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Train Yourself for Plant Pest Control

By A. B. KENNERLY

"Contract applicators have a big field waiting to be developed in controlling insects and diseases in ornamentals, lawns and shade trees," observes C. F. Garner, entomologist at Texas A & M College. "And this field is the logical opportunity for CAs and pest control operators who are willing to add this lucrative line to their present business."

New suburban developments bring new homes with new plantings. Older plantings in the established neighborhoods also need care and attention. A tree becomes a landmark. It becomes important to the family, an emotional strength, a symbol of security, and residents will spend money to preserve the tree when insects and disease threaten its existence.

"Operators who go into this business must be well qualified," Garner insists. "The business must be built entirely on satisfactory service by operators who have the answers."

Can the present operators with little experience in plant insect and disease control become proficient in this kind of work?

"Everyone should recognize that he must start where he is right now," Garner explains. "There are logical steps to take to go into this business."

First, make a survey of potential business. This survey should point up the probable demand for the service. Is the community growing or declining, or is it presently at a standstill? What is the expected life of the community in point of homeowners? Will it likely develop soon into an area of cheap boarding and apartment houses?

Assuming that the area in which the CA operates has a good opportunity for future growth and stable home ownership for another 10 to 20 years, how much time can be taken from present operations to devote to plant insect and disease control? This will determine whether it would pay to add this line to present services.

If surveys encourage the firm to go further, information should be collected on insects and diseases it will be called upon to control. "Plant insects and diseases differ in all parts of the nation," Garner reminds. "It is not necessary to learn about all insects — only those that give trouble."

**Microscopes a Must for CAs**

Collect specimens of the insects. These can be placed with pins in cigar boxes or any other box where the operator can refer to the insects for identification. Many CAs may not know the correct names for all the insects, but these can be identified at a land-grant college or university. Label them and include the dates they were collected and what they were feeding on. Later, the CA may wish to purchase his own microscope and use it for identifying insects as he becomes more skilled. There is nothing that will add more prestige to an operator's professional ability than a microscope.

Next, start building a file of useful information that will be needed to know about insects, their controls, what they feed on and when, and something about the chemicals used in their control. It takes time to do these things, but they are the foundation of the pest control business dealing with plants.

"A library is essential to keep informed on plant pest controls," Garner points out. "No one book or publication is complete. Copies can be obtained from state experiment stations, county agents, from the U.S. Department of Agricul-

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It's no simple task to learn how to fight insects and diseases of lawns, shrubs, and trees as a full-time business, but many spraymen have paved the way to success with hard work and a self-education plan.

**CAs in plant pest control who're teaching themselves "how to do it" can make use of insect identification displays at local extension stations. Here Texas A & M Extension Entomologists C. F. Garner (left) and H. R. Burke examine a handy exhibit. Extension people like to lend a helping hand.**
ture, and from commercial concerns who manufacture pest control chemicals.

Keep Reference Library


With this backlog of information, the next step is to learn through actual experience. "Applicants will learn that regardless of how much knowledge and experience they gain," Garner observes, "things go wrong and plants are damaged. There are several ways to reduce this damage."

First, Garner suggests establishing a small experimental plot where the operator can try out insecticides and fungicides. Or, he can arrange with some grower who is willing for him to use his plantings. This experience will help to establish confidence in the operator for handling the control measures.

Another idea is to try the controls on one shrub or a small part of the lawn, then return later to observe results. Keep records on these for future reference.

Spray Early or Late in Day

Conditions outside the control of the operator may cause damage. For example, if plants lack water, foliage is more easily burned. Midday is not as good a time to spray as the early or late hours. "Plant damage is a part of the business," Garner insists. "Be prepared to replace an occasional plant. Make cost estimates to cover this expense over an average period."

Another point to remember in control of plant insects is that it will often be necessary to make repeat applications. There are few one-shot treatments. Have an understanding with the owner regarding these additional treatments and the cost.

CAs can make arrangements with a noncompeting nurseryman for any needed replacements and at the same time learn much from him about plant disease and insect controls. He will be a good source of referral business since he is interested in satisfactory service and good livability of his shrubs and trees. Sometimes the nurseryman may be providing this service, but would rather give it up to devote his time to his nursery business.

By now the aggressive CA will be ready to take on some jobs. Keep detailed information on each contract. Include the conditions, the kind and costs of insecticides or fungicides to do the job, the time of year, the results, and charges. This information will be valuable when a similar job comes up. It could save losses in making estimates.

