

How To Graft Vegetables To Boost Garden Yields

You can boost tomato yields by as much as two thirds by grafting high-yielding varieties onto hearty rootstock. Grafting can also deliver modern hybrid disease resistance to heirloom tomatoes. Johnny's Selected Seeds offers the supplies and know-how needed to make successful grafts.

"Our trials have demonstrated increased vigor and disease resistance with our grafted tomatoes," says Andrew Mefferd, vegetable and grafting technician at Johnny's Seeds.

The idea and techniques for grafting vegetables have been around for a century or more. But the practice of it has been most common in Europe and Asia where land is at a premium. University extension researchers and companies like Johnny's Seeds have started testing and promoting the idea. Andrew L. Thomas, horticulturist, Southwest Research Center, Hoberg, Mo., suggests that grafting can double yield, reduce need for pesticides and increase vigor. He's had great success grafting watermelons.

Carey Rivard, Kansas State University, Olathe, Kan., teaches workshops on vegetable grafting. He says grafting tomatoes is easy and credits Richard Hassel, Clemson University, with refining the more difficult watermelon grafting.

The extra labor is one reason vegetable grafting is most popular with high return, greenhouse production. Mefferd uses it for his family's market gardening farm. Based on his experience and the trials, he recommends it for home gardeners as well.

Using hoop house tomato trials at Johnny's Seeds in Albion, Maine, Mefferd grew two sets of three plants each of five popular tomatoes. These were grafted to Maxifort rootstock that has proven itself in greenhouse production. In the trials, one set of each variety was grafted while the second set served as a control for yield comparison. The plants were set out in the hoop house May 21 and harvest ended at the beginning of October.

"The grafted varieties averaged 40 percent higher yields," says Mefferd. "The variety Geronimo yielded 66 percent more tomatoes when grafted."

Yields varied from as little as a 3-lb. dif-

ference for Arbason tomatoes to a 12.9-lb. for Geronimos. The well-known variety Big Beef showed a 7.2-lb. increase when grafted.

Grafting of vegetables like apple trees requires cutting both plants on the same bias at a point where the stems are the same diameter. Johnny's offers detailed instructions as well as the small clips that are used to hold the stem pieces together as they heal. Because some varieties grow faster than others, the rootstock and varieties to be grafted may have to be planted on different schedules in order to have the right diameter stems on each.

Mefferd recommends running a germination test on seed to establish speed of germination and growth. Planting may only need to be varied by as little as a day. Seed stock for grafting should be planted 6 to 8 weeks before grafting is planned. The grafting process slows growth and delays plants reaching transplant stage by 1 to 2 weeks.

A simple way to tell if plants are ready to graft is to place a grafting clip on a representative stem. If it fits snugly, timing is right.

The work area should be washed down with bleach solution or another antiseptic. Always use new blades and clips to avoid spreading disease.

Once the stems have been sliced through and clipped together, they should be placed in a high humidity, low light environment. This can be under a dome or in a plastic tent or tunnel. Humidity should be at 80-90 percent during the healing process, and the temperature should be between 71° and 74°F.

The healing process takes a week or so and requires daily checks and gradual venting. By the end of the week, plants should handle normal growing conditions without wilting.

"Grafting takes time and attention, but it's well worth it for maximum production per plant," says Mefferd. "It's also a great way to grow heirloom tomatoes that don't have the resistance to soil-borne diseases that newer varieties have."

For detailed instructions and photos, including video, visit Johnny's website. Although the company did trial sales of grafted varieties in 2011, there are no plans to repeat that in 2012. Silicone grafting clips



Tomato yields can be boosted by grafting high-yielding varieties onto hearty rootstock (left). Small clips are used to hold stem pieces together as they heal.

sized for 1/16-in. stems are priced at \$13.60 for 200. Spring-loaded clips which fit stems from 1/16-in. to 5/32-in. are priced at \$40.95 for a pack of 200.

Contact: FARM SHOW Followup, Johnny's Selected Seeds, 955 Benton Ave., Winslow, Maine 04901 (ph 207 861-3999; toll free 877 564-6697; www.johnnyseeds.com).



