



# FAMILY VEGETABLE GARDENS

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**Michael Aburto** from the La Chorrera community in the municipality of Villa El Carmen (Nicaragua), is an active CANTERA promoter in his community. He's convinced of the benefits of family vegetable gardens:

"Family vegetable gardens have become a really successful strategy for my family and community because they've been helping us feed our families and lower expenses. Before we had to buy things that now we can get from the garden.

My dad farmed basic grains, because he tried planting vegetables and plantain, and it didn't work.

He taught us to just plant maize and beans and nothing else because everything else was a waste of time and wouldn't work. Now I wish he were alive to see that the problem wasn't the soil, but instead the poor techniques we were using.



There were some foodstuffs that we couldn't eat because they were too expensive to buy, but now we can eat them. My son is seven years old. Three years ago he wouldn't eat vegetables. Now, he eats all sorts of stuff: carrots, tomatoes, peppers... and that's really good for his health and development.

Something else that's important is that we don't use chemicals. We work with good agroecological practices. The vegetables may not be as big as you see in the supermarkets, but that's not the important thing. What matters is that we're eating healthy."

### What's the purpose of a family vegetable garden?

- 1 To improve the family's everyday diet without having to spend a lot of money.
- 2 To provide the family with healthy, nutritious, chemical-free food.
- 3 To get children in the habit of eating vegetables and having a more diverse and balanced diet.

- 4 To make the best use of the family yard.
- 5 To generate surplus crops that can be sold locally.

### Step by step: Starting a family vegetable garden

#### 1. Choosing the location:

- ✓ Choose an area that's 7 by 7 metres (49 m<sup>2</sup>), near the house and close to a water source.
- ✓ Fence it in so that animals, especially chickens, can't get in. You can make a fence with chicken wire, but you can also use any material you have on hand: tree trunks and branches, banana tree trunks, dragon-fruit cactus, or Bromelia Pinguin.

#### 2. Preparing the soil:

- ✓ Plant in raised beds that are 1.5 metres wide by 6 metres long. Include a 50-centimetre path between beds. Generally, it is good to start with three raised beds.

- ✓ The beds should be laid out east to west.
- ✓ To prepare them you need to do what they call double digging. Double digging consists in excavating a 30 cm long by 30 cm wide ditch along the width of the bed, removing all the soil from the bed. Then use a pitchfork to loosen the bottom of the ditch. This way you'll have 60 centimetres of loose, aerated soil, so that the crop roots can develop.

Disinfect and fertilise the beds by covering the bottom of the ditch with the following materials: 1 pound of lime or ash per square metre (in other words 9 pounds per bed) and 10 pounds of organic fertiliser such as vermicompost,

Bokashi, or compost per square metre (in other words, 90 pounds per bed).

Afterwards, continue in the same way with the next ditch, filling the first ditch with the soil you take out of the second, and so on until reaching the end of the bed. Then level the surface of the bed with a rake.



Photos courtesy of Frank Tondeur



**3. Planting::**

- ✓ Divide each bed into eight 75-centimetres-wide sections. Plant a different crop in each section.

**4. Drip irrigation:**

- ✓ For three beds you need one 200-litre barrel, one ½-inch PVC pipe and nine 6-metre-long strips of perforated tape (three per bed placed 30 centimetres apart from each other along the bed). More resistant polyethylene hoses that are 16 mm in diameter can also be used.

**Planting type and sowing distance (spacing) according to crop**

| Crop     | Quantity of seeds | Planting type  | Spacing                       |
|----------|-------------------|----------------|-------------------------------|
| Carrot   | 5 grams           | Direct seeding | Fine trickle                  |
| Radish   | 5 grams           | Direct seeding | Fine trickle                  |
| Beet     | 8 grams           | Direct seeding | Fine trickle                  |
| Onion    | 5 grams           | Direct seeding | Fine trickle                  |
| Cucumber | 5 grams           | Direct seeding | 25 centimetres between plants |
| Tomato   | 12 plants         | Transplant     | 25 centimetres between plants |
| Pepper   | 12 plants         | Transplant     | 20 centimetres between plants |

**5. Management:**

- ✓ When crops are ridged, you can apply 40 pounds of organic fertiliser per bed. You can also apply foliar fertiliser to the crops that need it with a backpack sprayer.
- ✓ To control fungus and insects, you can use Bordeaux Mix and insecticides made with neem extract, ground chilli, or garlic with alcohol diluted in water. Yellow sticky traps for whiteflies and repellent plants like coriander, Mexican marigold, and basil can also be used.



**Costs (for a garden with three raised beds)**

|                     | Quantity                      | Unit cost    | Total cost          |
|---------------------|-------------------------------|--------------|---------------------|
| Organic fertiliser  | 108 pounds                    | \$0.16 USD   | \$18.00 USD         |
| Vermicompost        | 6 quintals                    | \$5.00 USD   | \$30.00 USD         |
| Seeds               | 3 oz. of at least 5 varieties |              | \$53.10 USD         |
| Seedlings           | 72                            | \$0.16 USD   | \$11.80 USD         |
| Garlic infusion     |                               | \$3.48 USD   | \$3.48 USD          |
| Bio-fertiliser      | 9 litres                      | \$0.66 USD   | \$6.00 USD          |
| <b>Total inputs</b> |                               |              | <b>\$122.38 USD</b> |
| Irrigation system   | 1                             | \$150.00 USD | \$150.00 USD        |
| <b>TOTAL</b>        |                               |              | <b>\$272.38 USD</b> |



## Recommendations

- ✓ Don't plant creeping plants like marrow, squash, yams or cucumbers in the middle of the bed. Instead, plant these at the end, so that they don't invade other crops.
- ✓ Be sure to rotate the crops from the sections of each bed so that you don't plant the same crop in the same place for two consecutive cycles. Additionally, after crops that remove lots of nutrients from the soil like maize or vegetables, you should plant a nitrogen-fixing crop like beans or legumes.
- ✓ It's better to be safe than sorry. That's why it's advisable to use varieties that are pest resistant, like Shanty tomatoes, which are resistant to whiteflies.

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