GREEN HORIZONS

Vol. 6, No. 3 News for people who take their trees seriously Winter 2001

Tap into niche market for large Christmas trees

There is a growing niche market for large Christmas trees. Older homes and some newly-constructed ones have either vaulted or cathedral ceilings that can accommodate trees considerably larger than the traditional average of 6 to 7 feet. These homes present a market that many growers may be missing, either because of the species they grow, the area of their plantation (it takes more land to grow a 12-foot tree than one only 6 feet tall), or because of the extra labor involved.

It is not uncommon for a homeowner with a large cathedral ceiling to want a tree from 14 to 16 feet tall even though it is more costly. There also are businesses, churches, banks, restaurants and a variety of other potential customers with similar demands.

Most growers in the Midwest rely heavily on Scotch pine. While Scotch pine, when properly manicured, makes a fine tree in the smaller sizes — up to 8 feet — most cultivars do not retain bottom branches well when getting into the larger sizes. A 9-foot tree, for example, will be thin at the bottom which is an undesirable trait for a Christmas tree. Spruces, Douglas fir, and the true firs in Missouri have shown limited success. Pines, however, are another possibility such eastern white, Austrian, or red (some folks refer to it as Norway pine).

Eastern white pine makes a beautiful tree, with the shape desired, and a dense crown if shearing commences at an early age. It has

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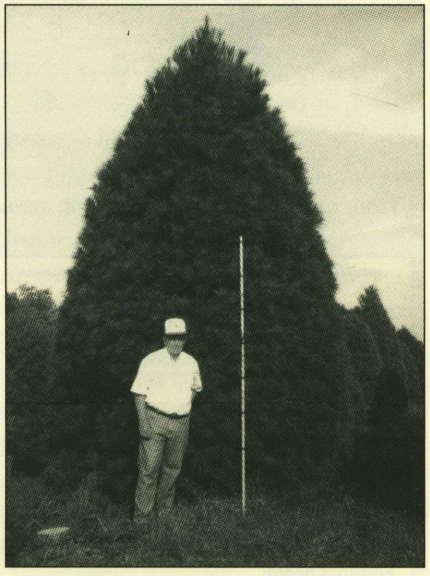

Clell Solomon of Tannenbaum Farm, Armstrong, stands next to a 15-foot eastern white pine (measuring pole is 8 feet). Customers seeking large trees provide a niche market for Christmas tree producers.

Grazing cows in a walnut agroforestry practice

Results from on-farm research

In 1999, Larry Harper received a grant from the North Central Sustainable Agriculture Research and Education program in cooperation with researchers from the University of Missouri Center for Agroforestry. The primary objective of the project was to determine the amount and type of damage that cattle would inflict on a black walnut plantation. Two secondary objectives were whether soil compaction would be an issue and to demonstrate the potential profitability of a silvopastoral practice when compared with production of hay between the tree rows.

The demonstration took place at HarperHill Farms located near Butler. The site selected for the demonstration was 15 acres, with trees from 12 to 15 years of age. The trees were planted 40 feet between the rows and 20 feet between the trees within the rows. Nearly all are grafted to improved varieties. However, a few trees had not been grafted in order to compare production characteristics. All trees received 60

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MDC Peck Ranch hosts Karkaghnae Club meeting

At a recent Karkaghnae Club meeting, members visited the Missouri Department of Conservation Peck Ranch near Winona, Mo.

John Tuttle, MDC forester and Don Smith, MDC wildlife specialist, led the group on a tour as they viewed several projects, including the restocking of wild turkeys, a study of whitetail fawn mortality, a study about the range of free-traveling bobcats, various wildlife plantings and food plots, and methods to deal effectively with red oak decline in the Ozarks. Details were presented on the MOFEP project, a 100-year project to determine the effect of various forest practices on the well-being of all forms of flora and fauna in the Ozarks, and on the hydrology of the area as well.

