

WT&T  
PROFILE

# THE CONTRACT APPLICATOR MARKET



# WEEDS TREES & TURF SURVEYS THE CONTRACT APPLICATION MARKET

What types of contract chemical application service does your company provide?

Type of application	Percentage performing this type of application
Residential lawns	70
Commercial property	68
Industrial property	56
Municipal	14
Agriculture	13
Utility Rights-of-way	13
Nurseries	13
Golf courses	13
Orchards	11
Tree farms	8
Highway rights-of-way	8
Railroad rights-of-way	7
Sod farms	5

WEEDS TREES & TURF conducted a readership survey of our readers involved in the contract applicator business. Of those readers, 87% were involved in ground application of chemicals. Six percent did aerial application and seven percent were involved in both ground and aerial.

We found that our readers in this category handle approximately 3,000,000 accounts, covering some 380,000,000 acres. The annual gross revenue from contract spray application was projected to be 921,000,000. The median was \$40,000 in a range of answers from \$300-\$10,000,000.

The businesses themselves ranged in age from new to 70 years, with the average age being 17 years.

Most of these businesses have 1-3 employees, however, some employ as many as 200. The average annual salary of these people was \$12,640. This figure was inflated somewhat by single owners of companies, who tended to pay themselves very well. The median salary was \$10,500.

Sixty-eight percent of the employees were company trained. Only 22% of the employees were college

Type of Applicator	Percentage of contractors using that type
Liquid tank spray truck	74
Dry spreader	48
Boom sprayer	23
Mistblower	10
Aerial	10
Hand sprayer	3

## WTT SURVEY

trained, with 3% being trained by the state extension service and five percent trained by the owner of the company, himself.

In asking how many full-time employees had passed a state or federal certification test for restricted chemical application, we got answers most often in the range of one to five. There was no pattern to the responses, however. Some com-

panies would have no certified employees, some would have all certified, some had only a fraction certified.

Equipment value was projected to be \$504,000,000 with a range of \$200 to \$4,000,000 worth of equipment owned by any one contractor.

Annual chemical expenditures are projected as \$205,486,000 or roughly 22% of gross revenue. An-

nual equipment expenditure projections could not be made due to a lack of responses to this question. The varied periods of useful life of equipment also made such a projection unreliable.

Survey results were obtained by estimating the contract applicator market at a modest 4,333 firms.

EQUIPMENT	Small Companies		Medium Companies		Large Companies		Total	
	No. Owned	No. Plan To Buy	No. Owned	No. Plan To Buy	No. Owned	No. Plan To Buy	No. Owned	No. Plan To Buy
Fixed Wing Aircraft	—	—	270	60	730	90	1,000	150
Liquid Chemical Applicators	4,360	760	1,600	210	6,600	240	12,560	1,210
Granular Chemical Applicators	3,640	360	1,790	120	1,500	270	6,930	750
Spray Tanks	3,060	1,060	1,640	60	2,240	330	6,940	1,450
Hose Reels	2,670	520	1,450	210	1,900	330	6,020	1,060
Complete Power Unit Sprayer	2,180	240	450	—	2,550	270	5,180	510
Pumps:								
Centrifugal	790	120	2,550	60	1,820	425	5,160	605
Piston	2,940	300	1,200	90	3,120	60	7,260	450
Utility Trucks	2,760	580	700	120	1,490	90	4,950	790
Tractors:								
8-12 H.P.	970	—	490	30	120	—	1,580	—
21-60 H.P.	970	—	180	30	1,360	—	2,510	—

Chemical Supply	Small Company Annual Purchases	Medium Sized Annual Purchases	Large Co.	Total
Dry Fertilizer	\$33,000,000	\$22,700,000	\$ 4,000,000	\$59,700,000
Liquid Fertilizer	8,800,000	3,800,000	6,600,000	19,200,000
Post Emergence Herbicide	13,600,000	5,500,000	36,000,000	55,100,000
Pre-Emergence Herbicide	5,170,000	7,300,000	16,500,000	28,970,000
Insecticide	12,900,000	4,700,000	17,400,000	35,000,000
Systemic Fungicide	350,000	354,000	175,000	879,000
Contact Fungicide	711,000	1,126,000	4,800,000	6,637,000

Small companies are those with an annual gross revenue of up to \$75,000.  
 Medium companies are those with an annual gross revenue ranging from \$75,001 up to \$250,000.  
 Large companies are those with an annual gross revenue of over \$250,000.

## SMITH'S LAWN & TREE INC. RESIDENTIAL, COMMERCIAL CONTRACT APPLICATION

Three years ago, Smith Lawn & Tree Co., Inc., Kansas City, Missouri, was awarded the grounds maintenance contract for everything but the mowing at the Harry S. Truman Library and Museum at nearby Independence, Missouri.

"Not only because it's a big-money contract, we were happy to land this job for several reasons" said Jim McGee, president. "One, a job of this size puts us on our mettle

to perform at peak levels of skill. In gunning for the ultimate in results, we must use the best materials and our best people. Two, it's the kind of prestigious showplace-type grounds maintenance project that is a feather in the cap of any maintenance outfit. You say a lot to a prospect when you tell him that among your jobs is the Truman Library.

"In all phases — lawn, trees and shrubbery — the library job must be first-class," he explained. "Yet the problems are sometimes unreal. For one thing the library is open seven days a week and tourists are constantly strolling the grounds. That means we must exercise care in spraying. We have to spray on a piecemeal program, hitting the areas where there are no crowds when we can.

