

Single vs. Multi Stem Plant Form

The hazel plant wants to be a bush, like a king-sized lilac. Only chipmunks can collect the fallen nuts from among this profusion of stems, but that's perfectly okay with the hazel. It's not okay with commercial growers. The solution has been to train the hazel to a single stem form, by continuously removing the root sprouts and keeping the single stem clear of lower branches.



An ancient single hazel plant in the alley behind my barber shop in Point Pleasant, WV. Count the stems. This species is C. Americana. The commercial European hazel species, C. avellana, would be twice this tall and half as sprouty.

The Upper Midwest Hazelnut Development Initiative has a different management approach than used by commercial growers in Oregon. The Upper Midwest is using Blueberry pickers harvesting hazelnuts, and the hazel plant's spacing and shape is being managed as a hedge that exactly fits the picker machine's mechanical requirements. Hardier and smaller European/American hybrid hazels are used, with many smaller plants in the hedgerows. A major difference with the Upper Midwest approach is that the nuts are picked off the tree, whereas the Oregon vacuum harvesters collect the nuts after they fall. I think that picking off the tree has some advantages, but I haven't seen a controlled experiment in the wetter Midwest climate.



A blueberry picker.

Hazelnuts are way easier to pick than blueberries. I've picked both semi-professionally.

In some regards, the situation is the same in both growing regions. Both are maintaining their hazel plant's shape to accommodate their harvesting machines.

Any agricultural practice that tries to cross up nature is in for a battle. Expect new challenges about every year. Sprout control has been costly and evolving for commercial Oregon growers. The current practice uses glyphosate or low volatility 2, 4-D to kill the sprouts. I use a string trimmer while the sprouts are still soft, before they become woody. [20220804 102222.mp4 - Google Drive](#)

Historically, hazels evolved with their many stems growing within a shady bush. When one of these stems is chosen to become a tree, it's a big surprise. The stem's bark is not prepared to stand exposure to direct sunlight. The exposed tissue overheats and the cambium dies. Bark is any tree's outer defense and the

bark's phloem is key vascular tissue. The dead sunscald area becomes a welcome opening for the tree's microbial enemies. These infections and reduced overall vascular flow, stress the above-ground part of the hazel, possibly to the point of complete tissue death.

Don't miss diagnose the basic problem by the secondary appearance of insect holes or fungal bodies.



Sun scald destroyed area on a single stemmed hazel tree.



The smoking gun sun scald diagnosis. The areas protected by the spiral wraps are undamaged. The exposed area between the wraps is wrecked. My feeble attempt at protective paint was too diluted.



Sun scald and secondary infections destroyed enough of the cambium's perimeter to cause above-the-ground tree death. The root system has survived, and the little root sprout at the right of the stump will hopefully become my new tree.



The upper part of this sun scalded hazel tree didn't make it. I shaved off the bark to see the problem.

There were ants living in these holes, but they got in because the tree had become defenseless.



***This more recent
sun scald killed
area is surrounded
by fungal growth.
It would be easy to
blame the
adventurous fungi
for the damage.***

Our place in West Virginia is in USDA hardiness zone 6b, (headed for 7a.) We can grow the well tested commercial European hazel cultivars. We don't need to consider the hardier hybrids, but picking off the tree has some appealing plusses. The decision is driven by harvesting considerations.

Eastern Hazelnut Grower's Delema

<i>Planting size</i>	<i>Multi-Stem</i>	<i>Single Stem*</i>
small	Pick by hand off the tree	Many picking options - Bag-a-Nut, Nut Wizard ...
medium	No-man's land: too big for hand picking, and not big enough for blueberry picker. Organize a co-op	Many intermediate vacuum harvesters
large	Hedge row - Blueberry picker - Smaller plants**	Full Oregon practice

** Cultivars for hedge row plantings are being developed.

*All size plantings need root-sprout removal and sun scald protection until canopy closure.



We didn't even know there was a multi-stem option when we started out. I think we have our root sprouts and sun scald problems under control. It only took 14 years to figure out what Oregon growers already knew. Hopefully these two problems will soon ease as the canopy closes.

I didn't need to paint the north side of these stems, but the north side faces the road where our neighbors drive by.