

## Plant Lover's Almanac

Jim Chatfield  
Ohio State University Extension

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At last. This past weekend winter still embraced and encased us. Now harbingers of spring abound. Winter is technically with us until next week, but the icy ride has finally turned, at least for now. Hard to believe but Lilja Rogers poem has come full circle once more:

*First the howling winds awoke us  
Then the rains came down to soak us  
Now – before the mind can focus –  
Crocus.*

We continue our Almanac lessons in tree care today, but first, let us celebrate what Wordsworth wrote in “To My Sister” 217 years ago, but still seemingly fresh, especially gifted to us this week:

*It is the first mild day of March:  
Each minute sweeter than before  
The redbreast sings from the tall larch  
That stands beside our door.*

*There is a blessing in the air,  
Which seems a sense of joy to yield  
To the bare trees, and mountains bare,  
And grass in the green field.*

Now for our daily tree care lesson. We spoke before about how soil chemistry matters (soil pH and cation exchange capacity), how soil physics matters (the soil texture triangle of sand, silt, and clay), and why the living soil matters (add organic matter to improve soil structure!). Let us turn now to:

**Where Roots Grow Matters.** Contrary to popular belief and graphic representations in book after book, root systems are not mirror images of the above-ground parts of the trees we see. The absorbing (water and minerals) roots are shallow and wide. Research shows that for a typical large tree over half of the absorbing roots are within the top foot of soil and over 90% are within the top three feet of soil. As well, the root system does not stop with the “drip-line” of the tree, that imaginary circle where water would drip from the canopy leaves. Left unhindered, the root system would expand outward 2-3 diameters of the drip-line or more.

Of course, as those heroic and indefatigable graduate students who have researched where the wild roots grow will attest, there are variations on this theme. Soil type, tree species, obstructions such as roads and driveways and houses may change the equation of where these roots grow – but again – shallow and wide – is the rule that is only marginally excepted. Why does this matter? It matters because it means that we drastically alter the health of those roots if we change the soil grade over those root systems.

If roots really were a mirror image of the above-ground canopy, then adding soil over the root system would little change the environment of the roots. But with a shallow root system, adding soil on top or planting too deep at



*One moment now may give us more  
Than years of toiling reason:  
Our minds shall drink at every pore  
The spirit of the season.*