

AN OPPORTUNITY FOR PROFIT FROM WASTE WOOD

by Allan Marsinko

Abstract. A firewood lot was operated for two days in order to dispose of waste wood which typically consisted of large unsplit and forked pieces. Customers loaded their own vehicles, splitting the wood when necessary. At \$10 per pickup truck load, the lot generated \$1,230 in gross revenue during its two days of operation. The nature of the wood and the purpose of the lot have potentially profitable implications for arborists.

An earlier article by Marsinko (2) discussed the possibility of disposing of wood from tree clearing operations by selling it as firewood. The article concentrated on the cost aspects and suggested that, even in the worst case, many arborists could save money by giving away this wood rather than hauling it to a dump. Some additional information is now available which shows just how profitable selling this wood can be.

A Case Study

The 1984 Journal article suggested a wood lot where customers pick up their own firewood (thus eliminating delivery costs). The Clemson University Forestry Club did just that, albeit unintentionally. The Forestry Club sells cut and split firewood, delivered (and stacked) for \$45 per face cord. Some of the wood comes from the Clemson Forest and some comes from trees that had been growing on campus and were removed for various reasons. This year, quite a bit of their wood came from the campus trees. These are mostly large, open grown, shade trees typical of what an arborist would encounter in his work. Species groups included oaks, tulip poplar, and pines. This particular group of trees contained many forked pieces and many large pieces that were difficult to split and handle. Some of the wood was of such poor form that, even when split, it was rejected by customers.

The club delivered all of the wood that was acceptable to their customers. The remaining wood (which consisted mostly of large unsplit pieces and forked pieces) was left on the lot and advertisements were placed in the campus newspaper

and a local weekly newspaper stating that the lot would be open one day only and that people could pick up wood for \$10 per pickup truckload. The advertisement appeared in the local weekly newspaper on Wednesday and the campus paper on Friday and the lot was open Saturday, January 18, 1986. With a notice in a newspaper that is distributed mostly to college students who don't need firewood (less than 4000 copies are delivered locally to non-students) and in a local small town paper with a circulation of 4200, the club sold 87 loads of wood on Saturday. There was still some wood left over and the club used a similar approach to repeat the sale on February 1, 1986, this time advertising in only the campus paper. This time the weather was warmer and the wood was even less desirable than before, having been picked over during the earlier sale. The club sold 36 loads and the lot required only one attendant.

Most of the people who came to gather the wood brought splitting tools and some brought chainsaws. In other words, they expected to do some work other than picking up pieces of wood and placing them in their trucks.

The Opportunity

The Forestry Club's experience indicates that an opportunity exists. People will pay for poor quality wood even if they must process some of the wood. Also, a firewood lot can operate so that it is only open when necessary, thereby reducing costs. There are several factors which must be considered if such a lot is to be operated. These factors include the cost of the lot, its location, accessibility, security, liability, marketing, price per load of wood, species of wood, and timing.

The cost of the lot, its location, accessibility, and security are the key factors which, when considered together, determine the potential profit and likelihood of success of this venture. Ideally, if the arborist already owns an accessible lot that is located so that people can be easily directed to it,

his costs will be very low. This type of firewood operation is ideally suited to a lot purchased for speculative purposes (e.g., a lot purchased for future use or resale could be a temporary firewood lot). Likewise, a lot purchased by someone else for speculative purposes could be rented by an arborist as a temporary firewood lot. The market is not stable enough to justify long-term commitments such as long-term leases or purchases involving long payout periods. The lot used by the Forestry Club is an old, fairly level field which is visible from a road and is accessible by a paved drive. The lot should be smooth enough to accommodate cars with trailers. Although theft is not a significant problem, security is important because it allows you to open the lot only when necessary, for example when you accumulate enough wood. This reduces the cost of lot attendants. A fence or gate restricting access should be sufficient. The lot used by the Forestry Club has no gate or fence but is on campus and is patrolled by campus police.

