

NURSERY AND SEED ORCHARD PESTS AND THEIR CONTROL

A. A. Foster, Supervisor
Tree Improvement Section, TVA, Norris, Tennessee

The topic assigned to me is clear, except for the word "pests." Since the new unabridged dictionary gained fame by including a few four-letter words, I decided to look one up. Pest according to Merriam-Webster has three meanings.

1. An epidemic disease: plague.
2. A plant or animal detrimental to man.
3. One that pesters or annoys: nuisance.

Although the program chairman probably didn't mean to do so, he has given me an invitation to say some things I have wanted to get off my chest.

The plagues are hardly with us anymore. At least they wouldn't be if nurserymen and seed orchard managers followed the control methods speakers have been preaching at these meetings for 20 years.

Who has a fusiform rust plague today? Only the fellow who for some reason hasn't sprayed ferbam at the right time or in the right way. How long has it been since you had a white grub plague in your nursery? That is, unless you forgot to put out dieldrin. And, is black root rot a plague in any nursery where methyl bromide has been properly used? Even damping-off, once the nurseryman's constant fear, is not serious when drainage is good, pH is low, and nitrogen fertilizer is absent. Nematodes rarely get numerous enough to be classed as plagues, but if they did a little DD or EDB or Nemagon or Phorate would control them. There probably isn't a seed orchard yet that has had an annosus root rot plague. If one ever develops, it will be in an orchard where thinning has been done in the cool weather and no borax put on the stumps. So until a new plague comes along, we don't have any great worries.

The second kind of pest--the plants and animals detrimental to man--is more prevalent though less damaging. They continue to do damage because they usually aren't bad enough to hurt much and we take chances. There is probably no one in this room who doesn't know that tip moths, sawfly larvae, and bagworms, and other chewing insects can be controlled with DDT; that red spiders, aphids, and other sucking animals can be controlled with malathion; and that Phorate and Di-Syston in the soil will make spraying for any of them unnecessary. You have already heard about controls for seed orchard insects. If you are unfortunate enough to be managing a seed orchard in the evergreen oak belt, you will someday be spraying the flowers with ferbam to get rid of cone rust. And brown spot can be annoying to the nurseryman who takes a chance on not spraying the longleaf beds

with Bordeaux mixture. The needle and stem blights of redcedar and Arizona cypress almost qualify as plagues, but mercurial sprays make it possible to live with them.

While the plagues and detrimental plants and animals present a few minor problems, the kind of pest which is hardest to control is the third one--one who pesters or annoys: nuisance. There are at least three major groups of nuisances which threaten nursery and seed orchard production.

Just to keep this presentation honest, I'll start with Class A nuisances--the scientific experts and consultants. Most of them mean no harm. They are just trying to stay on the public payroll long enough to get their kids through college. Any experienced nurseryman will have met three kinds of expert nuisances.

First come the witch doctors. They practice sympathetic magic. The first thing they do when a new problem arises is to find the latin name of its causal agents This may take from 6 months to 3 years. Then they get an appropriation to hire an assistant to work out the life cycle. When they are through their studies, there is a five syllable genus and a four syllable species which a few people can pronounce and hardly anyone spell--*Tylenchorhynchus*, *Phymatotrichum*, *Malacosoma*. Somehow by calling it names, they hope to pronounce a curse on it. This is the old trick of calling a sore throat laryngitis. It doesn't ease the pain any but you feel as though the doctor has helped.

The second type of expert nuisance you find around nurseries and seed orchards is the man-in-white. He read about Pasteur as a child and has been scared of germs ever since. He wants you to fumigate your soil, chlorinate your irrigation water, disinfect your packing shed. To be on the safe side, you cut down all oak trees within half a mile of the seed orchard as a precaution against fusiform rust and all pine trees to keep out foreign pollen. If you follow his directions, you will have a completely antiseptic nursery and an empty pocketbook.

There's still another kind of expert nuisance--the nature boy. He's the Joyce Kilmer type who sees beauty in all trees. Yellow ones in the seedbed are just naturally yellow. Starved ones are nice and stocky. Let the rust and the tip moth go, they'll weed out the weaklings. No use in pampering nature. Nobody fertilizes or sprays the redwoods. He is against fumigation because it kills the mycorrhiza. DDT poisons the robins. Chemicals kill earthworms. Just let nature establish its balance.

The best control of Class A nuisances--witch doctors, men-in-white, and nature boys--is to ignore them. They furnish a little diversion and by themselves don't hurt anyone who keeps his head. Occasionally, they have an idea that helps.

Class B. nuisances present more serious problems. They are the supervisors which all organizations maintain to initial payroll forms and requisitions. Although there are at least three types of supervisory nuisances, it is rare that any nurseryman will have to deal with all three.

The first is the deity who knows all the details of nursery and seed orchard operations. He pulled weeds at a nursery when he was in a CCC Camp and then took a nursery course in forestry school. He knows how many men you need, what kind of fertilizer and how much, which treatments are unnecessary, what size tractor will pull which implement. He grows every seedbed and pollinates every flower from behind his desk. There is not much a good nurseryman can do about this kind of supervisory nuisance except look for another job.

Perhaps you have to deal with the other kind of Class B nuisance--the abdicator. He resigned his command 15 years ago when he began his career of creeping retirement. He tolerates the nursery and seed orchard program as he does the rest of the organization so long as it doesn't interfere with his golf or fishing. You produce a bumper crop of well bred seedlings but he doesn't have time to come and see them. He is a good fellow at the poker table, but doesn't help much to build the program. It takes a good nurseryman to control this kind of nuisance, but with enough resourcefulness, it can be done.

The last kind of supervisory nuisance is the man in the *gray* flannel suit. He has to climb the ladder fast, strengthen his political bonds, be liked by his employees, move in the best cycles, drive the best car, brag about his department. He is not held back by an overdose of honesty. This is getting to be one of the most common types of supervisor and is fortunately the easiest to control. Just play the game with him. A little bluff doesn't hurt the crop as long as you have sense enough to do the right things on the side.

It was easy to discuss the Class A and Class B nuisances because I have been both. It is with some hesitance that I even mention Class C--the nurseryman. He can be his crops worst enemy. Class C pests are of two kinds.

First there is anti-mind. He doesn't read about nursery management or attend conferences. He learned all there is to know about farming as a boy behind the plow. Fumigants, sprays, pollinations, superior trees are all right for sissies. His horse sense will meet the problems as they arise. Any dead trees come from oil dripping from the tractor. Extra large ones come from an extra large clod of manure that dropped in the bed. He needs no help from experts or supervisors or even other nurserymen. This kind is getting scarce. He doesn't make a crop often enough to stay on the payroll.

The second nurseryman pest you will recognize as fuss-budget. He sees troubles before they exist. He sprays for rust before the seedlings come up and continues after the oak spores are gone. He doubles the dose of insecticides and applies it every 2 weeks instead of once a year. Weed sprays and fertilizers get the same treatment. Injuries from overdoses make his crop about as poor as the one where the nurseryman does nothing. He is a serious nuisance to his consultants, his supervisors, and his laborers while he lasts. Best control is to let him wear himself out.

I know better than to develop this angle any further. So far I have dealt with the plagues, detriments, and nuisances that can be controlled. If any of the experts, supervisors, or nurserymen in this audience feel that the worst kind of nuisance is an ex-pathologist turned tree breeder and supervisor, I hope his control measures will be merciful.