Disease Control Logical Adjunct

Learning how to control diseases in plants may be difficult. The homeowner, usually unable to distinguish between insect damage and disease damage, will expect contractors to treat for either. However, methods for learning plant disease control are similar to those for learning control of insects. One can learn where plant diseases can be diagnosed from state universities, although this service is limited in many states. It may be difficult to keep disease specimens.

Garner gives 5 essentials to be observed for controlling ornamental pests:

1. Use the best equipment you can buy to apply the insecticides and fungicides.
2. Select the right control measures.
3. Apply the controls in the proper manner.
4. Start control measures before serious damage occurs. This may not always be possible if homeowners delay, but the CA with contracts for regular care can avoid these situations.
5. Repeat applications must be made in 7 to 10 days for certain pests such as scales, white flies, and spider mites.

In time CAs will learn some short cuts such as combination sprays that will save time and money. These combinations can control a variety of insects.

Once established, there are several ways to obtain new business. Nurserymen can be helpful by referring their customers, unless they offer a similar service. Newspaper advertising, radio spots, direct mail to new homeowners and to selected mailing lists are helpful. One operator gives demonstrations on television.

Another operator who has an established business in pest controls on ornamental shrubs, lawns, and trees has collected a file of color slides showing various activities of his work. He shows these to garden clubs, women’s clubs and other organizations who ask him to give a program showing how to control insects in their ornamentals. While giving self-help ideas, he is also indirectly reminding them that his work is pest control. This brings him considerable business.

Future possibilities in this work are unlimited. Harlan E. Smith, plant pathologist for Texas A & M College, points to the many opportunities in controlling plant diseases and the lack of qualified people to handle the work.

"Trends now point to graduating students from colleges and universities who are fully trained to handle every kind of trouble in plants," Smith predicts. "These people would be as capable of attending to every need of plants as the veterinarian is of animals. We are arousing interest in this need and students are becoming interested. In addition to entomology and plant pathology, students who desire to qualify themselves for this work should also learn agricultural chemicals. These would include herbicides, insecticides, fungicides, and nematocides. Then, there should be additional training in plant physiology and soils."

Contract applicators who are presently training themselves in these fields will continue their search for efficient business and finance management. And this will be good. These young fellows who graduate with skilled training in the sciences of pest control won’t have business experience. They will want to go to work for you.
Close Attention to Spray Tools Is Key to Economical Operation

Weed-spraying equipment has to be shipshape to achieve an efficient job. It is obviously important for CAs to formulate carefully and diagnose thoroughly the infestation to be treated, but these precautions are of no avail if machinery isn't properly cared for.

Sprayers usually have about nine essential parts: sprayer tank, measuring device for tank, filler hole for tank, pump, filter between tank and boom, by-pass valve, pressure gauge, boom, and nozzle.

Here are some pointers, from the Saskatchewan Department of Agriculture, which give CAs some shortcuts to economy and efficiency:

**Tank.** Aluminum or galvanized tanks of 150 to 200 gallons have been found quite satisfactory for certain big jobs. CAs who use a tractor-mounted tank may want to stick to 80 or 90 gallons. These recommendations are for large projects (like golf courses or highway medians) where the application is similar to agricultural work. (In the USA, many prefer tanks of larger capacity.)

**Measuring devices.** For a money-saver, measuring devices can be as basic as an ordinary stick calibrated in gallons. These sticks can be homemade by pouring a specified amount of chemical into the tank, and marking the measuring stick accordingly.

**Filler hole.** This hole should be some 8 inches across, big enough to sweep sediment from the corner of the tank. Frequently there is a screen over this hole to remove impurities from fluids poured in.

**Pump.** Most common types of sprayers for pumps are the gear-type and the machine with nylon rollers. Preference is for the latter, because the gear-type tends to wear faster and lose pressure. Suspended material tends to wear a gear pump.

**Boom.** Booms should be easy to raise and lower, and should have a good range of height. It's essential the boom is just high enough so spray patterns overlap. With 20-inch nozzle spacings, this is usually 21-23 inches above the ground to be sprayed.

A sturdy boom prevents uneven spray patterns which may result when booms whip back and forth. It is desirable to keep the boom from bobbing up and down because if the boom is too low, there is no spray overlap, and if too high, too much overlap. A stiff brace will help hold the boom steady.

It's easy to see how a swinging boom can cause an uneven spray pattern. If the vehicle is traveling 4 miles an hour and the boom is swinging forward at 4 miles an hour, the net effect is a boom traveling 8 miles an hour.

Conversely, a boom that swings back 4 miles an hour at the same vehicle speed gives a net boom speed of 0 miles an hour, and an uneven spray pattern results.