Liability must be dealt with and is probably best handled in consultation with an attorney and insurance adviser. The Forestry Club's lot attracted some obviously inexperienced people. Processing firewood is hazardous even for experienced people. Methods of reducing liability vary from state to state. Therefore, specific methods won't be discussed here.

The Forestry Club put very little effort into marketing, simply taking out classified advertisements in local newspapers. The ads stated the time, the place, and the price and very clearly stated that the lot was open one day early. Although a rain date was not included, it should be. The college newspaper has very limited distribution off-campus. Being a small newspaper, its classified section is not subdivided. The section is labeled "classified." Anything can be sold under this heading and the Forestry Club advertises its regular firewood business here (\$45 per face cord delivered). It is a very small section in the paper, usually containing fewer than 20 advertisements. The other newspaper is not much different in this respect. Its classified section is oriented more toward real estate and it occupies several pages. It also lists automobiles separately. Everything else, however, is sold under a "For

Sale" heading (and there were only 5 ads under this heading during one typical week). Although there was no reason for anyone to look for a firewood advertisement in the paper, people apparently read this section as a matter of course. In other words, this was not advertised in a place where only those people interested in buying firewood were likely to read, but it was advertised where people read on a regular basis. This approach to marketing should be investigated by anyone considering this type of enterprise. If the firewood lot is going to be open only once in a while, an advertisement placed in a small local paper or bulletin (or a local radio station) could produce better results than an advertisement buried in an "energy supplies" section of a large daily newspaper with a multipage classified section. The latter is oriented toward people purchasing firewood at their convenience. The former may be better at convincing people to purchase firewood at your convenience.

Pricing should remain flexible. The Forestry Club set a base price of \$10 per pickup truck load. For vehicles larger than pickup trucks, the price was negotiated. The Clemson Forest manager has more experience than the Forestry Club in this area. He operates a firewood lot on which firewood users cut standing timber. His prices are advertised as \$10 per half ton pickup truck load. People with $\frac{3}{4}$ ton trucks, dual wheel trucks, and racks that increase the capacity of the truck are charged more. People with small trailers and those who wish to fill the trunk of a car or back of a station wagon are charged less. A person filling the back of a jeep was charged \$3. Usually people with small pickup trucks were not charged less. Surprisingly, there were not many complaints about this. Flexible pricing requires either a skilled operator or a posted price list (perhaps with photos of loaded vehicles) to maintain consistency. Selling wood by weight would be more efficient if a scale were available.

The price of \$10 used by the Forestry Club may have been too low. A price of \$12 or \$15 might not discourage too many purchasers. Or, a multi-price approach could be used if wood is accumulated and then the accumulation is sold without adding more wood. For example, the first sale could be advertised at \$15 per load and

subsequent sales could be advertised as "leftovers" at \$10 per load. The specific prices discussed here are appropriate for similar areas where a cord of cut, split, and delivered wood sells for \$80 to \$90; pickup loads of cut, split, and delivered wood sell for \$30 to \$45; and logging truck loads of delivered logs sell for \$35 to \$50 per cord. If firewood in your area sells for higher prices than these, you should be able to sell your wood for a higher price than \$10 or \$15 per pickup load.

In most areas, certain species are favored for firewood. In this area, oak and hickory tend to be the favorites. The Forestry Club's lot contained pines, oaks, some other hardwoods, including tulip poplar. Many firewood gatherers can distinguish between pines and hardwood but not between different hardwoods. Some people walked around to different pieces of hardwood trying to split each piece. When they found one they could split, they took it. Species did not seem to be as important as being able to split it. Some people loaded their trucks with pine. Some loaded their trucks mostly with hardwoods and then topped them off with pine. Although pine was not particularly popular, it was encouraging to see some people buying it. In this area, almost all delivered firewood is hardwood. The fact that some people were knowingly buying pine indicates that there may be a market for it in this and similar areas if it can be sold for a low price.

Timing can be important. The wood should be sold before it becomes piled high enough to be dangerous. It should not be left on the lot long enough to become infested with insects. Rotted wood is inevitable in this type of operation and some will be sold. Sales are somewhat dependent upon the weather. The first cold snap in late summer or autumn is a good opportunity to sell wood accumulated over the summer. Opening the lot right after an article on firewood or woodburning stoves appears in a newspaper should result in good sales. Efforts should be made to clear the lot before spring.

