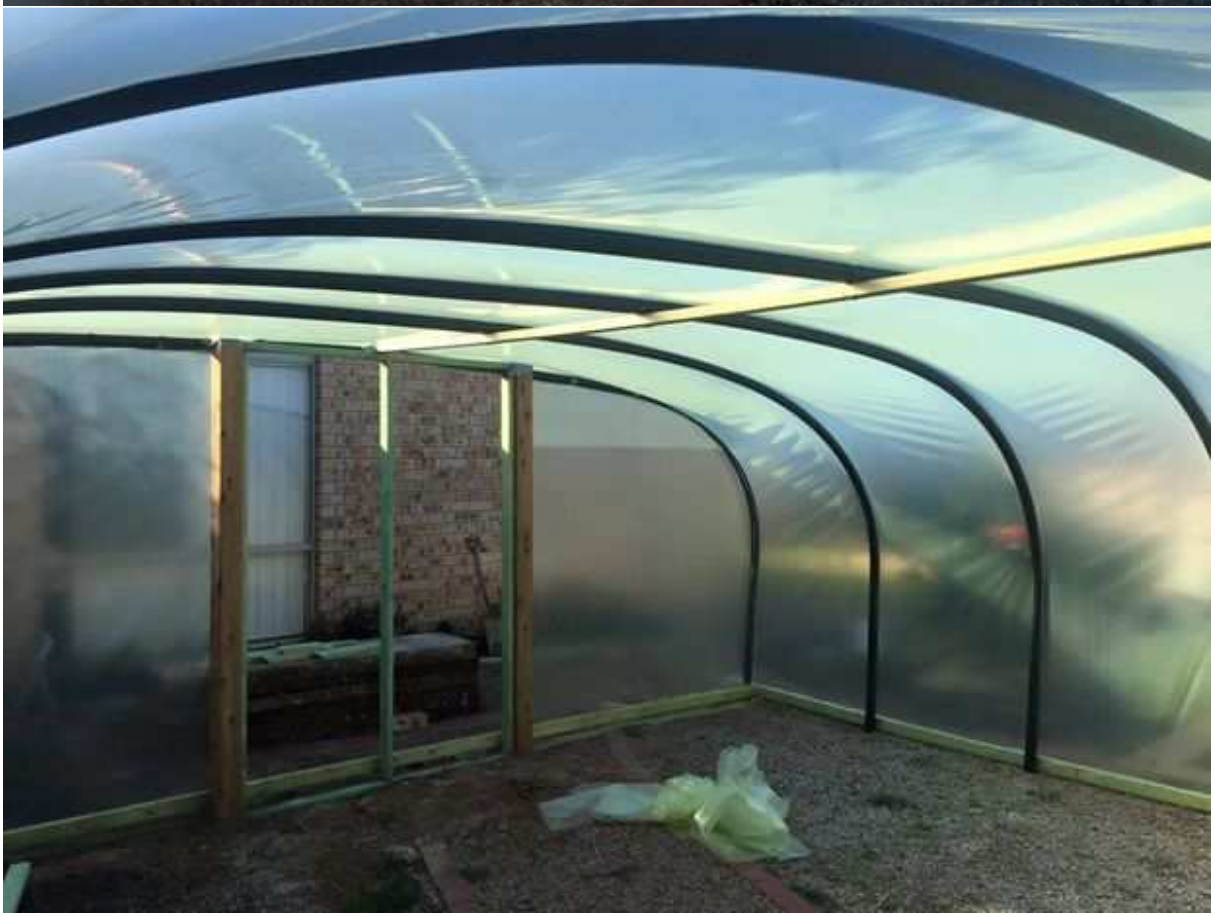
And lastly Pic 7!

This last pic show how well the sprayers do their job.
They were on for around 5 seconds fully when I took this pic - I took a well deserved walk through and came out soaked!

There is not a spot they don't get.

## Step 8: Finished!





What i've learnt:

If you can get a second set of hands to help, DO IT!

