The need and potential for modern county programs to control roadside weeds and brush has been highlighted this year in Pierce County, Washington, where a combination of spring floods and normal budget pressures put an extra load on the 125-man highway maintenance division.

Pierce County highway crews met the 1972 challenge, and one of the big reasons was the fact that an increasing share of roadside weeds and brush are now being controlled with chemicals that are quickly and easily applied, yet are safe in the environment and safe for humans, animals and birds.

Heavy winter snows, plus continuing spring rains and an unusual early heat spell brought unexpectedly high run-off from Mt. Rainier this past spring. This put extra water pressure on roadside ditches and resulted in substantial spring flooding of roads and fields; also, the high run-off ultimately produced a tight highway maintenance budget, because of the need for extra road repairs. But despite this unusual situation, Pierce County has continued to allocate funds to its 17-year-old highway chemical weed program; for the program has proved its value and county officials have been determined to keep this key weed program in operation.

Their decision has particular significance this year, since weed supervisor Harrison Ford and his application crews are in better shape than ever to take advantage of a newly introduced roadside herbicide—Krovar I—that controls a broader range of weeds and grasses than other compounds while standing up under heavy water pressure, as well as in periods of semi-drought.

Krovar I controls the 20 most common roadside weeds in the West including culprits such as: crabgrass, barnyardgrass, pigweed, purslane, lambsquarters, ragweed, nightshade, foxtail, chickweed, groundsel, shepherdspurse, puncturevine, wild mustard, horseweed and seedling Johnsongrass. And this year Krovar I has proven to be an effective residual compound for Pierce County highway crews in the first few months following its registration and availability for roadside use.

Pierce County has about 3500 miles of roads that traverse rural, suburban and urban areas in Western Washington. When it comes to roadside weed control, weed supervisor Ford reports: "We have need for a broad-spectrum compound that can be safely used in town and country. We think we have it in Krovar I because we have been..." (continued next page)
using this new product in a variety of situations. It has certainly done a good job."

The Pierce County weed control program really goes back to 1955 when former weed supervisor Fred Kropf started an attack on noxious weeds such as tansy ragwort and nightshade. There was a statewide drive on these weeds getting underway. The drive involved the roads of numerous counties, since the road systems were regarded as natural corridors for the spread and propagation of weeds. In the early days, hand sprayers were used. Later some roadsides were treated with a special rig fabricated in the county maintenance shops.

Harrison Ford became weed supervisor in 1963 and in 1967 Pierce County purchased a new roadside spray rig. This enabled county crews to increase regular treatments, reaching more miles of roadside without any increase in manpower.

Today, Ford plans the Pierce County chemical weed program as an integral part of the road maintenance program. Mechanical cutting and hand clearing of bridge abutments, certain roadside shoulders and other areas are still standard practice. But chemical control is also an accepted practice. And it is clear that in many situations the chemical route is preferred—either from the viewpoint of economy or safety or simply because of the critical need to control vegetation in major roadside drainage ditches or around wooden bridge trestles, where dormant brush and weeds create unusual fire hazards.

"One of the principal objectives is safety," says weed supervisor Ford. "We have a lot of miles in our county road system and do not attempt to cover them all with a chemical weed program. We focus this program on areas where it can be especially effective, and we certainly have not been disappointed."

For several years Ford's three spray crews (one handles work in each of the county's three road districts) used Karmex diuron as their basic roadside chemical. Trials by Fred Degiorgio of Du Pont and David Palodichuk of Van Waters & Rogers indicated that Krovar I would control a broader spectrum of weed species.

This year Krovar I has been adopted for most roadside weed and grass control. The roadside spray period in western Washington starts in April and runs to mid-June. During this time, the crews keep the Pierce County spray rig busy on (continued on page 26)

Do you see an 18 inch drainage ditch above? It runs parallel to the road, but weeds and grass have hidden it from view. Vegetation also inhibits orderly water flow and represents a driving hazard.

Semi-dormant weeds and grass at base of wooden viaduct shows where weeds and grass have been treated to hold back growth. Without chemical control this growth would be head-high by mid-summer.