Revenue and Costs

The Forestry Club's gross revenues totaled \$1,230 for the two days. The benefits and effective gross revenue for an arborist operating a

similar lot could be significantly higher than this. In addition to the firewood sales, an arborist who had been paying to dispose of his wood could eliminate most or all of this cost. Fees paid to a landfill and any additional hauling cost associated with transporting the wood to the landfill would be reduced or eliminated. This has the effect of increasing the gross revenue. In this case, the gross revenue becomes the revenue from sales plus the portion of cost that has been eliminated. The cost savings can be estimated by estimating the volume of wood sold. Considering the total number of loads sold (123) and using conversion factors from Marsinko and Wooten (1) slightly over 230 cubic yards of wood was sold. At a disposal cost of \$0.90/cubic yard, an arborist saves \$207 plus additional hauling costs. Therefore, his gross would be \$1,437 ($1230 + 207$) plus hauling cost savings. If the firewood lot was farther than the landfill, then the hauling cost differential would be a cost rather than a savings and should be subtracted from the gross revenue (i.e., $1230 + 207$ minus the additional hauling cost).

Costs include lot preparation and/or rental, advertising, attendants' wages, and potentially attorney's fees and increased liability insurance premiums. Some minor bookkeeping changes would occur, which could result in an additional cost. Because these costs, particularly costs associated with the lot and liability can be extremely variable, they won't be estimated here.

The timing of the costs and revenue is important. Revenue occurs periodically. Some of the costs, such as lot preparation, bookkeeping changes, and initial attorney's fees are non-recurring. Others, such as attendants' wages and advertising occur periodically with the revenue. Lot rental and insurance costs have the potential to become fixed costs, costs which are constant regardless of the quantity of wood sold. Therefore, an arborist's potential profit from an enterprise such as this can probably best be estimated by using average annual waste wood available and comparing expected annual revenue to expected annual cost.

Conclusions

A firewood lot which is advertised and opened

intermittently as excess wood from arboricultural operations accumulates can be more than a way to dispose of excess wood. It can be a profitable venture for arborists who are operating under the right circumstances. It is definitely worth investigating.

Literature Cited

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Assistant Professor
Department of Forestry
Clemson University
Clemson, SC 29634-1003

Abstract

FEUCHT, J.R. 1986. **Wire baskets can be slow killers of trees**. Am. Nurseryman 163(6):156-159.

Few argue with the fact that wire wrapped around the trunk of a tree will eventually strangle it. Yet wire that wholly or partially restricts roots does not seem to concern many landscape architects, landscape contractors and nurserymen. Indeed, planting specifications often require that the wire mesh be left on. The reasoning behind this seems sound; it is thought that the wire will soon break down, and the large mesh of modern tree baskets won't interfere with growth. Unfortunately, human logic and actual results are two different things. Wire mesh buried in soil for more than 15 years has been found to remain strong enough to cause root restriction, even though it is corroded. In heavy clay soils that are low in oxygen, wire may not show the slightest corrosion even after years of burial. Wire in better aerated soils, such as sandy loams, will corrode, but it will remain a barrier to root expansion for a decade or more. As a root enlarges, it does not pull away from a wire, nor does it push the wire out of the way. It will enclose the wire the same way a limb or trunk will enclose a barbed wire fence that has been nailed to it. Once the root tissue grows over the wire and the edges meet on the other side, union of the tissues cannot occur because there is no cambial contact. Thus the vascular system of such roots becomes partially restricted. While partial restriction may not seem to be a problem in small roots, the real injury occurs when the surface scaffold or main brace roots (the root flare) become restricted. Avoiding the problem of partial root restriction is easy. Angle-bladed bolt cutters should be used to remove the wire completely from the top 10 to 12 inches of the ball. The cutting is best done after the tree is placed in the planting pit and partial backfilling has stabilized the ball.