You will get the shade cloth tighter, and everything will just be easier in the end.

I wasn't about to pull my wife away from a much needed nap with our 10 week old to help out, so rest assured you're very able to complete this solo, just take your time.

I'd also put the shade cloth up before the watering system next time, it wasn't harder or anything but I got so red raw burnt in the sun and didn't really notice until now how much.

I've also added pictures of the greenhouse build I did using a almost identical system, but using cedar post ends to support my tomatoes and a treated pine frame around the base to get that film nice and tight.

Be sure to slip, slop, slap and don't forget the weetbix!!

Any improvements or ideas, please share!!

If you loved this instructable be sure to vote for me in the Outside & Gardening Contest and i'll be sure to put out some more diy's for us all!

Much love,

Ro


We have a be nice comment policy.
Please be positive and constructive.

Dawsie
a month ago

hi Ro James

Great job on the shade house and green house :-) just a quick note my next door neighbour made something like this and used cable ties too, but they keep breaking and need replacing every few months they don't like the UV much and go brittle so I would recommend that you get some more of that UV twine and go over all of the supports with the twine so that when the cable ties do die at least the shade cloth will stay put :-)

Oh I am in the outback of Queensland, right in the storm belt so we get the blooming hot days and cold nights due to the desert next to us and the mountains on the other side of us.

I have voted for you as you've done a great instructable easy to follow :-) thanks mate

Regards Angela

Ro James (author) Dawsie
a month ago

Thanks for the vote and hot tip Angela!

How does your neighbours house hold up in the weather up there?

Ro

Dawsie Ro James
a month ago

it's nice and cool during the summer the cats sleep in there during the hot days until the sprinkler turns on :-)

Other than the problem with the cable ties needing replacing all the time it's works well the plants are doing great in there :-) even when we have the bad weather at least with the shade cloth in place it keeps the high winds off the plants :-)

silversofttail
a month ago

Brilliant using the t-posts. I used rebar which is more flexible and with the wind at my location not the best. Great job!



Rocker007
a month ago

Thank. Never thought to see what fit over a "T" post, let alone poly-pipe. love this! For watering? I'm going to use a mini-hydraulic ram pump one can easily build. A very minimal drop will provide all the pressure you could possibly want to pressurize your watering tubin for a greenhouse this size or larger. THANK YOU very much!

Ro James (author) Rocker007
a month ago

Fantastic!

I can't wait to read your instructable!

:)

uzro
a month ago
你家的周围都是围墙，所以不怕大风吹。我们一般用水泥柱和铁架来做，不然大风一吹，棚就跑了。
PVC都被你们玩坏了，哈哈。

Ro James (author) uzro
a month ago

Google translate couldn't even really help me with that.
Hope you enjoyed!



svigness
a month ago

cool project easy to do it

In The Kitchen With Matt
a month ago

This is awesome! Thanks for sharing. I am in Mesa Arizona, (East Valley of the Phoenix area) It is super hot here too. :) I will definitely make something like this as soon as I have a house with some land! I live in a town home right now.

Cheese Queen
a month ago

What, exactly is a star picket? Is it a kind of fence post?

Ro James (author) Cheese Queen
a month ago

Yep, a steel fence post.

I believe they're called 'T Posts' in the States.

:)



DennisO22
a month ago

Mighty Fine Instructible.



ArchGrafiX
a month ago

Another safe way to get rid of weeds or any plant is white vinegar with some dish soap, sprayed on them.

Ro James (author) ArchGrafiX
a month ago

Awesome, cheers guys.

Im going to get on that this weekend!!

Ro James (author) ArchGrafiX
a month ago

I have read that somewhere before... I'll give it a try.

Is it pretty effective?

You wouldn't have the measurements for the vinegar and soap mix would you?

Gordyh Ro James
a month ago

The weed killer I use also uses salt in the mix. Try this link for the recipe.

http://homeguides.sfgate.com/use-vinegar-salt-wee...