"In a job like this, as in all others, you follow safe spraying practices, putting materials on the grounds with minimum harm to plants, human beings and animals. We're a safety-oriented company and we've worked hard to earn a reputation for proper spraying."

In a discussion of the Truman Library account, which embraces seeding, spraying, fertilization, aeration and trimming on the 15-acre site, McGee stresses that, in the struggle to get everything ship-shape, sometimes something gets overlooked. His briefings to employees who work the library jobs stress the need to keep on the alert for any special problems, to employ preventive medicine.

But every-now-and-then something slips up and gets even a well-established 32-year-old company in a pickle. What happened at the Truman Library was that one day checking out the trees McGee spotted a heavy infestation of bagworms on a set of 40 foot Locust shade trees in

Jim McGee (left), president, goes over the details of a job with foreman Keith Hubbard. Some landscape design is performed for commercial customers.



**SMITH'S LAWN & TREE**

the parking lot. To remedy the situation, employees trimmed and pruned the areas in which the bag-worms were attached.

"It's funny, and a source of embarrassment," said Mc'Gee, "but our people were so busy doing a good job trimming and keeping up the shrubbery and grounds they had forgotten to look up. But this is a learning process for our people and you can bet they'll look up from now on and spray before trouble occurs."

You won't find many such incidents in the tenure of the company. With a customer mix that runs about 80% commercial and 20% residential, the firm has enough repeat and referral business to keep the volume on a constantly high plateau. Among the jobs the firm handles year after year are some of the leading companies in mid-America — AT&T, Standard Oil Company, and Fairyland Amusement Park. There are retirement centers, hospitals and a cluster of city and government projects in the hopper.

The firm is strong in the tree removal facet and when a tornado struck Topeka, Kansas, a few years back, Smith's was called upon to tackle some of the toughest tree removal projects created by the tornado.

The business was started by McGee's mother as a lawnmowing specialty operation. Jim joined the firm ten years after it was founded in 1946. The company was incorporated in 1966. Growth shot up and continues to edge upward each year. What started as a \$2,000 annual volume has been parlayed into about a quarter-million dollar business. Jobs range from 5,000 square feet to 25 acres.

McGee feels that the strength of the business is in its do-it-all concept, including crabgrass control, fertilization, and spraying trees and lawns against all types of insect infestations. Among recent customers are a number of home associations where treatments on parkways and islands are a main undertaking.

Tree spraying, trimming, and removal have long been Smith's specialties. The firm's equipment inventory includes a tree mover, stump remover, aerial platform-trailer (a \$75,000 rig), log loaders and 12 trucks ranging from station wagons to 2½-ton vehicles.

For spraying the firm has 50-gal-

lon and a 100-gallon fiberglass Myers tanks operating with gasoline-powered pumps and motors and a 300-gallon tank made by the Kim Manufacturing Company in Kansas City. The latter was custom-made for the firm, is built of aluminum, and builds up to 400 psi. It frequently doubles in brass as a root feeder.

In hand-picking the company's roster of chemical products, McGee says he has one over-riding guideline: Stick with the safest on the market. Included on the agenda are Sevin, Dursban, Dacthal, Dyrene, Dactonate, and Diazinon.

Only four people in the fulltime organization of ten employees are authorized to handle the spraying detail. They are licensed sprayers in the states of Missouri and Kansas. Kansas City sits on the border and licensing in both states is necessary since the firm has customers on both sides of the line. The Kansas licensing laws, according to McGee, are the most rigid and detailed and he thoroughly approves of them.

"In our company," he says, "we go to unusual lengths to follow safe spraying procedures on trees and lawns. It seems to be a tendency of sprayers to over-dose and we work on that problem. Yet I recognize that under-spraying can be a problem, too.

"In this area, we've had to battle the Elm leaf beetle the past four or five years and these are nasty little insects which cause severe defoliation of the trees. Sometimes there is a tendency to jump in and spray these trees with a chemical when merely hosing them down with water will alleviate the situation. The hosing-down treatment also works on aphids sometimes. We'll use it in place of a chemical if we feel it will get the job done."

Keith Hubbard, foreman, whose experience embraces stints with Lawnmaster, Inc., a chemical spray outfit, and managing a store of the Earl May Seed & Nursery for six years, is also a strong advocate of safe spraying practices. He feels it is important to exercise care in measuring the quantity of materials used, in establishing the application rate, and the pressure of the application.

He says: "With our company, it is standard practice to fully inform each customer of the treatment measures we're taking on his lawn, trees

"It is very essential to eliminate any communication gap between us and the customer" . . .

or shrubbery. This applies to both commercial and residential customers. We want them to know exactly what materials we're using, why we selected them, any special problem they entail and, most of all, we want them to understand their role in achieving optimum results. That means making any followups that will help results.

"It is very essential to eliminate any communication gap between us and the customer," he believes. "We try to lay everything possible on the line to the customer. The tendency with some companies is to go out and lay down a spray, take off and then bill the customer. That's it. Sometimes they leave a written message in the mailbox giving brief information on the treatment. We want more than that — we want verbal dialogue so we can answer any questions the customer may have."