Close-up photo shows clips from different sides.

Skidster Lock Frustrates Thieves

Thieves will find it nearly impossible to steal your skidsteer if you lock it up with The Original Skidsteer Lock by The Equipment Lock Company. The device hooks over both drive controls.

It's universal for most models, says Janene Ferris, who works in marketing for the company. It also works on newer, enclosed cab models.

"The locks are cost effective and can be ordered keyed alike with other equipment locks," she says. The Equipment Lock Company sells a full line of locks for all types of construction equipment.

Besides built-in barrel style key locks that are pick-resistant (\$199), the company offers a four-digit combination lock that can have the combination changed any time (\$219.50). Another model has a lock that slips over one control (\$129.50), which only allows the skidsteer to be driven in a circle. All the locks



Locking device hooks over both drive controls on skid loader.

are powder-coated steel.

Ferris says customers include dealers, construction contractors, utility contractors and private skidsteer owners.

Contact: FARM SHOW Followup, The Equipment Lock Company, LLC, P.O. Box 4308, Winchester, Va. 22604 (ph 866 565-4887; www.equipmentlock.com).

Robotic Falcon Keeps Pest Birds Away

Pest birds don't like Robop, a lifelike robotic peregrine falcon. It chases them away from landfills, factories, stores and other defined areas such as livestock barns or yards. It has even been used at the Wimbledon Tennis Tournament.

"The first place we tried it was a farm," says John Donald, Robop Ltd. "They had a problem with birds around the cattle sheds and feeding area. We also tried it at a chicken farm where seagulls were attacking the chickens when they came out to feed."

In both cases, the robotic falcon did the job. In the 10 years since being introduced in Great Britain, the Robop has spread to 15 countries. Most recently, it was introduced to North America by Keith Everett, Predatech Inc., an Ontario, Canada firm. Everett had tried a wide variety of products and programs, including live falcons, to keep birds away from landfills. Among them, he found live falcons as the most effective, but limited by weather and dusty conditions.

Bad weather doesn't stop the Robop. Once the battery or solar panel powered bird is installed on its perch, live birds simply stay away. The reason, according to Donald, is the accurate mimicry of live falcons internationally recognized as a predator of birds.

"Robop looks like a well fed falcon and moves its head and wings slightly or flaps

its wings in random movements like a real peregrine," he says. "The randomness is controlled by a computer, so there is no set pattern for birds to become accustomed to."

Donald says factories and big-box stores with flat roofs have found the Robops particularly useful. The roofs' drainage systems can become clogged with bird waste. He cites a Best Buy store that wanted to install a Robop and was told to clean the roof first. They took four tons of muck off the roof.

"People don't realize how much waste birds leave," says Donald. "The presence of one Robop is enough to scare problem birds into relocating."

Donald can't say how many acres a single Robop can protect as no scientific studies have been done. A single Robop is priced at \$5,300 (\$5,600 Canadian). He cites one large Caterpillar factory that has installed 6 of the falcons powered by solar panels.

"Farms get complicated by alternative roosting areas, such as trees and other buildings," he says. "Commercial and industrial sites are less complicated. Installing one or more Robops is expensive, but they're nothing compared to the cost of cleaning buildings and areas of tons of waste."

Donald says the firm is interested in finding additional distributors in the U.S. However, the firm is looking for established entrepre-



Battery-powered, robotic peregrine falcon moves its head and flaps its wings in random movements like a real bird.

neurs willing to make the needed investment of time and money.

"There is a huge opportunity in the U.S.," he says. "We are the only people in the world who make anything like this." You can see a video of Robop in action at www.farmshow.com.

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datech Inc., 385 Carlisle Rd., Carlisle, Ont. Canada L0R 1H1 (ph 905 929-1409; info@predatech.ca; www.predatech.ca) or Robop Ltd., Unit 3, Satellite Park, Macmerry, Tranent, East Lothian UK EH33 1RY (ph 011 44 1875 619 991; office@robop.co.uk; www.robop.biz).