For more information on the Karkaghnae Club and its monthly forestry-related activities contact Karl Wolf, 17212 Thunder Valley Rd., Eureka, MO 63025; or e-mail him at: *KarlR22@aol.com*

Newsletter deadlines

Because your newsletter must be in the mail at least 30 days before the next organization meeting and another three weeks is needed to get it ready and through the printing process, the deadline for the next issue is:

February 15, 2002

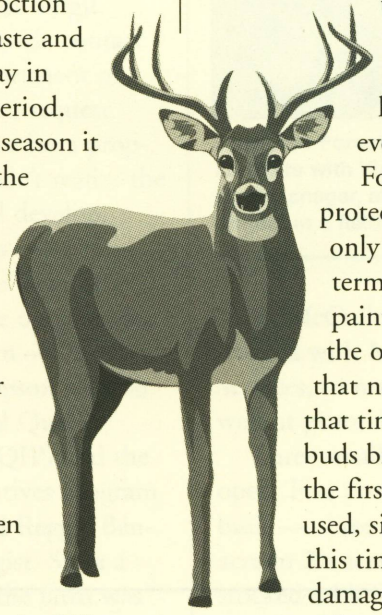
Send your newsletter material to: Sandy Hodge, 203 Anheuser-Busch Natural Resources Bldg., Forestry Program, University of Missouri, Columbia, MO 65211. Phone (573) 884-6729.

Your management tips, ideas and experiences are most welcome!

Home-brewed deer repellent proves effective

An effective deer repellent spray was reported by Dr. Larry Severeid, host of the national meeting of the Walnut Council in LaCrosse, Wis. this summer. The concoction has both an offensive taste and smell and appears to stay in place for an extended period.

During the growing season it needs to be applied to the unsprayed new growth, and after extensive rainfallit should be reapplied. It is effective for controlling spring, summer and fall deer browsing damage.



The recipe calls for: 2 dozen large eggs, beaten in a blender, and mixed with 2 or 3 parts water. Add 2 to 3 ounces (⅓ cup) of Hinder (repellent) and 4-5 ounces (½ to ⅔ cup) of Durapel or Deer Guard (Bitrex). Severeid also adds some laundry soap or commercial surfactant.

He applies the solution with a back-pack sprayer that is used only for non-herbicide purposes. It is better to apply in the morning, when temperatures are lower, than in the evening.

For winter bud damage protection, Severeid uses only Bitrex applied to the terminal buds with a paint brush — as this is the only part of the tree that needs protection at that time. As soon as the buds break in the spring, the first solution should be used, since food is scarce at this time and the most damage occurs.

If you try this method, Severeid would appreciate hearing of your experiences by e-mailing him at: *bwtree@aol.com*

How to calibrate a backpack sprayer

1. Mark off a 1,000-square-foot area (10 feet by 100 feet or 20 feet by 50 feet).

2. Time (in seconds) how long it takes to spray this area using your normal spraying procedures.

3. Spray into a 5-gallon bucket for the same amount of time. Make sure to use the same spray pressure.

4. Measure the amount in gallons.

5. Multiply the number of gallons by 43.56 to get the gallons per acre.

Example: It takes you 25 seconds to spray 1,000 square feet. When you spray into your bucket for 25 seconds, you measure 2.5 gallons. This amount times 43.56 equals 108.75 gallons per acre.

Niche market for large Christmas trees (from page 1)

few disease and insect problems, although bagworms can sometimes warrant control. One of the major objections is that the branches tend to be rather flexible, and decorating with heavy ornaments can present a challenge. If placed in a good water-holding stand, which should be done with any tree, white pine retains its freshness well throughout the holiday season. This tree can be grown to about any size with good retention of the bottom branches.

Austrian pine has a rich, dark green color, stout branches, long stiff needles, and will support heavy ornaments. The crown will not be as dense as white pine, but the longer needles tend to make up for the smaller number of branches. There is one needle disease that attacks Austrian — dothistroma needle blight — that can be controlled. The trunk of the tree tends to be rather heavy, with heavier, less flexible branches than eastern white pine, so transporting trees of larger sizes can be more difficult.

Red pine is very similar to the Austrian pine. In fact, sometimes it is difficult to tell them apart. Branching habits are similar, needle length about the same, color very good, and they both retain their freshness well. Red pine does not appear to be susceptible to dothistroma, but the trees are very slow starters when planted from 2-0 seedlings. They are weak bud setters, often with no more than three buds formed at each cut branch.

