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Green Mulch from Invasives Offers Many Benefits

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Green mulch from invasives offers many benefits



As mentioned in the previous installment of this series, my property has an exuberant abundance of Japanese honeysuckle that I am slowly hacking away for use as supplemental winter fodder for my chickens. The second most abundant invasive exotic on my property is autumn olive, *Elaeagnus umbellata*. Our

place is not far from a state-operated wildlife management area where this Asian native was planted long ago to provide food and cover for birds and small mammals. The strategy seems to have worked, because the edible red berries are indeed consumed as winter food by wildlife. As the fruits enter the food chain, their seeds disperse across the countryside. On my property, I have hundreds of plants ranging from very young seedlings to large shrubs or small treelets about 12 feet tall. I see autumn olive as a common roadside shrub pretty much everywhere I travel in the northeastern U.S. In my ongoing efforts to reduce the invasive species in my own backyard, I've tried feeding autumn olive leaves to the chickens, but they show no interest. What to do?

For the past several years, I've been clipping leafy branchlets of autumn olive for direct use as green mulch in my vegetable garden. In essence, I clip the shoots into segments ranging from 4 to 10 inches long, gathering the freshly chopped mulch into a wheelbarrow. I like to emphasize the youngest and leafiest stems, but since I am also interested in reducing the exotic plant's biomass, I also clip woody stems up to a half inch in diameter. I then place the coarse mulch, leaves, young stems, and chopped woody branchlets, around my vegetable plants. I install the fresh green mulch to a depth of 3 to 6 inches. This may sound excessive, but the green leaves

quickly wilt, dry out, and shrivel to a fraction of their original size. Consequently, the mulch layer soon becomes a thin veneer over the soil surface. Sometimes I add a second layer if the first one shrivels to the extent of failing to cover the soil.

All the usual benefits of mulch apply to this exotic green mulch: soil water evaporation is decreased, soil temperatures are moderated, mud-spatter and soil compaction from raindrops is decreased, and weed growth is inhibited. When wilted and crinkly, autumn olive mulch is readily penetrated by rain water. Compared with other materials, *green* mulch, in theory, should provide the extra benefit of adding nutrients to the soil. The theory goes something like this: the biomass of green, living, leaves should contain a reasonable balance of the mineral nutrients required for plant life. The leaves and stems were, of course, alive and fully functional when harvested. So, as the green mulch begins to decompose, a full and balanced range of nutrients should be released into the soil. Further, autumn olive offers a special advantage in terms of nitrogen. Roots of *Elaeagnus* form a symbiotic relationship with actinomycete bacteria that perform nitrogen fixation. Much like the familiar nitrogen-fixing bacteria of legume root nodules, the actinomycetes (genus *Frankia*) pass nitrogen compounds to their *Elaeagnus* hosts. In theory, then, one might expect autumn olive green mulch to be particularly beneficial in the vegetable garden.

Certainly, the foliage of many invasive exotic plants could be cropped for use as green mulch. I have used Japanese honeysuckle this way, alone and mixed with autumn olive. I would caution against using tree-of-heaven leaves because this species (*Ailanthus altissima*) has been shown to possess allelopathic compounds – molecules that inhibit the growth of other plants. And I would be careful about using certain herbaceous exotics as mulch if they contain fruits and/or seeds. No need to add weeds to the garden. In the case of Japanese honeysuckle and autumn olive, however, fruits and seeds

in the mulch have not proven to be any trouble. I do find an occasional seedling, but the growth of these woody plants is slow relative to garden vegetables. The few seedlings that do pop up in the mulch are no match for tilling of the soil that occurs between crops. Also, I have found a few spontaneous hardwood cuttings in overwintered mulch, but these, too, can be easily tilled under, or pulled out and tossed on the compost pile.