A stock of chemicals is purchased in the spring to kick off the season and the remainder is purchased on an as-needed basis for the rest of the year. Though he agrees he could achieve economy in buying by placing large pre-orders, McGee doesn't capitalize on it because he doesn't care to maintain large backup inventories. The products are bought from four suppliers in Kansas City and any items needed can be delivered within one or two days or picked up in 30 minutes. The products are stored in a dry room with a locked door with warnings to stay out and "Poison" posted on it. "We don't want to experience any problems with fire or break-ins by keeping large stocks of chemicals," McGee said.

Both commercial and residential customers are billed once a month. Though some customers are serviced once a week, only monthly billings are made.

In pricing and estimating jobs, McGee says he simply computes the amount of space involved with the materials and arrives at what he feels is a reasonable fee. In many instances, he is able to eyeball the site and determine whether it runs 5,000 or 10,000 square feet. He points out that the space involved isn't always the key in estimating the price of a commercial job. Whether large equipment, which will permit handling the project more efficiently and quickly, can be moved in is a big determining factor.

Regular attendance of employ-



**This 300-gallon spray tank, custom made for the firm by a Kansas City manufacturer, is rigged with motor and pump for 400 pounds of pressure.**

**SMITH'S LAWN & TREE**

ees at seminars, schools and other symposia designed to further their education is a key element in the McGee success formula. Four members of the organization, including Keith Hubbard, foreman, and Bill McGee, son of the owner, received schooling in arboriculture sponsored by Kansas State University. This qualified them as certified arborists in that state.

Test plotting is one of several services which has enhanced the firm's reputation with both commercial

tial for business in the Kansas City market, says Hubbard, is "fantastic." He added, "It keeps zipping up." The company's ability to perform comprehensive lawn tree and shrubbery care on residential and industrial sites offers a bit of oneupmanship over others in the field, he feels. He points out that the big tree trimming, removal and spraying equipment enables the firm to tackle jobs others lack the capabilities to handle.

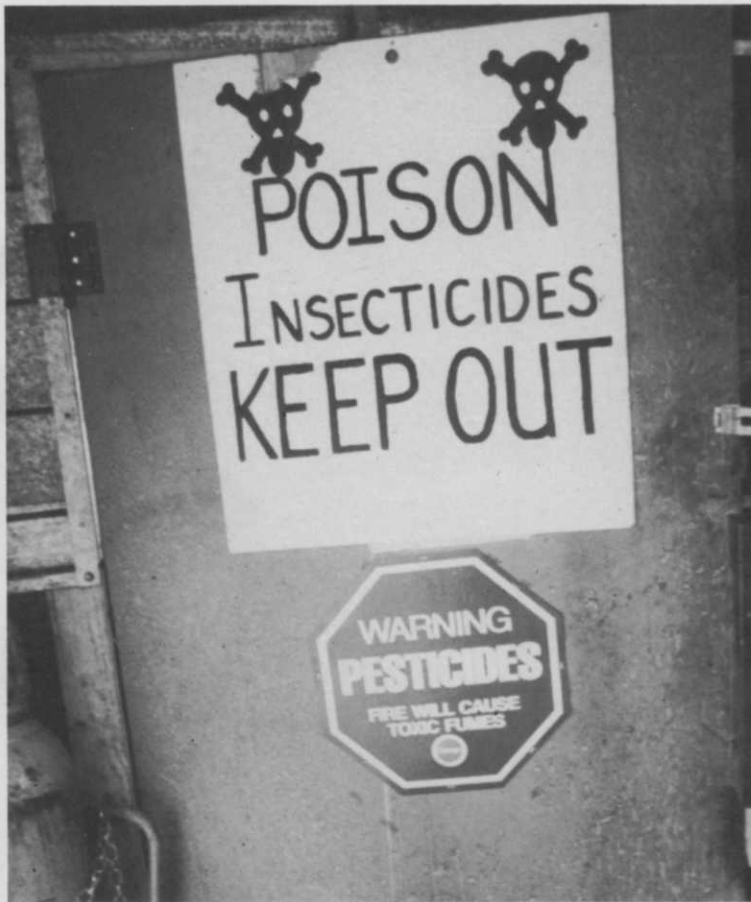
"Word of mouth advertising helps keep the machinery busy for us," he said. "We got a new apartment customer the other day, we did his work and then a few days later recieved a call from another apartment owner who had been referred to us by the first one. A beautiful chain reaction is triggered when you do quality work." "The potential in this area is unlimited," Hubbard says. "We haven't started to scratch the surface."

Problems? One big one looms up prominently, says Hubbard. It centers on a labor situation. It isn't so much the shortage of good help that bothers him, he says, because he feels he could hire top professional people if he could afford to pay them decent wages. The problem he says, focuses on the matter of customer resistance to a level of fees that permit paying salaries to topnotch people.

"This is a hassle," laments the still-young Hubbard. "To stay competitive, we have to price competitively. That seems to mean we can't charge high enough fees to pay for good labor. That means we settle for something a bit under the best and that, in turn, means we have to do one helluva job of training our people. And that sure doesn't make this business any more fun. It's one of the big challenges, buddy, it really is."

The words get around that the firm is equipped with that big aerial platform rig and this leads to calls ranging from rescuing cats from the tops of tall trees to replacing light bulbs in the ceiling of the American Royal Building, one of the city's auditoriums. Answering these calls has made the company many friends.