Annual shearing of large trees is more time consuming. It can require pole-type shears, ladders if the ground is fairly level, and even mechanical support on the larger ones — such as trailers to serve as work platforms, front-end loaders, or scaffolds. Pricing of the trees must take into account the added effort and time required to produce trees of this size, but the market is there.

— *Clell Solomon*

Grazing cows in walnut agroforestry (from page 1)

pounds of nitrogen in the form of ammonium nitrate in April of each year prior to grazing.

In April of 1999 and 2000, 25 steer calves weighing an average of 585 pounds were purchased and placed on the grass. The acreage had been divided into paddocks of 1 to 2 acres, using single-strand electric polywire, which could be moved by rolling it on reels so that only a limited amount of fencing was necessary. The electric fence was powered by a low-impedance charger commonly referred to as the New Zealand system of electric fencing. All 25 steers grazed a single paddock for about one day and then rotated to the next paddock. With 18 paddocks, they would be grazing each paddock every 18 to 24 days, depending on the forage regrowth. The management-intensive grazing system was chosen for its potential of reducing animal traffic and exposure of trees to damage as well as its other potential benefits to both trees and forage.

Steers were short-grazed for only 100 days and sold the first week of August. They received only forage, salt and mineral. A pour-on treatment was applied before they entered the grazing system to discourage external parasites and corresponding tree rubbing. Flies were controlled with insecticide ear tags.

In the third year of the study, 2001, the forage between the rows was harvested for hay and sold to compare profitability of grazing versus harvesting. The forage between the tree rows consisted mostly of smooth bromegrass with some legumes.

The results are in! At most, it was found that the grazed trees may have diameter growth suppressed by only 20 percent to 25 percent. It appears that in a management-intensive grazing practice, height growth is not affected by cattle grazing. Miscellaneous physical damage to trees was noted. A few trees (seven out of 116) were killed by the cattle. All were less than 4 feet tall when the cattle entered the grazing area. The most prevalent cause of damage was rubbing, especially to alleviate the effects of face flies. Cattle browsed branches from the trees, which seemed to be more mischief than hunger. This browsing did cause damage by ripping off strips of bark with the small branches, although most of the wounds have healed. An overall browse line was noted at about the 5-foot height.

Cattle graze between rows of walnut trees at HarperHill Farm in Butler. Larry Harper just completed a two-year study on the feasibility of grazing cows in walnut plantings.

From these observations, it can be concluded that trees must be 10 to 12 feet tall and have a diameter of at least 3 inches if they are to be safely grazed with cattle of this size. To overcome the browsing effects and stripping of bark, it might be wise to prune the trees to at least the 5-foot height. That would leave half or more of the crown in place as is generally recommended by most foresters. Other trials have shown that when a single strand of electric polywire is placed 4 feet on either side of the tree row, grazing can begin immediately after planting. Cost of the electric fencing is reasonable, especially when rolled on reels and moved with the cattle from paddock to paddock.

In terms of profitability, cattle will be more profitable than selling the hay crop, in most years. During the two years of experience with this project, HarperHill Farms recorded a gross profit per steer of between $50 and $75. Since less than 1 acre (.84 acre) was required per steer for the grazing season, this figure can be translated into a $60 to $89 gross profit per acre. This profit figure does not include costs of land, labor or fertilizer. Land and fertilizer costs are charged to the primary enterprise of growing trees for nuts. Labor was not charged because the same labor used for 25 steers could suffice for a herd of 100 (even 300) head under a management-intensive grazing system.

