Shrinking apple trees don’t hurt the harvest

By Dan Charles, NPR

When Zarrina Mulloboeva got invited to go apple picking the other day, she thought it would be a taste of home. She’s an exchange student from Tajikistan, in central Asia – a country close to the ancestral homeland of apples. Her uncle has a small orchard. In fact, when Mulloboeva came to the United States six weeks ago, she brought with her a large bottle of homemade dried apple slices.

But when Mulloboeva arrived at the orchard, she was startled to find that in America, this land of skyscrapers and super-sized portions, the apple trees are midgets. Back in Tajikistan, apples hang on trees that are big as houses, and it takes real work to get at them. Here, she didn’t even need a ladder.

Actually, American apple trees used to be big, too. So what made them shrink? Very simple: Dwarfing rootstocks.

“It all began a hundred years ago,” says Gennaro Fazio, a geneticist with the USDA’s Plant Genetic Resources Unit in Geneva, New York. In 1913, Fazio says, a scientist named Ronald Hatton went to work at a new agricultural research center in the small town of East Malling, in England. There, he started to catalog the “rootstocks” being used by apple growers across Europe.

Apple growers have known for centuries that they can graft together the roots of one tree variety with the fruit-bearing branches of another. That way, they can create a tree that combines the best of both: strong, disease-resistant roots with branches that yield delicious apples.

Hatton was intrigued by “a group of rootstocks that will dwarf the tree and make it more productive,” says Fazio. Essentially, those roots channel the tree’s energy away from making wood and toward growing fruit. He published information about them and distributed several of the most promising ones to apple growers.

But it took a long time for the industry to come around to more petite trees, Fazio says. Most growers couldn’t believe that small trees could be more productive than big ones. With time, though, growers realized that if they used dwarfing rootstocks and planted their trees closer together, they could increase their harvest of apples per acre by 200 to 300 percent.

And they also discovered it’s a lot easier to pick the fruit from dwarf trees and spray them, too (if you are inclined to spray your trees).

By now, smaller trees are the rule in the United States and Europe. In many other places, though – including the central Asian homeland of apples – you’ll still need a tall ladder to get your hands on the fruit.