"You'd be surprised how many city jobs dropped in our laps because we used that big giraffe to replace those light bulbs in the towering ceiling of that building," Hubbard smiles.



**Extreme care is exercised in handling all chemicals and the dry room in which they are stored is kept locked and posted to identify contents and eliminate careless handling.**

and residential customers, says Hubbard. He's a staunch believer in the value of marking an area off in squares, measuring them carefully, treating each with a different chemical, leaving one square untreated, and then making comparisons of the results obtained. He makes careful notations of the results, takes photographs at various stages and assembles a file on the plotting. It's a routine he follows frequently on both residential and commercial grounds.

A one-word sum-up of the poten-

# FLORIDA AQUATIC WEED CONTROL AQUATIC WEED CONTRACT MANAGEMENT



Aquatic weeds grow rapidly in a nutrient medium provided by surface run-off.

The following is excerpted from an interview with Tom Latta, vice president, marketing and administration, and Elroy Timmer, vice president of operations of Florida Aquatic Weed Control, Inc.

Timmer has 14 years of experience in aquatic plant management. He was a field technician for the USDA at the Aquatic Research Laboratory, and was involved with preliminary work in testing products now on the commercial market.

Florida Aquatic Weed Control, located in Ft. Lauderdale, was incorporated in March of 1974.

*What are some of the typical kinds of equipment that you use?*

We have one air boat, 8 john boats, five trucks, and three cars, basically for our salesman. Our trucks are all four-wheel drive, pickups with large tires suitable for driving on turf, four wheel drive, so they don't spin if they are trying to pull a boat out. Every piece of mobile equipment, truck or boat, has its own spray facility, essentially to maximize our efficiency. That doesn't mean that all pieces of equipment have the capability of putting on all types of formulations. We have two pieces which are dedicated to granular materials and we have others suitable for liquids, solutions, wettable powders. If we need a boat, we do not unload spray equipment from the truck and stick it on the boat, because you lose too much time doing that. Each boat is equipped with its own equipment.

*How is your firm organized?*

The organization of the firm is on a functional line. We have market-



## FLORIDA AQUATIC WEED CONTROL



ing, operations, and administration basically. Ninety percent of our business is not application per se, but what we call aquatic management. We do what is necessary, when it is necessary, to achieve the results that the customer wants in a way which is environmentally sound. Many of our customers are golf courses. Many of them are homeowners and associations, condominiums, where they have a need for a clean, healthy body of water. Many of our problems are different in degree, from the problems you may have in aquatics in Ohio or Michigan. We have a growing season which is 10 to 11 months a year, the water here is usually shallow, and it has a high runoff nutrient ver-

The aquatic problems are pretty substantial. All this nutrient gets recycled right away into algae or plankton or microcites. Our problem is to find a way to accommodate this nutrient load. We try and push it into the fish food chain as much as possible.

We are spraying weeds, we are also trying to shift the balance of the nutrients flow from vegetation into either energy consumption by fish, or flesh, fish flesh and crustacean, all sorts of septic organisms. Spraying is an important part of our business, but we feel that the whole thrust of aquatic management is going to be moving away from just chemical applications towards a more integrated approach. I do think that the environmental and

ecological problems are accommodating all this nutrient that is discharged from rain water runoff, fertilizer runoff, and plant discharge.

*Do you advertise?*

Marketing is basically a low key kind of approach. We try to make ourself known. We do a very limited amount of advertising. We do a lot of calling where there is water, especially where there are problems, generally trying to make people aware of our capability. Once we do have some interest, we estimate in a very traditional manner what the aquatic problem is, look at the on-site condition — flow, depth, nutrient inflow, drainage area, the body of water it is receiving from, what weed conditions are there, and how hard they will be to control. In fact, before we even talk about control, we want to know what the use of the water is, what degree of control is desirable, and then how do we go about doing that. It may involve chemical treatment, mechanical message, biological control, although nothing so far has been particularly effective in the biological area. The white amur shows some promise at this point. Then we manage the process. Ninety-nine percent of our work is on long term contract. We are trying hard to maintain our position as the professional doing what needs to be done at the time it needs to be done, rather than letting the client call us to say we need to spray. The client basically is reacting to the visible signs of a lake problem and the lake problem is there before the signs are visible to the average lay person. So, we are trying to substitute our technical people with their perspective and get them inspecting what ever water is under management at frequent intervals to ward off future problems.

*Are you able then to accurately forecast so that you know in advance what problems an area of water may incur?*

Our contracts are one-sided basically. We commit ourselves on price and if the customer is unhappy with the quality of our work we just pull the plug. We have never locked a customer in. Our security is in doing a good job at a fair price. Usually

we don't go long term right off the bat, we will go one year. After one year, with our history and knowing what is happening, knowing the hot spots, knowing what is going on then, we think we can reasonably project. If you have got some wide open area and in that period they start building condominiums, and you have got 10,000 people living around the place, you bet your socks we missed it.

