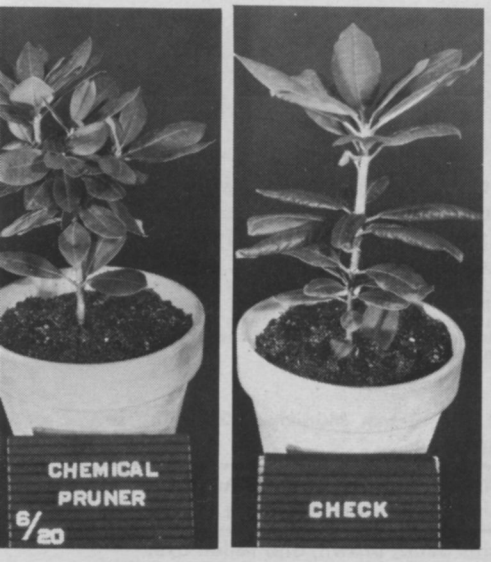


Fig. 1—Increased branching of rhododendron was achieved with a spring treatment of a chemical pruner (8%).

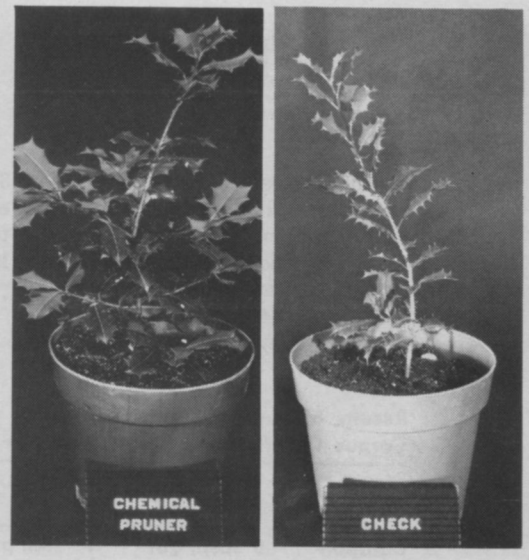


Fig. 2—A spring treatment with a 15% chemical pruner produced increased branching in American Holly.

Fig. 3—A spring application of 100 ppm of Morphactin resulted in increased branching of American Holly.

Ohio Research Report

Chemical Pruning Shows Promise

By DR. P. C. KOZEL, horticulturist, Ohio State University

CHEMICAL regulation of plant growth may be one answer to a nurseryman's labor problem, believes horticulturist Dr. P. C. Kozel of Ohio State University.

In the current issue of Ohio Report, publication of the Ohio Agricultural Research and Development Center at Wooster, Kozel writes about research begun in 1968.

Scarcity of skilled hand labor has forged a two-edged sword that is an increasing menace to nurserymen, he said. Lack of such labor makes it difficult for the nurseryman to adequately prune and weed, with the effect that plant quality and profits are often lowered.

Chemicals have brought efficiencies of operation and reduction of labor cost in other industries, he explained, so studies were initiated to "regulate plant growth with chemicals to fit the current needs of the nursery industry:

"Chemicals are available today that can accelerate or retard plant growth, induce flowering and fruiting, increase lateral branching, and cause other desired effects.

"A great number of substances have been studied and three plant growth regulators have shown outstanding promise for adoption for commercial use."

Of particular significance are the chemicals that can substitute for manual pruning or pinching. These products selectively kill the young shoot apex, resulting in well-branched, high-quality nursery plants with minimum manual labor.

A foliar spray of a chemical pinching agent, Off-Shoot-O, was tried

Beautification Test Plot

Have you considered a "beautification test plot" as a stimulus to bring business your way?

People must have a desire for beauty before they'll plant grass, buy mowers and fertilizer, get their trees and shrubbery sprayed, and so on.

Here's what a Cleveland minister got started.

In a section of town where rutted and barren tree lawns were the rule, the Rev. Sanford Pierce of Holy Gospel Church of God and Mrs. Willie Aetner and her eight children put in some grass to show how it improved the neighborhood.

