

to release valuable nutrients, and harmful anaerobic fungi don't easily proliferate.

The dry surface between the emitters' wet spots discourages weeds because dormant seeds don't have enough moisture to germinate. However, although reduced weeding is often touted as an important benefit of drip irrigation, this pertains only to arid climates. Any periodic summer rain will negate the effect of dry spots between plants by providing enough moisture to sprout weed seeds. Mulch, which is routinely used to hide a drip irrigation system, can be used to suppress any weeds that might germinate.

Where Roots Drink and Eat

It seems logical to many gardeners to water plants deeply, with infrequent but lengthy irrigations. Drip irrigation can be used for this kind of irrigation, but the roots of many plants, it turns out, don't really get most of their water and nutrients from the deep regions of the soil. In all the studies I've been able to find, the usual conclusion is that for the sake of quality growth, as opposed to sheer survival, the upper one or two feet of the soil accounts for over 50% of all the water a plant absorbs. [See Figures 2 & 3.] While many plants have roots deeper than two feet, these deeper roots exist mostly to stabilize the plant, absorb some micronutrients, and help the plant survive droughts rather than to support

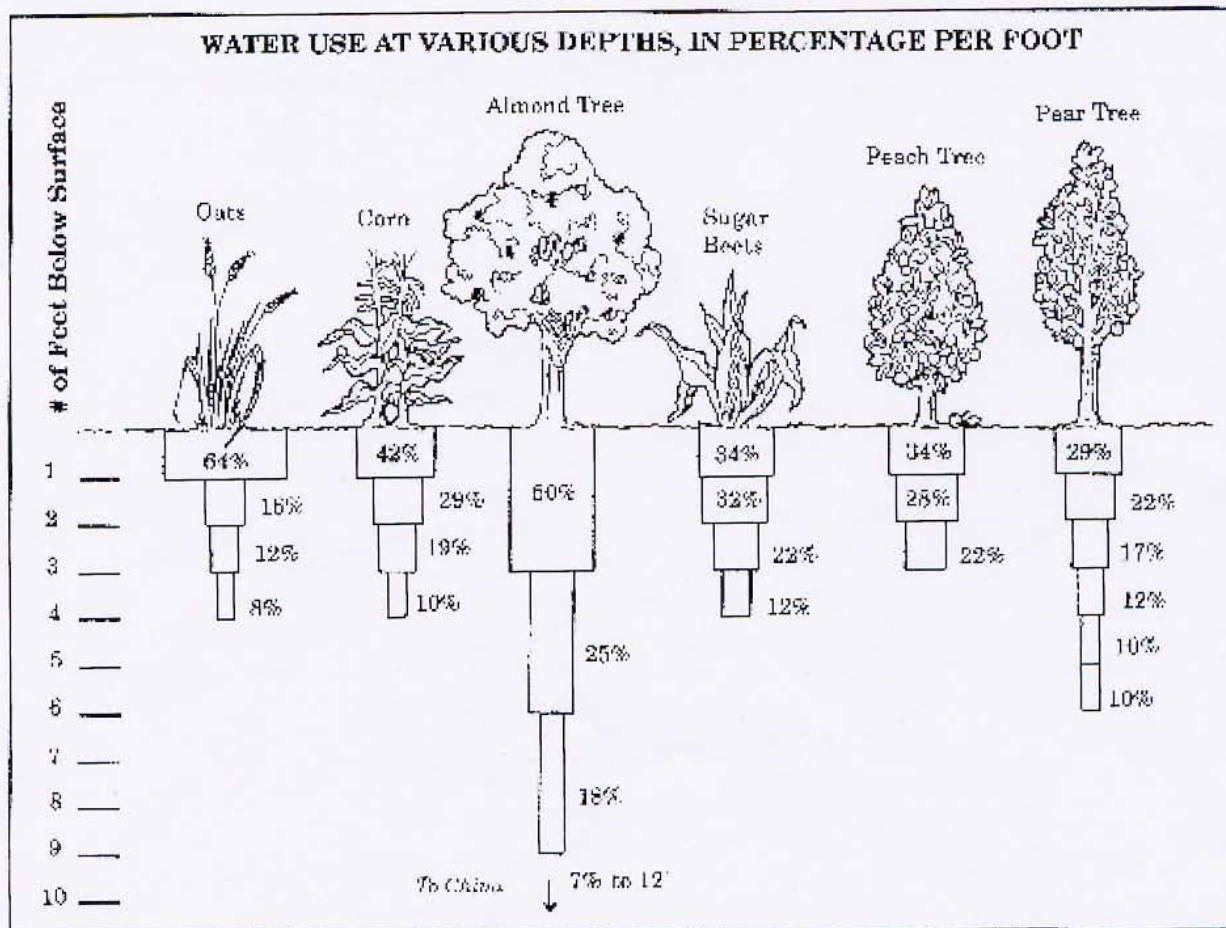


Figure 2 Plants absorb most of their water and nutrients from the upper one to two feet of the soil. Each example is from a different, independent study. Most root "maps" are for economic crops due to their agricultural value. See the Appendix for illustrations of more roots and some native-plant root systems.