When you change the parameters, you change the environment. We have a condominium development where all work stopped in 73-74 and it is getting started again. For 2-3 years they had no aquatic management and they had no problems. We did a little bit of work there, just in the developed areas where there were some problems with fertilizing the lawns, etc. There was a lot of water and no problems. They asked us every so often what to do about it and we said nothing. Don't pay us — don't pay anybody. Now they are starting to develop again. The water is O.K. but they want to start getting everything under control. We've given them a proposal for a staged program so that the water areas can be brought into proper control position in parallel with the development plans as they open up the section. They

will want lawns in, driveways, parking spaces, buildings, street lighting and water. So we are integrating our work with them. We're not going out on a tree here. We are taking it as, say, expanding the program. Two years from now when all the people are living there, when the treatment plant is up to its designed capacity, when all the storm sewers are collecting run off and pouring it in the lake, we will have a day to day history on those lakes which will allow us to project and offer them a three year program. At this point it is hard to tell just what the aquatic problems will be two years in advance. We do this where we feel we can do it with an acceptable degree of risk and where we feel the risk is small.

*Because you are on these long term contract basis most of the time, are you on a retainer or consultant fee?*

No, we are on a predetermined fee and we do what we have to do. Our cost fluctuates, heavier in the summer and lighter in the winter. That is the nature of the beast. We do not charge on a what we do basis because then it gets into a vast area of uncertainty, what did you do, and should it have been done, could we

**Forsighted management could have prevented this problem.**



**FLORIDA AQUATIC WEED CONTROL**

have done it cheaper, and that sort of thing. This way, on the long term fee the customer knows what it costs as much as three years in advance.

*Do you maintain a large inventory of chemicals?*

We maintain a reasonable inventory. We do not stockpile at the beginning of the year. We have not yet become involved in responding to early order programs. We have some opportunity but we are not in the distribution business. We go through distributors that service this area. While we maintain a reasonable inventory, for our own convenience, it is also for the convenience of our operations people. We may have 60 different chemicals. Chemicals such as adjuvants formulating aids, one thing or another, emulsifiers, but some 60 different items that we may employ. We don't try and maintain \$10,000.00 of each of these. We do have to have it on the shelf when we need it, because we never can tell ahead of time what we are going to need. It all ties back to the nature of our business, which is aquatic management rather than government business. For example there may be a treatment scheduled for next May for 400 acres of hydrilla, where at this point you need so many gallons of chemical X and so many gallons of chemical Y so you purchase it in that fashion. We cannot anticipate our problems in that fashion because we don't get that heavily into that segment of the business.

*What is the market potential for your firm?*

That is a toughie. I would have expected that there be a pretty substantial market potential for people involved in aquatic management the way we approach it. There are quite a few people involved in spraying and I would say the market potential for spraying is kind of limited. There is accumulation of chemicals, most of the chemicals being used today are pretty well inspected as far as safety and environmental standards. There is a legitimate concern about indiscriminate use of chemicals in other states and Florida. We only operate in Florida with a minor amount outside. Other states we are familiar with are pretty strong min-

ded as far as what techniques and chemicals should be used, and how they should be used. We don't always see eye to eye with all the state regulatory people. But I think that is the thrust, if we can find better ways of caring for water and the nutrient verdant we will all be better off. So I would say that the market potential for sprayers per se is limited to the degree that we are going to more of a management program.

*What is the future of aquatic plant management in general?*

Basically more of the same, more environmental concerns, legitimate concerns. More need to be perceptive and thinking about what is the impact of chemicals, what is the impact of biological control. The White Amur I think is a case in point. It eats weeds and converts it into protein and has a pretty good appetite for hydrilla. It doesn't seem to be effective in some other weeds. But, hydrilla is a major problem. If the fish, the Amur, can be used safely, I think it represents a significant aspect. We're looking forward to incorporating it. We are not answering the question of whether it is safe, from an environmental standpoint, as many people much smarter than we address that question. Florida has recently taken a first tentative step towards using the Amur. Nothing has happened yet, but the cabinet has approved a proposal which the Department of Natural Resources submitted for limited use of the Amur under closely controlled circumstances. That was just sticking their toe in the water, and if it works, I imagine the program will be an advantage.

Our concern is that proper inspection, management, and proper feedback of the field experience be assured, so that when we try this experiment we start developing something. We want to close the loop, so that the information gets back to professionals in a way that they can understand, digest, and in time find meaningful. I think this is fundamental. We are a little concerned about some of the regulations as they've been proposed because they do not give sufficient weight to this concern. I do think it is an opportunity. If the thing is environmentally safe, it will be a good, effective

tool. We think it will be a tool that we can integrate into our existing programs and add one more string to the bow. I don't think it is going to answer it. I don't think it is a threat, because we don't look at ourselves as chemical sprayers. We look at ourselves as aquatic managers.

*Does a government agency actually inspect your work on a routine basis or do they wait until problems develop?*

There are three governmental agencies in Florida. Then there is the E.P.A. The three in Florida are the Game and Freshwater Fish Commission, the Department of Environmental Regulation, and the Department of Natural Resources. You should switch the order because the D.E.R. is concerned with pesticides and labeling, but once you're using approved chemicals and methods then they are not active on a day to day basis. They are active, for example, if there is a fish kill, or if there is a pollution problem or an oil spill. On a day to day basis we are governed by the Game and Freshwater Fish Commission and the Department of Natural Resources. They work hand in hand. They have slightly different jurisdictional responsibilities. There is a permitting system here where you can apply for permits to conduct aquatic operations, and that means anything, chemical, mechanical, biological, or dredging. Any form of aquatic control requires a permit. We apply for the permit and that is dated with the date of the expected program. Generally we take a look at the weed species that are there and the water usage and sketch out a program and then stay within our permit. If we need a modification of the permit, we apply for it. We provide a monthly report to the state that tells what we did.