Short-grazing steers can be a most complimentary enterprise with a black walnut or other nut production agroforestry system. By removing the cattle the first of August, the grass has ample time to recover before nut harvest in September. The manure has time to dry and disappear so it will not affect nut quality. And, the cattle price trends for the past 20 years show that selling 750- to 800-pound steers the first week of August avoids a traditional late summer price slump. It also is advantageous because the cattle are not carried through the August gain slump, or even reversal. Plus, at $12 per acre

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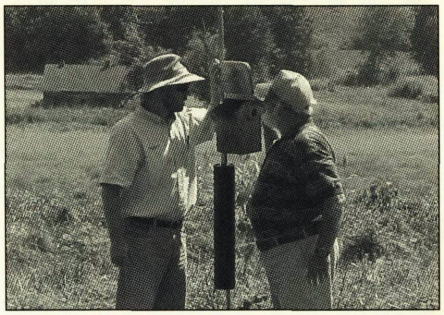
Cooper County farm manager leverages resources

Farm manager capitalizes on technical assistance and incentives funding to leverage landowners' resources

When farm operator Virgil Brengarth first made contact with the Missouri Department of Conservation in 1998 to request farm planning assistance for a property he managed, he didn't realize the relationship that would develop.

Brengarth wanted to enter the approximately 400-acre farm in Cooper County that he operated for two Columbia area men — Tom Smith and John Thompson — into USDA's Environmental Quality Incentives Program (EQIP) and the Wildlife Habitat Incentives Program (WHIP). He contacted Reggie Bennett, MDC area biologist. Soon a management plan for the farm was developed and ranked to determine if it would be eligible for the programs. Once approved in 1998, conservation practices were implemented on the property, some with cost-share, some without.

Brengarth continued to call upon MDC for assistance as he implemented the plans. With a substantial portion of the forest cover on hillsides adjoining farmed bottoms, there were black walnut trees on the lower slopes in need of management. Fred Crouse, consulting forester and



Resource Forester Terry Gordon (left) consults with Virgil Brengarth (right), farm manager, about a CRP tree planting project in a field full of sinkholes.

Mark McCulloch, resource forester, worked with MDC's Private Land Services, to mark a 20-acre parcel for walnut pruning and release.

Three small wetlands were developed. Five ponds/small lakes were built — three of them between 1 acre to 2½ acres in size — and stocked with fish.

Several other open-land management practices were installed with help from Phil Rockers, private land conservationist. These included two glade restoration projects, reduction of woody cover and prescribed fire. Brengarth and the owners were delighted to report that "three or four native warm season grasses were rejuvenated along with a half dozen or more wildflowers and forbs." A prescribed burn on over 100 acres of fescue pasture was also implemented to reduce litter and make the site more suitable to the establishment of legumes in the cool season grass to increase its benefit to both wildlife and livestock.

Besides wetland construction, landowners Thompson and Smith have built and installed numerous wood duck boxes in the riparian areas of the farm. The owners have an interest in migratory songbirds as well and have built and installed over 200 bluebird nesting houses. MDC's Woodworking for Wildlife plans were used to construct the boxes.

This spring, Terry Gordon, resource forester, coordinated a CRP tree planting project comprised of 88 acres and 37,800 trees. The plantation was installed in a field that was almost entirely sinkholes in a karst topography. Most recently, Brengarth has been working with Robin Tillitt, MDC fisheries biologist, on stream stabilization projects on the farm. Another CRP tree planting project will establish or expand the riparian forest along a 1½ mile stream frontage. A 100-foot cedar tree revetment will be installed, as will a reinforced stream crossing.

Read *Green Horizons* on the World Wide Web at:
http://agebb.missouri.edu/agforest/

Grazing cows (from page 4)

per mowing, there is a considerable contribution to the bottom line.

In 2001, the forage was baled for hay and sold. The hay yielded 2 tons per acre. Half the hay was given to the custom hay operator to pay for harvesting. The other half was sold for $45 per ton. This was a gross profit of $45 per acre without land or fertilizer charges.

This research demonstrates that it is practical to combine steer grazing with a black walnut agroforestry practice. Potential damage to the trees by the animals can be overcome by management techniques. Slight decreases in growth of the trees are more than offset by the income potential of the cattle operation, especially in the early years when there is no income from the nut crop. Hay can be harvested during years when cattle aren't the most profitable option.

For more information on this study, contact Larry Harper at HarperHill Farms, Inc., 908 Danforth Dr., Columbia, MO 65201; (573) 442-5326; or e-mail: *lharper@tranquility.net*