



The DIRT Society Introduction to Vertical Supports

Increased yields per plant, lower rates of disease, more space for planting, greater accessibility, and crop support are all very good reasons to consider trellises, cages or stakes in your vegetable garden. Supports can be crafted from diverse materials or purchased new, and range from simple, temporary structures to more permanent installments. Regardless of what you grow, or what sort of operation you are planning, a vertical element will serve you well if properly executed. Here's an introduction that will explain why and how these structures can be used.

Why you should incorporate vertical supports:

Greater harvests: A crop grown with more access to sunlight will dedicate less energy to leaf production, and focus more of its energy on reproducing. Thus, vertical supports could increase yields on fruit-producing plants.

Less disease and damage: By elevating and supporting heavy crops, you will prevent the spread of plant bodies on the ground. When not in contact with the dirt, they are less susceptible to bruises, breaks and soilborne disease.

Easier care and harvest: When a crop is lifted, pruned, supported and spread, it is far easier to see and manipulate. This makes for an easier harvest, and allows you to spot damage or pests before they do any real harm.

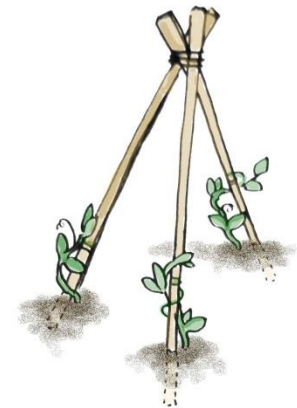
More variety: If wind or loose soil cause plants in your garden to break or fall, the crops you've chosen to grow may be ill-suited to your environment. A simple support structure could keep them growing and producing through the season.

What kind of support to use:

Nets, mesh, or cross-hatching: Trellises utilize supports that are both horizontal and vertical. This is ideal for crops that send out tendrils, or that grow many branches away from the central body. The actual structure can be anything from biodegradable twine fashioned into a net, chicken wire, or crossed and fastened rods, wires, switches or stalks. The strength of your trellis should be proportional to the weight of the full sized crop you intend to plant at its base.

Poles and Teepees: This structure is best suited to crops that have twining stems. A teepee can be made by connecting three (or more) deeply rooted rods at their top. The weight of the plants grown up each rod will be supported at the strongest point of the teepee. Poles can be arched, crossed, or manipulated into decorative shapes.

Stakes: Stakes are similar to poles, but are typically stout and sturdy. If you struggle with bushy, unruly crops that cannot support their weight of fruit, consider loosely tying them to a steady stake. This should be done with a soft but sturdy material to best protect the stems and prevent breakage.



Cages: These are best utilized with mid-sized branching plants that need a little support when reaching maturity. They provide a sturdy form that plants can grow around and through, and help to protect crops from sagging or snapping.

Permanent and heavy-weight frames: You may choose to build a permanent vertical structure either to spare yourself seasonal chores or to grow far heavier crops. These can be designed as multi-use or to support one particular crop (such as melons or pumpkins). Depending on how they are built, however, these structures may not allow for proper crop rotation, which could be detrimental to your soil.

Espaliering: This is a practice more common with woody perennials or with fruiting trees. By pruning and spreading a plant's branches along a vertical wall support, a gardener or farmer has considerably more access to the fruit, and effectively utilizes a small growing space.

Three sisters: This is a growing practice native to America, and utilizes three crops (squash, corn and beans) to create a symbiotic structural system for each. By growing beans up the stalk of corn, and covering the surrounding ground with a horizontally-spreading squash plant, the crops are not only held firmly in place, but have protected and thermo-regulated root systems.

How to plan ahead:

Be sure that you can easily reach through and around the structure. This will allow for an easy harvest, and access to any part of the plant that may be pest-ridden or diseased.



Ensure that you leave enough space at the base of a structure for weeding, watering, and maneuvering. Elevate the bottom-most support so that you can reach beneath it if the need arises.

Be careful to plan your structures so that the appropriate crops are exposed to a greater amount of sunlight, and shade-loving crops are protected. If trellised crops are not receiving adequate light, they may grow to one side of the structure and cause it to bend or fall.

A note on tomatoes:

Tomatoes come in determinate and indeterminate varieties. If you are growing *determinate* tomatoes, they will likely grow upwards and out, and ripen within a short period of time. They benefit from a sturdy stake support, or a strong cage.

Indeterminate varieties grow best when trained on a trellis, and can be pruned to resemble a long vine or central stem.

Most fruiting plants will benefit from a little support, and most gardeners can enjoy the many benefits of vertical growth in their operation. Whether it is to grow a greater amount of food in limited space, protect your crops from damage, increase your yield per plant, or provide easier access during harvest, a vertical support system will serve a garden well.