*It is easy to stay within their guidelines?*

The guidelines are basically the label. The state has been pretty good about not coming up with a lot of trivial stuff. I have talked to people in the aquatic business in other states and some of them have to put up with an unholy amount of what I would call trivial. So, we can't complain.

## FOREST CITY TREE: TREE PROTECTION CONTRACT APPLICATION



A roto-mist sprayer comes in handy, when more than one side of the tree can be reached with it.

William P. Lanphear has been an arborist since he graduated college in 1937. He was president of the National Arborist Association in 1971. He is immediate past president of the American Society of Consulting Arborists. He is a member of the International Society of Arboriculture, and the Ohio chapter of that organization. He is also a member of the Ohio Association of Nurserymen and the Cuyahoga County Association of Nurserymen. His company, Forest City Tree Protection Co. is located in Mayfield, Ohio, a Cleveland suburb.

*Please describe your equipment inventory.*

Forest City Tree Protection Co. has five sprayers in operation. We have a large roto-mist that we use in private and public work, whenever possible. We have two 600 gallon Bean hydraulic sprayers, one is a 60 GPM and the other is 35 GPM. We also have a 30 GPM sprayer. We use them for different types of spraying. For spraying elm trees we usually use the 60 GPM in conjunction with the roto mist. If we can reach the tree from more than one side, we use the roto mist, which is handy. If we cannot, we use a hose from the hydraulic.

*What chemicals do you use?*

We do other spraying than elm tree spraying. We do a dormant oil spray, which is mostly hydraulic. Then we go into foliage sprays for various problems. We also spray evergreens. We spray specialized things like hollies and magnolias, and crab apple trees for fungus. For the elm tree spray we use an emulsifiable concentrate. We use Methox-

ychlor, which is applied pretty strong. In the dormant oil we use the highly refined superior oil.

We also inject elms with Lignasan. Lignasan is a name, but there are trade names, one is called Elm Innoculate. We recommend that, but in addition to spraying and sanitation and all the other elm protection we recommend the injection. We haven't had much luck saving elms that are already diseased, unless it is minor, like 5%. Then we feel we can cut out the diseased portion, inject the tree and save it. If it is diseased in any amount more than 5%, it is pretty hard. We will inject it and try to save the elm if people want to spend the money to try, but with no guarantee whatsoever. It is like a cancer treatment, you try to save the patient, depending on the worth of the tree and the ability of the customer to pay for it. For routine care, we don't advocate it. If the tree is that far gone, you will probably have to take it down. In the prevention field, if the tree is healthy, we recommend spray and injections, and trimming out the dead wood and removing disease nearby. We do quite a bit of that. We also inject trees with the Mauget system of fertilizing and providing necessary elements. We have another injection system called Medicap. We don't have quite the problem in the Cleveland area which requires the use of Medicap because we have more of an acid situation. Where you have chlorosis due to a lack of iron or magnesium, we would use the Medicap injection.

We had an epidemic last year of cottony maple scale. That comes every once-in-awhile. We were pretty well pressed to do that. Every year some type of problem comes along.

## FOREST CITY

We seem to have a routine of birch sprays. We sprayed twice for them. And hollies. And we have a routine of spraying all we can with dormant oil. I like to get the aphid eggs and scale insects and those things. I think that's one of the better sprays and we encourage the people to do that.

They had an idea of using lady bugs from California on the cottony maple scale. Its true, lady bugs do eat scale, but from what I understand, from some of the experts, the variety that they shipped up here wouldn't do any good, especially the first year. What you should do is spray and release the proper type of lady bug the second year. Then they'll begin to eat the scale. The first time you get them here they go into hibernation. Another problem with that is that the people want to spray too soon. You don't spray the egg masses. You spray around the first of July or thereabouts when the eggs hatch out.

We use a lot of different chemicals during the growing season. We have used quite a bit of Benlate for fungus problems. We do some injecting with Lignasan. We use Prath chemicals quite a bit. We use Zygon and some of the other fungicides. We use specifics for each problem. We keep a large inventory of chemicals.

*Do you keep a large inventory of chemicals?*

We purchase large quantities of chemicals because we also sell them. We have not purchased our Methoxychlor yet for this year, but we purchase quite a few gallons of that, enough to carry us through the whole season. The main portion of it will be used in the spring dormant season. We will have enough left to do spraying at half strength in the summer. We also put on a dormant spray in the fall. We try to buy our material for the whole season.

An estimate of the total cost of our chemical use is hard to say. In checking our inventory before I left I found about \$20,000 worth of chemicals. Some of those will be sold though. We are using more expensive chemicals now. It used to be you could figure the chemical end of it was a relatively small cost and it was mostly labor and equipment. Now Methoxychlor costs around \$6, give or take a dollar, a gallon. For example, if you use a one-to-one ration



**A high pressure hydraulic spray rig can cover the taller trees.**

## FOREST CITY

in your mist blower in the dormant season, you have a high cost. The same with your hydraulic, if you use eight gallons and the cost is \$6 per gallon, that is close to \$50, or 50¢ a gallon for every gallon of spray you put out. If you spray a tree that takes a 100 gallons you have put on \$50 worth of material.

### *How large is your staff?*

I am the principal salesman. I don't have any other salesman or supervisors but we have crews. Last year we had six licensed spray operators. Every one that does the work does not have to be licensed, but we felt it wise to have as many as possible licensed.