Another advantage to autumn olive as green mulch is based on its phenology: it is one of the earliest woody plants to leaf-out in the spring, and it also is one of the last to drop its leaves in the fall. Consequently, whenever I need mulch for the vegetable garden, it is almost always available. The last flush of leaves in the fall is conveniently available for mulching winter crops like garlic and onions, and spring leaves emerge in time for use on cabbages and spinach. In the summer, I like to use green mulch under peppers and okra. Except for winter, autumn olive is always available for exploitation. If I had the time, I'd mulch every foot path between the rows in my garden! I see no down-side to the strategy.

Over time, my harvesting of green mulch from autumn olive (or any other exotic species) should have an impact on the population on my property. I try to pull seedlings and small saplings completely out of the ground as I harvest the foliage and twigs. Removal by the roots is out of the question, however, for large specimens. So far, I've managed to reduce several large shrubs to a few coarse branches, but these continue to sprout new shoots. In fact, these vigorous sprouts make excellent mulch; the stems are tender, the leaves are large and harvesting of biomass goes quickly. Perhaps, eventually, I will wear down these large specimens. In the meantime, persistent clipping of ultimate branchlets has the effect of removing these particular plants from the local gene pool — they no longer flower nor make fruits, so they, at least, are not contributing to local spread of this scourge.

(See *Exotic mulch*, page 8)

• Forest plan

(Continued from page 2)

fers to uses which are compatible with desired conditions and objectives. Special areas are places set aside either by statute or administrative decisions for unique characteristics, such as wilderness areas.

The plan revision was launched in early March with a series of workshops involving dialogues between users and the forest service as well as between a variety of users. Many types of people enjoy the forest from those harvesting timber to those studying rare flora and fauna. The four-wheeler set enjoys being in the great outdoors as much as the backcountry hiker and the hunter and angler. The forest service wants to hear from everyone as it begins to balance the needs of various users against the environmental and habitat needs of this public land.

In the meetings, which have been very well attended, a short presentation about the need for change within the plan was followed by small group discussions. The groups of 15 or so people were asked to provide input regarding things they liked about the forest and how it was managed and things they did not like. Everyone was encouraged to read the plan at www.fs.fed.us/r8/gwj and provide additional feedback.

The plan timeline continues with more public meetings from May to August focusing on issue resolution. In November the proposed plan will be released for public comment. A 90-day comment period will follow the release. From February until June 2008 the forest service will respond to comments and then update the plan from June to July. That will be followed by a 30-day objection period in August 2008 and a final approval in September 2008.

For members of VNPS, this is a rare and welcome opportunity to weigh in on how we want our forest managed in

a healthy, environmentally sensitive manner. The forest protects our natural resources, such as water, air, flora and fauna; contains many cultural and historic resources; and provides healthy outdoor recreational opportunities. Read the plan and come to the meetings. Provide feedback about whether or not you feel our native plants are getting proper attention and whether or not our rare habitats are adequately protected. This plan will dictate actions on the national forest for decades to come. Remember it's your forest. The time to be involved is now.

Nancy Sorrells, VNPS Bulletin editor

• Exotic mulch

(Continued from page 5)

The term "green mulch" needs some brief discussion. As discussed above, I am using the term for freshly harvested biomass emphasizing the presence of green leafy tissue to be used as a mulch. Interestingly, the term does not appear in my trusted copy of *Wyman's Gardening Encyclopedia*, nor does it occur in *Hortus III*. However, the term is widely used on the internet where a Google search for "green mulch" (with the quotation marks) will return over 9,000 links. Unfortunately, "green mulch" on the internet means many different things. I have found the same term used to describe: 1) any living groundcover (like *Pachysandra* or *Ajuga*); 2) fresh-out-of-the-chipper wood chips (conceptually similar to "green," freshly cut, wood); 3) various mulch materials artificially dyed green; and 4) any mulch material that is by any stretch of the imagination environmentally friendly and, hence, "green." I like my use of the term because exotic green mulch is green in terms of color, freshness of harvest, and environmental benefit.

A future installment will focus on garden poles.

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