

WICKING BEDS

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The beds are built before the ends of the shade house are closed in. They are about 85 cm wide. The path between them has to be wide enough for a wheelbarrow and easy walking.



Cross section of a wicking bed



Plastic liner with at the top: straw, pegs, wire, bottom: drain pipe, soil, bagasse, minerals

MATERIALS

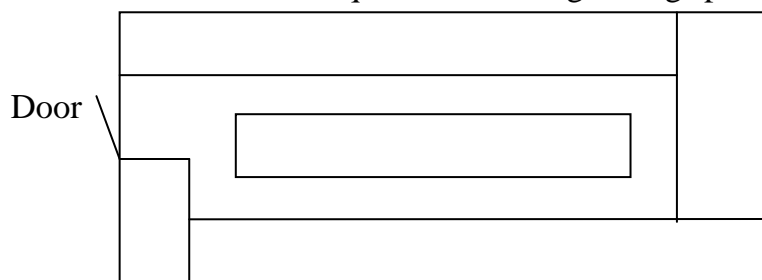
24m plastic liner (concrete underlay,
AS 2870 4m wide x 0.2mm x 50 m)
3 square bales of hay for lining the beds
30 wooden stakes or pegs 600 * 50 * 25 mm
80m wire netting (one roll, vermin proof)
11m agric drain pipe cut lengthwise

6 uprights 0.60m long, cut from 100mm PVC
(not on the photo),
7m³ soil mix
1 bag of Extra-phos & potash
or other organic mineral supplement
bagasse, straw or hay

In soft soil the weight of the soil has pushed some pegs outwards leaving not enough walking space. Longer pegs may be needed. In areas with severe white-ant problems, steel rods have been used instead of wooden pegs and galvanised iron sheets instead of wire netting and straw.

LAY-OUT

The lay-out we use has about 16 square meters of growing space.



BENEFITS/COSTS

The total cost of materials for the shade-house and beds is about \$800 - \$1000, so our cost per square meter of growing area is about \$50-\$65. Having built a few, I need about three days to build a system. I have grown nine heads of lettuce on a square meter in six to eight weeks. This was followed by 3-5 kg beans from the same area in the following six weeks. That left 38 weeks for other crops. One shade-house has provided most of my vegetables for 20 months now with minimal work. It has well and truly repaid itself.

BUILDING THE BEDS



(The photos are from our first shade-house that needed central support.) Hammer the pegs into the ground in the pattern you want, about 60 to 75 cm apart. Run the wire inside of the pegs and nail it to their tops. Make sure the wire is in the shape of an L so that the weight of the soil will keep it in place. Fold down sharp bits in the wire to prevent leaks.

Cut the plastic to fit the bed and spread it on top of the wire. Make sure the plastic is at least 40 cm wider and longer than the bed, so there is enough to fold it up.

Cut the agricultural-drain pipe in half and place it along the length of the bed. Cut one end to 45 degrees. It forms a channel so the water can spread quickly along the length of the bed. Whole pipes do not work as well because the slots tend to get clogged up with roots. Place the upright at one end of the ag-pipe, with the two 45 degree cuts face-to-face.



Cover the pipe and the bottom of the bed with bagasse, hay or straw. It allows the water to move sideways. After it decomposes or has been eaten by the worms, it leaves a permeable layer of soil and composted material. Before filling the bed, we sprinkle organic minerals on top of the bagasse, using the recommended rates for vegetables. Worms love it and incorporate it into their casts, ideal for plants to pick it up.

Place the straw along the sides and fill up the beds with your mixture of soil and whatever compost, well-rotted manure or other biology-enriching material you have available. We use worm casts – we are fortunate to live near a large worm farm. We sprinkle some more organic minerals on the top and work that into the soil. Cover the surface with suitable mulch. We initially used bagasse, but now use lawn-clippings. Worms love them, so we found a second use for our lawn.

Finish the shade-house and fill the beds. Control the water levels by pushing the plastic down to the desired level at the end opposite to the upright. We initially push it down to about 15 cm. and later adjust it to suit special needs.

Building sequence in detail

1. Measure the first bed; we suggest making it 0.85 m wide or less for shorter arms.
2. Level the bed!! This is critical. The bed must be level both ways to prevent water-logging at a low side.
3. Hammer in stakes at 60 - 75 cm apart, leaving them 40-45 cm above ground. Use longer stakes in soft soil or if the area has been filled rather than cut.
4. Run a length of wire-netting on the inside around the bed in an L-shape. with up to 45 cm above base level.
5. Cut plastic liner at least 1.25 cm wide, and 40 cm longer than then the length of the bed.
6. Cut a length of Ag drain pipe in half, and cut one half to the same length as the length of the bed.
7. Cut one end to 45 degrees, and place the cut pipe on the plastic liner, face down to form a channel.
8. Cut a length of PVC to 60 cm, cut the bottom to 45 degrees, place the cut end face-to-face against the cut end of the Ag-pipe and wire the fill-pipe to the wire netting.
9. Cover the bed with bagasse, hay or straw to 5 cm depth.
10. Spread an organic mineral supplement over the bagasse, hay or straw. A one-litre container holds enough for a 5 m bed.
11. Do the other beds in the same way.
12. Fill the beds up to the top with your soil/compost/manure/wormcast mix. We use a mixture of 70% soil and 30% wormcast; make sure the mix is even.
13. Spread more organic mineral supplement over the surface and rake it in.
14. Cover the surface with mulch or grass clippings.

Finish the Shade-house.

15. Once the shade-house is finished, fill the beds with water.
16. Press the plastic down to about 15 cm above ground level in each bed at the opposite side of the fill-pipe and wait till the water flows out of that low point. That is the safety valve to stop flooding the soil.
17. Plant the seedlings and water these from the surface for a few days.
18. Once the soil is moist, put a few handfuls of worms into each bed and the job is done.
19. Once the seedlings are established, only water through the fill pipe, keep the surface dry.
20. Water only when you cannot see free water at the bottom of the fill-pipe. This can take a few weeks in winter with small seedlings, or five days in summer with a full crop.

HAPPY GROWING AND EAT WELL!!