Extension agent Francis Calderwood was called in to give a grass-planting demonstration. He persuaded the Lakeshore Equipment and Supply Company to donate some grass seed and fertilizer.

Calderwood is thinking now of setting up a lending library of tools, since many of the people at the moment can't afford to buy the tools.

Projects need names and this one is called the Cuyahoga County Beautification Program.

The same kind of a project might work in an area where folks can afford to buy the tools. Whether the project is successful in spreading the desire for beautification isn't yet known. But the "keeping up with the Joneses" psychology has worked wonders in other endeavors.

Fig. 4—A foliar spray of 500 ppm of gibberelic acid (GA_3) increased growth on the viburnum plant at left.

on American holly plants and rhododendron when new growth was about a half-inch long. Young shoot tips were killed within 12 hours with a concentration of 8 to 15 percent of the chemical, Dr. Kozel reported.

A new group of chemicals called "Morphactins" also increased branching, he continued. While these chemicals do not kill the young shoot tip, he explained, they overcome apical dominance and induce lateral branch formation.

"This is an important difference as it is often desirable in the case of shade trees to increase branching without destroying the central leader of the plants."

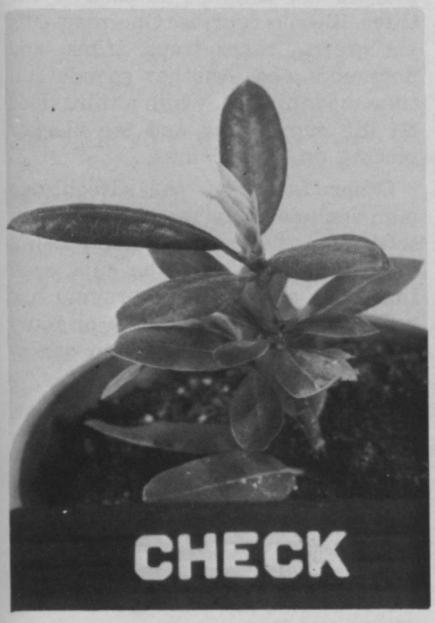
Kozel reported that American holly plants also were created last year with a foliar spray of 100 ppm of Morphactin at the start of vegetative growth. Chemical application, combined with good cultural practices, yielded high-quality plants by the fall of the same year, he reported.

A few plants were treated with 1000 ppm concentrations of the Morphactins. At this high concentration, terminal vegetative growth was severely retarded. Species variation occurred between Forsythia and Honeysuckle.

In both instances, plants treated in early June were severely retarded in their vegetative growth, little being evident event at the beginning of September.

Forsythia, however, exhibited severe leaf distortion whereas Honeysuckle foliage was normal in appearance.

Viburnum plants were treated with 500 ppm foliar spray of gibberellic acid (GA_3) in the spring when the new growth was about one inch long. Treated plants had an accelerated rate of vegetative growth that was of good quality and considerably greater than untreated control plants.



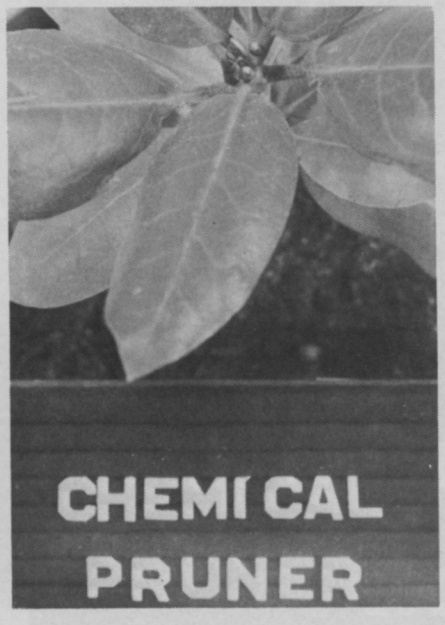


Fig. 5—Continued research has indicated that timing of the growth regulator application is important. For example, last year 8% Off-Shoot-O was necessary to chemically prune rhododendrons, while this year a 3% concentration was effective. The picture at left shows the stage to treat; the other demonstrates the selective killing of the terminal apex and the subsequent enlargement of auxiliary buds.