### *Do you advertise?*

We have been in business for years and we get a lot of business from recommendations. Also through the phone book. We then make our call to discuss what the needs are, survey the customer's property and advise them.

We mail a freight letter to our customers. We mail out a couple thousand. Some go to customers who were new during the year. They go on our general customer list and we send them our spray recommendations, along with a card they can check off. They may decide that they need other services that we haven't done before. In addition, we have regular spray customers who have been doing business with us for a number of years. We send them a confirmation letter telling them what we are going to be doing this year and what the price will be. If they wish to pay in advance, they can do that and get a discount. Those are routine customers. We have probably 300 or 400. We have our customers pretty well lined up. We also get calls over the phone for estimates. I think most of our business comes from established companies through recommendations.

Our total spray customers during a year's time is roughly 800, but some of those have one spray, some have numerous sprays.

### *How do you bill your customers?*

I never ask for a deposit. We take the customer on faith. I don't check their credit, though if I had my doubts I might. Most of the custom-



**Tree protection begins with proper planting of a healthy specimen.**

ers that have spraying done are homeowners. You see what kind of set up they have, and if they want us to spray their trees, they are probably going to pay for it. We send a bill. When the work is done, we leave a notice. We bill for each spray as we go along. I don't demand cash in advance. We do send out our letter at this time of year, and we give a 10% discount if they pay by March 10.

### *What do you feel is in the future for your company?*

Tree spraying is a highly trained field, and I think you have to be very careful in the materials you use. You have to be up to date and study the problems more than you used to, because you can't just go out and spray trees. You have to use approved chemicals, and they will become more and more limited. You can't just pick one of a whole lot of chemicals, you have to limit yourself to what is approved and what is labeled for that particular problem. That means you have to study a lot more, attend seminars, and educational sessions. You have to know what to use, there is no question about that. I thought 10 years ago that spraying would be diminishing and falling down, and in a lot of cases it has increased. Mainly because you still have the problems. They don't go away. Business has increased be-

cause it requires more effort. Maybe there are less people that are competent to do it.

### *What about competition?*

There is a lot of competition among tree sprayers in the Cleveland area. There are quite a few companies. It depends on what type of spraying you are talking about, because you need different equipment to spray trees, tall trees that is, than you need to spray evergreens or bushes. I think a lot of the landscapers do turf spraying, and probably small evergreens, things like that, even though that is a different field than turf spraying. But they have to be licensed and know what they are doing. Some of those people are just spraying and doing it quick because they do not have all the information. You have to abide by the labels. You just can't mix up chemicals and go out and spray all types of evergreens.

There is a safe way of handling the pesticides. I am not an advocate of spraying everything that has a disease. A lot of times it is too late for spraying. A lot of times proper horticultural methods would solve the problem without spraying. I am not saying that spraying is needed at some time or another, because it is if there is a problem that has to be taken care of. We find we are still quite busy with spraying.

# RAILROAD WEED CONTROL RIGHTS-OF-WAY CONTRACT APPLICATION

The following is excerpted from an interview with John B. Roy, president of Railroad Weed Control, Inc. with offices in Westfield, Mass., and Westerville, Ohio. Roy is currently chairman of the Public Relations Committee for the Northeastern Weed Science Society.

Railroad Weed Control, Inc. operates in a 23 state area east of the Mississippi River

*How much equipment do you maintain?*

Railroad Weed Control has 20 spray trucks. These are hi-rail trucks that spray weeds and brush along the tracks. In addition, we have four railway spray cars with which we form spray trains, using tank cars and chemical mixes. Our hi-rail trucks range in cost from \$35-45,000 apiece. We try to maintain them for six years before the depreciation value becomes too great.

*What types of chemicals do you primarily use?*

We use chemicals from all the major suppliers. Our soil sterilants are from DuPont, CIBA-GEIGY, and Elanco. We use contact killers out of Vineland or Crystal Chemical and we use phenoxy herbicides for weed, brush and grass control out of DOW, Amchem and Velsicol. We use combinations of products in our mixes and we also use straight soil sterilants.

Spraying a railroad is a three-fold operation. A yard program is



**A long stretch of railroad rights-of-way can be sprayed utilizing a railroad spray car and a train of tankers.**

## **RAILROAD WEED CONTROL**

primarily soil sterilants. The line-road program for weed and grass control is a combination of products, normally three: a soil sterilant, a contact weed killer and a systemic herbicide. Then, we use a phenoxy type herbicide for brush control.

*How large of a staff do you maintain and what are the members primary functions?*

We have approximately 15 full time people. Besides sales management, we also have supervisory people that handle the actual operations in the field.

We generally have one or two man crews on our trucks. Our preemergent program is all one man crews and our line and road program and brush program are all two man crews, sometimes three.

*Do you actively seek spraying jobs?*

We pretty much work with the railroad. We help the railroad program their vegetation control needs. Our suppliers, or major manufacturers of the products, make recommendations. Then we sit down with the railroad and try to work out a program that will meet their budget.

Because of our years of experience, eighteen now, we know pretty much who the railroads are, what they do, and what kind of programs they've had.

