Tomato producers use grafting for higher yields

By Chuck Raasch, USA Today

Tomatoes, the kings of U.S. home gardens, are undergoing a revolutionary change, according to breeders and growers.

Producers are grafting disease-resistant and insect-resistant roots onto familiar heirloom and hybrids, and seed catalogs are featuring a varied selection of grafted plants for the first time this year. Tests in the U.S. have shown that even notoriously stingy but good-tasting tomato plants become super producers when grafted to more vigorous roots.

“It is the biggest thing to happen in gardening, probably in 20 years,” says John Bagnasco, host of “Garden Life” radio show and president of the Vista-based GardenLife, which sells the grafted “Mighty Matos” on its website.

He is in a partnership – called SuperNaturals – that sells through several popular seed catalogs and hopes to triple sales over last year, to more than 1 million plants sold in the U.S. this year.

Andrew Mefferd goes further. A self-described “talent scout for plants” and the technician in charge of tomatoes at Johnny’s Selected Seeds, a global supplier based in Winslow, Maine, Mefferd calls grafting “the single biggest thing to advance tomatoes, I would say, since tomatoes were first hybridized” over a century ago.

The grafting push comes at an intersection of economic, environmental and health trends. Some home-garden wholesalers and retailers have had robust years during the economic downturn because more people are growing their food to take pressure off household budgets. Meanwhile, health-conscious

consumers are seeking more naturally homegrown products, but have limited garden space.

The National Gardening Association's annual survey found that while overall gardening activity, which includes everything from landscaping to potted plants, fell from $36 billion in 2008 to $29 billion in each of the last three years, vegetable gardening sales were up by roughly 20 percent to about $1.7 billion annually.

"It's really an economic and an environmental story," says Alice Doyle, a grafting pioneer in the U.S. and co-owner of the wholesaler Log House Plants in Cottage Grove, Ore. "There is a triple bottom-line profit – more yield, less expensive chemical usage, no environmentally negative outputs."

Grafting involves attaching the top of a popular plant onto a root that has demonstrated resistance to the diseases and microscopic pests, called nematodes, that have killed many a home-grown tomato.

Some home gardeners have reported double or triple yields from grafted tomatoes that bear longer and in greater volumes than normal heirlooms or hybrids. Vines can shoot a dozen feet or more. Because grafting is labor-intensive and requires special growing conditions, grafts are pricey, going for $7.95 or more a plant, twice the price of normal plants. They are also fussy growers and must be carefully planted.

But producers are hoping to demonstrate that the extra cost and work is worth it to farmers market producers, outdoor tomato farmers and urban gardeners. Besides tomatoes, grafted eggplants and peppers are showing up in this year's seed catalogs.

Grafting vegetables has been common for decades in countries where land is scarce and where soils have become disease-laden over centuries of farming. Commercial growers have grown them for years in this country, but this is the "roll-out year"

nationally in the home-garden market, says says Mary-Kate Mackey, who writes a garden blog.

Doyle was introduced to grafted plants during a trip to Crete in 2000, and she began working on getting them more widely used in the U.S. Bagnasco had been working separately on the same idea, and the two ran into one another at a gardening symposium in Dallas a few years ago.

They formed SuperNaturals with Tim Wada, president of the Vista, Calif.-based Plug Connections, which grafts most of the tomatoes sold under the Mighty Matos label.

Dick Zondag, the president of Wisconsin-based J.W. Jung Seed Company, says his company tested the grafted tomatoes last year and decided to feature them this year.

“That was my first question, ‘why would you even consider paying seven or eight dollars for a tomato plant when you can plant a seed that costs 10 or 15 cents?’” Zondag says. “The reason you do it is because the yield is sometimes three to four times as much. The fruit comes earlier. … Some of these really tasty heirloom varieties can really take off.”

Heirlooms are often the tastiest tomatoes, but can be prone to disease and meager producers. Hybrids can boost production, but often sacrifice taste. Grafting is a detour around both challenges.

Nature “never gives it all” in the quest to boost production, Mackey says. “It holds back something, and the first thing it often holds back is taste.”

But with grafting, she says, “you get yield, you get taste, and you get disease resistance.”

Harry Olson, 69, a retiree from Salem, Ore., last year conducted a grafted vs. non-grafted test on five tomato varieties in his community garden. All five grafts produced

more, and he says his grafted Brandywines had three times the yield of their nongrafted step-cousins.

The self-described “Doubting Thomas” says he saw a “profound difference” resulting in plants that produced weeks after normal plants and from root systems that were 10 times larger than non-grafted ones.

“People would just stand there and look” at his prolific plants, he says.

Jim Myers, an Oregon State University horticulture professor who specializes in developing plants that can thrive in the Pacific Northwest, created a purple tomato high in anti-oxidants called the Indigo. Last year, he and graduate assistants tested grafted vs. non-grafted Indigos, and the grafted plants produced three times more.

Grafting “could make heirlooms very productive,” he says. He predicts that the price will come down as demand grows, as producers seek more rootstock, and if grafting becomes more mechanized.