



VEGETABLE SEEDLINGS PRODUCED IN TUNNELS

Healthier plants, guaranteed



Vegetable seedlings produced in tunnels

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Doña Esthela del Carmen Estrada, of the Los Filos community, municipality of Villa El Carmen (Nicaragua), is a community promoter in charge of providing vegetable seedlings produced in tunnels to a group of 35 farmers in her community. She tells us:

“I’ve been working with the tunnel for four years now. Before, when nobody knew about tunnel planting, the plants would grow really badly in the ground and pests like whiteflies would affect them a lot. The plants would wilt and get all yellowy.

But the pests can’t get in the tunnel because the micromesh keeps them out and protects from the wind. The little plants grow greener and quicker in the tunnel where they spend 22 to 28 days. Then the farmers come to take them and plant them in raised beds.

When using plastic trays, I put one seed in each seed hopper. You can’t put more than one because it stunts the growth. The advantage is that the little plant comes out with soil and everything, with its roots whole.”



Purpose of producing vegetable seedlings in tunnels

Traditionally, vegetable farmers plant seedbeds in the open, exposing the seeds and later the seedlings to many pests and diseases. Besides, when the seedlings are uprooted from a nursery, they come out with naked, incomplete roots, which brings about stress during transplant and potential diseases. Melon, watermelon, cucumber and maize are crops that really suffer transplant stress.

In the tunnel you can:

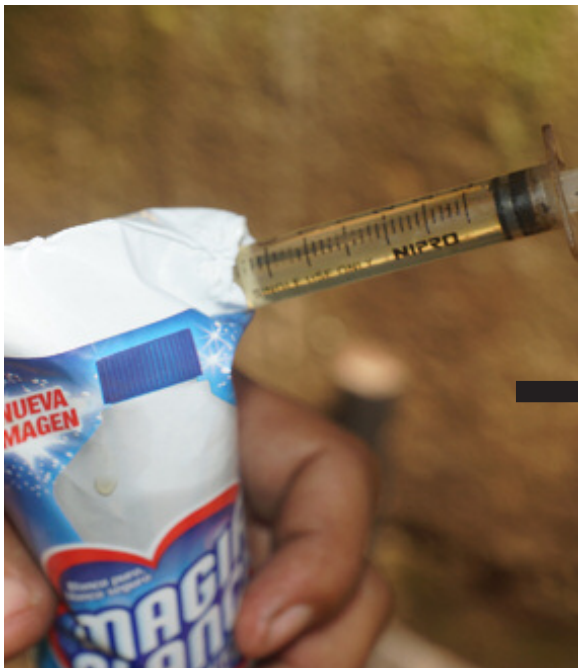
- Guarantee healthy, high-quality plants, free of virus infection or insect or wind damage, as these cannot penetrate the micromesh and reach the interior of the tunnel.
- Create favourable conditions for the seedlings and adverse ones for pests.
- Avoid seed loss.
- Use water efficiently.
- Grow crops all year, independently of weather conditions.

Step by step: Tunnel planting

1. Disinfecting the trays

- ✓ Fill a bucket with clean water.
- ✓ Add chlorine (10 ccs in 20 litres of water).

- ✓ Submerge the tray in the bucket and leave for a few seconds. As the whole tray doesn't fit in the bucket at once, turn it around and submerge the other half for a few seconds.



2. Filling the buckets:

- Prepare the substrate mixture that you're going to use in the trays with:
 - ✓ Two shovels-full of vermicompost.
 - ✓ One shovel-full of burnt rice chaff.

The combination of these ingredients in these proportions is proven to combine the necessary characteristics for seedling production, giving them the support and nutrients they need for

proper development and permitting that, at the time of transplant, the seedling will come out with its root system intact.

- Fill each tray cell evenly with this mixture and tap the tray so that the substrate settles and compacts a little.



3. Planting

- Make a hole in the middle of each seed hopper with a stick or pencil. Each hole should be the same depth, two or three times greater than the size of the seed.
- Place a single seed in each hole. When more than one seed is planted and germinates, you have to uproot the extra seedlings and leave just one.
- Cover the seeds with a bit of substrate.
- Water the trays daily in the morning and evening so that the seeds can germinate. Use a watering can or splash by hand.



4. Transplant

- Tomato seeds begin to germinate 3 to 4 days after planting. Peppers 7 to 9 days, onions 11 to 15 days.
- Transplant the seedlings to the field 22 to 28 days later according to the crop. As a general rule, you can transplant when the seedlings have their first two true leaves or are about 15 cm. tall.
- The seedlings should come easily out of the tray with substrate and all.



Advantages and limitations

Advantages

- ✓ Tunnel seedling mortality is 90% less than that of seedlings produced in traditional nurseries.
- ✓ You don't need a lot of nursery space.
- ✓ The tunnel structure, if well taken care of, can last about 8-10 years.
- ✓ You don't need a lot of water to water the trays.

Possible limitations

- ✓ A tunnel is relatively expensive (\$150 USD) and would not be profitable for a single vegetable farmer. It must be for collective or community use.
- ✓ Every three to five years, depending on wear and tear, the micromesh must be replaced for a new one. You'll need 20 square metres (cost: about \$40 USD).

Recommendations

- ✓ During the rainy season, you have to protect the micromesh with transparent plastic so that drips won't fall on the trays and the micromesh doesn't rot with decaying leaves.
- ✓ It's good to locate the tunnel somewhere away from trees that could fall on the tunnel or cover it in leaves that rot and damage the micromesh.
- ✓ Don't let the plants get leggy in the trays.



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Credits

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