Most booms have a clean-out valve at the end. Water should be pumped through the boom before it is used to flush out sediment. Hose connections should, of course, be tight so spray cannot escape.

**Nozzles.** Common nozzles for weed control chemicals have 80 to 100 mesh screens to keep small bits of chemical from plugging up the nozzle tip.

Nozzles send out a fan-shaped spray. When nozzles are placed at a 5° angle on the boom, sprays run parallel without any turbulence. Each nozzle is designed to put out a specific amount of chemical per minute.

Worn nozzles can be costly because too much chemical is applied to the area. If these nozzles spray more than 10% over the recommended rate, replace tips.

Rate of spray of each nozzle can be checked by running water through the sprayers. The amount of material any type nozzle should apply at a given pressure is listed in the manufacturer's specifications. In one minute, the cup should fill to the recommended rate. Then measure the rate of the next nozzle and so on through the entire sprayer. Badly worn nozzles should have their tips replaced.
Guide to Suppliers of Weed & Turf Chemicals

Weeds and Turf presents below the first Guide to Suppliers of vegetation control chemicals for use by Contract Applicators in urban/industrial areas. There is a mixture of common and trade-marked names (indicated by an asterisk*). This has been unavoidable since usage and recommendations of researchers refer to a particular chemical by one or the other, depending upon the newness of the compound, whether its common name is easier to use, or industry acceptance. There will also be some differences of opinion over the inclusion or omission of certain chemicals under particular use categories. Here again confusion exists among reference sources. We have made our choices on the basis of most frequent mention in our surveys which preceded this compilation. Readers’ comments and suggestions are invited to help us improve future editions. Keep this year’s Guide handy for frequent use.

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Patterson Chemical Co., Inc.
Stauffer Chemical Co.
Taylor Chemical Co.

FENAC
Naeco Chemical Co.
Thompson-Hayward Chemical Co.
Woodbury Chemical Co.

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Woodbury Chemical Co.

HEXACHLOROACETONE
General Chemical Div., ACC
MONURON
See Soil Sterilants

NEBURON
Brayton Chemicals, Inc.
Chapman Chemical Co.
E. I. du Pont de Nemours & Co.

E-Z Flo Chemical Co.
Los Angeles Chemical Co.
Naeco Chemical Co.
Residex Corp.
Southern Mill Creek Products Co.
Wilbur-Ellis Co.

PHENYLCERMUCRIC ACETATE
American Liquid Fertilizer Co.
Brayton Chemicals, Inc.
E-Z Flo Chemical Co.
Eastern Seaboard Supply Corp.
General Chemical Div., ACC
Guard Chemicals
Maillemer Chemical Works
Nott Manufacturing Corp.
Steele Chemicals, Inc.
Vineyard Chemical Co.
Wood Ridge Chemical Corp.
Woodbury Chemical Co.

PROPAZINE®
Acme Quality Paints, Inc.
Amchem Products, Inc.
Black Leaf Products Co.
Brayton Chemicals, Inc.
California Chemical Co., Ortho Div.
Chapman Chemical Co., Inc.
Diamond Alkali Co.
Doggett-Pfeil Co.
Dow Chemical Co.
E-Z Flo Chemical Co.
Hayes-Sammens Chemical Co.
Los Angeles Chemical Co.
Miller Chemical & Fertilizer Corp.
Miller Products Co.
Naeco Chemical Co.
Patterson Chemical Co., Inc.
Residex Corp.
Riverdale Chemical Co.
Rockland Chemical Co., Inc.
Southern Mill Creek Products Co.
Thompson Chemical Corp.
Thompson-Hayward Chemical Co.
United Chemistries
Wilbur-Ellis Co.
Woodbury Chemical Co.

SILVEX
Barada & Page Co.
Braun-Knecht-Heimann Co.
Brayton Chemicals, Inc.
Dow Chemical Co.
E-Z Flo Chemical Co.
Los Angeles Chemical Co.
Naeco Chemical Co.
Residex Corp.
Southern Mill Creek Products Co.
Wilbur-Ellis Co.

TILLAM
Stauffer Chemical Co.

2,4-D
Amchem Products, Inc.
American Liquid Fertilizer Co.
Black Leaf Products Co.
Brayton Chemicals, Inc.
California Chemical Co., Ortho Div.
Cheamgo Corp.
Chipman Chemical Co., Inc.
City Chemical Corp.
W. A. Cleary Corp.
Continental Chemist Co.
Diamond Alkali Co.
Doggett-Pfeil Co.
Dow Chemical Co.
E-Z Flo Chemical Co.
Eastern Seaboard Supply Corp.