



Is Topsoil Necessary?

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"Poor soil" often is the excuse for turf failure. And while we as turf growers realize this is an over-worked idea, we know that a lack of topsoil is often a handicap on sites where there is need to establish turf-grass. The topsoil may have failed to develop naturally; possibly, it was removed or reconstruction of the site and regrading may have dissipated the topsoil.

What are the consequences of no topsoil or very poor topsoil? The amateur may say that turf cannot be grown on subsoils, but we have learned that it is possible to develop good turf cover on most all subsoils. From my experience, I recall two New Jersey subsoils that I would avoid. One of these is the very acid, wet, black clay soil that we find between New Brunswick and the upper coastal region of New Jersey. This

soil will grow turf if it is properly drained and enough lime can be incorporated.

The fact that most subsoils will grow turf does not make topsoil unnecessary or undesirable. Its use reduces the chance of failure in turf-grass establishment and makes maintenance of established turf easier and less costly. When turf is established on subsoil, be on guard for such items as improper pH, need for extra fertilizer (especially re-fertilization), a poor physical condition that interferes with seedling establishment and additional need for watering during the first year or two. The use of a mulch over the seeding is more desirable on poor soils than good soils.

What are some of the disadvantages of topsoil? First, topsoil is com-
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ple red flowers, dark red fruits, and purple green foliage. The mature height is approximately 12 feet.

f. Mary Potter — A cultivar with pink to white flowers and small red fruits. At maturity it will reach 15 feet.

g. Red Jewel — An excellent red-fruited, white-flowered selection. The small fruits are glossy red and very persistent. The foliage is a good, glossy green. This plant has a compact habit with horizontal branching. At maturity it will reach 15 feet.

h. Red Splendor — A cultivar with foliage purple red to dark green. This plant has pink to rosepink flowers. It is moderately susceptible to fire blight.

i. Royal Ruby — A narrow upright selection which grows to 15 feet at maturity. It has large, double, cup-shaped flowers which are often 2 inches in diameter. This vigorous grower has glossy, dark green leaves with very few fruit produced. In addition, it has moderate to light scab and fire blight susceptibility.

j. Snowdrift — A single white flowering selection which is pink in bud. This selection has tiny orange red fruit which is quite persistent. It is noted for its straight trunk and upright branching habit. At maturity it will reach 20 feet.

k. White Angel — A heavy flowering single-white selection, noted for good red fruits persisting until spring. This plant flowers abundantly when young and has good glossy green foliage.

l. Winter Gold — A small, yellow fruiting selection with white flowers and good green foliage. It reaches a height of 20 feet at maturity. It has slight fire blight susceptibility.

m. Zumi Calocarpa — This cultivar has white flowers with bright red fruits persisting until spring. It has a dense upright growth habit with dark green fruit. The mature height is approximately 15 to 20 feet.

Columnar Sargent Cherry

Prunus sargentii Columnaris: This is an excellent columnar type with deep pink flowers, polished red bark, and a good red fall color. It is very hardy and maintains its narrow habit through maturity, which is approximately 40 feet.

Rancho Sargent Cherry

Prunus sargentii Rancho: This selection is similar to Columnaris, with the same narrow habit and sharply ascending branches.

Kwanzan Oriental Cherry

Prunus serrulata Kwanzan: This selection has double pink flowers and a compact, upright, spreading habit of growth. Very formal in character and subject to salt damage and winter frost cracks in exposed areas. At maturity, this tree will reach 25 feet.

Gallery Pear

Pyrus calleryana: This species grows to approximately 30 feet and is very tolerant of city conditions and heavy soils. It has good, glossy green foliage, abundant early white flowers, and a good reddish fall color. Its thorns are a limiting factor in its use as a street tree. Improved introductions:

a. Aristocrat — A selection similar to Bradford in hardiness character, but more ovate in shape and with slightly larger leaves. In addition, the branches are at right angles to the stem.

b. Bradford — A thornless selection with all the good qualities of the species. It has a broad oval form at maturity, to 40 feet, usually fruitless, with ascending branches and a crimson fall color.

c. Chanticleer — A good, sharply pyramidal selection narrower in form than Bradford, with an excellent yellow fall color.

d. Fauriei — A dwarf selection growing to 15 feet, with a round form at maturity similar to Bradford but smaller.

e. Rancho — A cultivar with good red fall color and white flowers similar to other types.

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monly a very costly item. Good topsoil is often unavailable; and it is difficult to specify and control quality. It is rare that good topsoil does not contain weed seed. This leads to the danger of introducing serious weeds that were not present on the site. Where there is a great difference in texture between the subsoil and topsoil, this may prevent good movement of water and roots into the sub-

soil. While this may be offset quite generally by blending of the two layers, this is often not attempted or accomplished. Topsoiling a turf site before turf establishment may lead the amateur into believing the soil has enough fertility that subsequent liming or fertilization is unnecessary. Once such inertia in maintenance develops, it is difficult to overcome.

What are some considerations that may influence the decision on the use of topsoil?

Certainly, availability and cost of topsoil are very important factors. If consistently good turf is required, topsoil becomes more important. A landscape site that is below grade may require fill; and the use of topsoil, where this condition exists, adds another useful function. While it may not seem too professional, some use topsoil to cover stones and small rocks. If the topsoil layer is not too shallow, this may not be undesirable. If topsoil is used, can the objectional cleavage layer with the subsoil layer be avoided? This becomes a very important consideration on slopes and areas receiving high use or maintenance.

Also, the alternatives to topsoiling might be considered before proceeding. Organic matter of the correct type generally improves most poor soils whether they be sand, clay or infertile. Where sufficient time exists green manure crops can be grown or various forms of natural or organic residues can be incorporated. Local environmental wastes may be available and these can be put to use and serve the community. Some concerns with these materials could be pH problems, metal residues or short-term biological uncleanness. Except for the metal residues, these problems can be overcome.

What is the proper decision on topsoiling for establishing turf?

Where topsoil exists give it proper care and put it to good use. Store topsoil on well-drained sites in such a fashion that large, tightly sealed piles are avoided. Keep weeds under control. Manage a minimum of handling and tillage to preserve the physical condition of the topsoil and avoid loss of organic matter. Avoid spreading and tillage of topsoil when it is wet. In closing, rarely is it desirable to dissipate and waste topsoil. □