*How do you estimate what a job will cost?*

It depends upon the acreage the railroad plans to treat per mile, the seriousness of the problem, and how much chemical is going to be re-

**A clean railroad yard promotes safety and efficiency.**







**Hi-rail trucks, ready to roll.**

quired to eliminate or control that problem. We base it on how long the job is going to take, what it is going to cost, and where we have to go to do the job.

We're very specialized. We only do vegetation control, weed, grass, and brush, on railroads with our equipment.

*How do you bill the railroads?*

We normally bill on completion of each phase of the program. If a railroad has the yard program, it usually starts before the weeds start to emerge. When weeds and grass grow, we bill it upon completion of that program. If we have a large contract, we might bill weekly, on a production basis.

Line and road programs usually begin the middle of June and continue only into July. We do that in the same manner. It's billed by division, or region, each phase of the program. We handle brush control the same way.

*When do you usually purchase chemicals? Do you keep large inventories?*

We try to keep our inventories as low as possible, especially during

the slow times of year, normally October through the first of March. Then we get the materials we need and bring it in as required.

*What do you see in the future for Railroad Weed Control, Inc.?*

We're trying to do more business with the railroads we're presently working with. In other words, a lot of these railroads don't have their budgets where they should be to take care of the problems with the railroad. The key is to have railroads do more weed and brush control.

*Are there other problems particular to railroad weed control?*

The Department of Transportation insists that railroads have a good visibility and safe operating conditions. Vegetation control is very important in that respect.

*Is there much competition in this aspect of weed control?*

There's a lot of competition in this area. There's probably seven major people in this business in the country. There's a number of smaller applicators.



**DOT insists that railroads have good visibility and safe operating conditions.**

## A CONSULTANT CAN PROVIDE TECHNOLOGY

By Arnold H. Webster

His view point is un-arguable: "You have to know what you're working with before you can treat it." With this attitude Dr. W. D. Thomas, researcher, forest pathologist and consulting arborist holds an amiable and steady hand on "Forest-Ag Environmental Protection Service," his consulting and research firm in Lafayette, California. Seldom does he diagnose without a confirming isolation in his laboratory. That's why a property-owning customer can be confident that the guess work is taken out of diagnoses Thomas makes.

Other professional arborists and pest control operators consult with him (400-500 samples per year are run through the lab) and are given a written report to take to clients. This "strictly business" professional attitude, backed by thorough investigation before diagnosis, is almost like insurance for clients. They can show their customers they are backed by a resource firm with laboratory facilities.

"When we run into questions we can't answer, we tell our client so," says Thomas with the disarming frankness you immediately feel is one of the reasons people have confidence in him. "We check the situation with whatever tools we need — light meter, moisture meter, Shigometer — and take samples to test in the lab. If all this makes us pretty sure we have something new to the area, we report that to our client."

Sometimes the "unknown" furnishes an excellent opportunity for testing new materials. Almost always the home owner is glad to cooperate in learning what treatment can be made. By using their trees as test trees, and observing nearby untreated trees as checks, Forest-Ag can have nearly laboratory conditions for research. This

kind of work done "in the real world" is definitely the sort to inspire confidence in the home owner's mind.

Steady clients receive a newsletter that tells them of new items in research (they get a kick out of realizing they're in the know on new things) and what problems they might be looking for concerning trees, plants, lawns in the coming season. They also receive research releases reporting current results of research, and information leaflets describing pests being encountered locally.

With a wildlife biologist on the staff, coupled with associates in hydrology, engineering, geology, entomology, and remote sensing, Forest-Ag reaches far — from environmental studies for public agencies to assisting home owners to renovate their landscapes.

Tree appraisals are becoming more demanding each year as clients are encroached upon by growing population pressures. An increasing amount of time required in court as expert witness often puts severe strain on research efforts.

Preventive maintenance of private properties remains the main thrust of Forest-Ag's efforts, but there is continuing and conscious effort to budget time allowing fifty percent for research — for commercial clients and in-house. Thomas feels that in-house research is necessary to develop information and techniques which will make possible better and unique service to clients.

Such in-house projects as climatological correlation of pest outbreaks for developing forecasting services, studies on the relations of rodent feeding and transmission of shade tree root diseases, biological agents for tree wound dressing, and the practical use of mycorrhizal

fungi to suppress soil-borne diseases offer exciting breakthroughs in pest management.

He's working with an earthworm grower who sells the earthworm castings for fertilizer. Forest-Ag not only runs the tests to show the analysis of the castings, but studies the relationship of earthworms to the transmission of disease, thus performing two services at one time. Thomas' firm is unique in this way and unique in being one of few (so far as he knows) practicing forest pathologists.

"There are more trees growing in the U.S. now than when the Pilgrims came over," asserts Thomas. "And I'll bet you're going to ask me next why we have so much more trouble with trees than we used to?" "Well, there are, first, more trees. Second, they're growing under stress conditions from the day they are planted. Most trees are not native to where they are being grown. Indeed, they are 'exotic', and so have continual survival problems. It's only natural for trees to have more things happen to them under these conditions."

"That's why," he observes, "I encourage young people to become plant clinicians; partly because of our nation's increasing horticultural awareness, and because there is the obvious real need for people trained as plant pathologists, plant physiologists and arboriculturists. We greatly need more talented young people in forestry and horticulture."

"At the same time I advise such young people to not neglect learning about people, and how to express themselves while pursuing technical subjects. If the practicing specialist can't communicate with a client, the battle for 'green survival' could be lost." **WTT**