Gordyh Gordyh
a month ago

You may find the interesting,it has more recipies.

http://tipnut.com/weed-killers/



ArchGrafiX Gordyh
a month ago

Yep, pretty simple weedkiller. Here's some testing of various recipes, if you wanna get more scientific

--> http://www.garden-counselor-lawn-care.com/vinegar-...

For any bugs, I only use sprayed soapy water, too. Even knocks wasps off their nests -- BOOM -- to the ground! (I only kill nests that are in my way. Wasps are beneficial.)



ArchGrafiX Ro James
a month ago
Vinegar will kill any plant, as far as I know, just by itself, Ro. The dish soap (a couple of quick squirts in a gallon of white vinegar) acts a binder for the vinegar on the plants' leaves. The mixture isn't exact, nor does it need to be. The vinegar does the killing and its small accomplice is the soap binder. I think this will work for you. You can watch this guy fumble around if you want. --> https://www.youtube.com/watch?v=xwMqhtXq4y8 . Good luck, my Down-Under friend.

Eirinn
a month ago

Very nice! If I wasn't so kean on hydroponics I would make this in a heartbeat (if I had the room).

bsmith5
a month ago

I voted because, well, streuth - she's a beauwdy-mate!

Ro James (author) bsmith5
a month ago

Thanks Mate!

If you're not an Aussie, with that slang you're halfway there!

Now where did I put my dog's eye and dead horse?

FlyGuyBriGuy87
a month ago

Great job! What spacing did you use for the pipe in your greenhouse?

Ro James (author) FlyGuyBriGuy87
a month ago

Thanks Mate!

Roughly 1300 mm (4.2 feet for the Americans).


PCfreak
a month ago
so have u had any problems with weeds after you put the greenhouse/shadehouse up?

And i noticed the Bulk IBC container in Step 2, what is that being used for,(i was thinking it was for rain water) and have u considered incorporating that into the sprinkler system design?

Ro James (author) PCfreak
a month ago

I had problems with weeds initially, but soon after I finished these houses I laid thick builders plastic on the floors.

Boom! Problem solved.

Stay away from the chemicals where you can.

I've just cut the IBC in half and have filled it with this years tulip bulbs.
After the bulb season I'll muck around with it and turn it into another wicking bed.

The cream coloured tank to the right of the IBC is my water tank that catches the rain water from the roof of my house.

I initially connected an old spa pump to the water tank and had it spraying through the sprinkler system, but the pressure was less than fantastic, it was more of a dribble.

It would work if I installed less sprayers perhaps.

When I searched around for a pump with the power to give decent pressure to the sprinkler system the cost was prohibitive.

So I stuck with the tap water which has great pressure in our area.

I'm just using the spa pump and tank water for my goldfish and wicking beds at the moment.

I have been researching more and more on aquaponics, and I'm very keen to get in to it but i'll have to knock a few projects off of my list beforehand.

Cheers for the love!



C3idotnet
a month ago
hi and thx! im just curious though, since it gets pretty stormy here in fl. why not put a horiz length of pvc down the center, end to end for both stability, water, and tie off usage? I dont know how bad the storms are in your area since I dont live down under ::)) btw, not being picky at all, love the work u did. thx again. mike

Ro James (author) C3idotnet
a month ago

The storms aren't too bad around here, its the crazy heat you've got to watch for.

In the last picture with the greenhouse, I put a 6 metre length of treated pine along the top and secured the poly to it with a bolt, washers and nut.

Then I wrapped it at each point with fencing wire.

Wasn't really needed in the smaller shade house because the pickets were so close together, but if you plan on doing the larger 6 x 6 house, I couldn't recommend it highly enough.

That's were the cedar posts came in handy as well as being tomato supports they really make the whole thing rock solid.

But I just googled Florida and you have weather similar to Far north Queensland, with the cyclones and storms and all, and if I were building it up there I'd be bracing the hell out of it!

Or perhaps build a Geodesic greenhouse? There are a lot of great instructables on here, in an area like yours that would be a solid bet.

Thanks for the love!