Treated shoulder on Pierce County road shows how Krovar I has kept the roadside clean. Posts are readily visible, Nearby trees are unharmed, with Krovar I being used at a 4-pound per acre rate.
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ditches and rights-of-way. They apply a basic 8-foot swath to shoulders and ditch bottoms, but with a two-nozzle fixed boom spray rig controlled from the cab, the spray operator can easily modify the spray pattern to conform to the needs of roadside terrain.

The Pierce County spray rig has two tanks (one holds 500 gallons, the other 250 gallons) and two 100-foot hoses with spray wands, as well as the fixed boom. This provides maximum flexibility in spray applications. Different materials can be carried in these tanks to handle a variety of weed problems and brush problems around bridges and culverts.

Normally, brush control spraying with 2,4-D is started in the spring, but then in the fall Ford’s program is focused on alders and blackberries, while the winter spray effort is concentrated on dormant brush control with Tordon. In addition, Pramitrol pellets are used during the growing season for weed and grass control around signs and markers, so cutting crews do not have to be held up by excessive growth near these signs.

“We have made a switch to Krovar I in 1972,” reports weed supervisor Ford. “The idea was to control more weeds along the roadside, so our spring treatments would be even more effective than they have been. We usually treat at a 10 to 15 pound rate on road shoulders and drainage ditches that have never received any chemical treatment before, but we use a 7-pound per acre for road sections previously treated. We mix the Krovar I and a quart of 2,4-D in 100 gallons of water and we drive our spray rig at about 10 miles per hour when we are spraying.”

Spray operations, Ford notes, are often more economical than hand work. An example is a 400-foot wooden viaduct. It once took a six-man crew a week and a half to clean out brush at the base of this viaduct. Now a two-man spray crew can apply a brush-control compound in a few hours, freeing the other men to tackle other needed road maintenance tasks. The chemical approach provides longer control and protects the viaduct against the hazards of fire by keeping dead weeds and grass out of the area.

Similarly, it often takes a highway crew a full week to clear a typical weed-choked drainage ditch. They need five trucks and a Barton (continued on page 30)
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WEED CONTROL (from page 26)

shovel to do the job. But a single properly-timed spray will keep this ditch free of weeds and grass for many months, so the highway manpower and heavy machinery can be assigned to other road repair jobs.

Weed supervisor Ford coordinates the Pierce County weed and brush control program under County Engineer William Thornton, who in turn handles road maintenance under the county board of commissioners. The essential aim of the program is safe roads with minimum road maintenance costs. This can be a difficult task, since the county extends from Mt. Ranier to the Pacific Ocean and includes virtually every type of possible highway and weather condition.

Road maintenance costs have been climbing. Today roadside mowing, for example, involves $20-$25 per acre for labor; and equipment repairs can be costly, too. Usually they will average $35 a day for every day equipment is operated. Roadside litter and unexpected, hidden obstacles often put mowers or tractors out of operation. These costs have made chemical weed and brush programs more attractive than ever. While only about one mile in seven in the County is now receiving chemical weed treatment with Krovar I, the savings achieved through the chemical program are significant, especially this past year when the County was hit with extra flood damage to its roads.

Priorities on county roads to receive chemical weed treatments are set by road supervisors, road foremen, and weed supervisor Ford. It is his responsibility to keep in touch with overall needs and to help train district crews, while looking for new developments that will help the County get better weed control without massive increases in budgets. Ford carries on the county program to control noxious weeds as well as the weed program related to road maintenance.

The Pierce County weed and brush program has come a long way in recent years. Weed supervisor Ford would be the first to say that it can make substantial gains in the future. New technology and new compounds, like Krovar I, have helped bring a new dimension to the weed program. What was learned last year about Krovar I, for example, persuaded Ford that this compound belonged in his program. What is being learned this year about Krovar performance on Pierce County roads will be built into plans for still better weed control in the years ahead.

Krovar I was applied to this roadside. Note that when a trained crew applies the spray, there is a wide margin of safety to the adjoining farm crop. Supervisor Ford helps train his applicators.