

# Smoking out brush control on roadsides

by JAMES E. GUYETTE / Contributing Editor

**A** new cutting-edge program for controlling brush along highways actually involves cutting back: it's cheaper to spray once than it is to continuously mow.

The program, known as "Brush Busters," is being developed by Dr. Darrell Ueckert and Dr. Allan McGinty, Texas Agricultural Extension Service range scientists. The new approach is being funded through Texas A&M University with a \$222,000 contract from the Texas Department of Transportation (TxDOT).

"Brush Busters is a newly-packaged, common-sense brush control concept that uses proven chemical methods to selectively remove noxious plants without harming nearby desirable vegetation," Ueckert explains. "The funding is for developing uniform, statewide guidelines and procedures for use by TxDOT maintenance personnel. We plan to refine our new Brush Busters program to meet TxDOT needs."

The main target is the mesquite tree. And while mesquite wood may be in hot demand elsewhere as a flavorful fuel source for backyard barbecues, in the Lone Star State wild mesquite trees are an ongoing problem.

"They're considered a hazard to motorists," says Ueckert. The thorns find their way into tires, and the trees inflict serious damage to a vehicle that crashes into them. Some species of thorned shrubs are known for their ability to safely ease a careening car to a stop—but mesquite is not among those. "Most motorists, when they fall asleep and run off the road, wake up," Ueckert observes, "but if they were to run into a thicket of mesquite, they would not wake up."

Mesquite infests some 51 million acres of



The thorns of the mesquite find their way into automobile tires.

Texas land, including much of the 1.42 million acres of highway rights of way along the state's 78,000 miles of roads.

## A natural appreciation

TxDOT's major goal is to maintain a roadside "native prairie" for each site or region across the state. Ueckert says this reflects the appreciation for aesthetics, wildlife habitat, soil stabilization and watershed values of prairie vegetation as well as the safety concerns for motorists and TxDOT crews. "The public loves to see bluebonnets and other native wildflowers along the roadside," Ueckert notes.

"You can't have a native prairie brimming with wildflowers when it's choked with mesquite," adds McGinty. The conventional control of mowing is not successful, and in fact, mowing makes mesquite worse.

It costs \$18 an acre to mow, and any mowing program must be repeated several times a season. "If you cut it off, mutilate it or burn it, you'll have more of a problem," according to Ueckert. "The plant will change from a single-stem tree plant to a multiple-stemmed shrub." Also, mowing mesquite creates more thorns that are just waiting to imbed themselves in a passing motorist's tire.

It costs just \$7 an acre to apply chemical controls for mesquite on rangeland. The actual finan-

cial figures are not yet in for median strip applications, but Ueckert and McGinty see sizable savings on the horizon.

Two techniques are being applied under the chemical control program, which uses triclopyr and clopyralid:

1) **The stem spray method.** The lower 12 inches of the plant is sprayed with a mixture of 15 percent triclopyr and 85 percent diesel fuel. "This can be done any time of the year, but it's more effective when temperatures are high," says Ueckert.

2) **The leaf spray method.** Using 0.5 percent triclopyr and 0.5 percent clopyralid, the materials are mixed with 5

**Ueckert applies the leaf spray only during the June-September growing season.**

percent diesel fuel in water, plus a commercial emulsifier or liquid dish soap. "The leaf spray can only be applied during the growing season—June through September."

The equipment needs are minimal.



## Turf 101: hot + humid = disease pressure in the summer

July and August was a rough time for golf course turf across the Midwest this year.

The reason: the summer's "Extreme Environmental Conditions," as reported by turf scientists from the Ohio State University.

Air and soil temperature went way beyond the ideal ranges, for multiple days at a time, putting intense pressure on cool-season root systems. With the root systems weakened, the turf was unable to combat disease pathogens.

Soil temperatures, which are ideal in the 50-60°-range, rose to 100° F at mid-day. According to OSU scientists, bentgrass will not initiate new roots when soil temperatures exceed 90° F.

"High soil temperatures resulted in root decline and no opportunity for root regrowth and recovery," reports OSU.

In heavy rainfall, oxygen was pushed from the soil, and roots were suffocated. Extensive dieback and complete turf failure occurred so suddenly, that according to OSU professors, superintendents were

able to fix complete turf failure to a specific date and time.

### Fertilize for winter survival

Richard Buckley, director of Rutgers University's Plant Diagnostic Lab, says it's essential that golf greens and ornamental plants are well-fed for winter.

According to Buckley, most of the drought-related problems he examined took the form of summer patch and anthracnose.

"Summer patch pushed turf to the limit," says Buckley, "and turf wasn't able to meet the transpiration demands necessary for survival."

Unfortunately, trees and new plants are going to show the effect of summer stress, come spring, says Buckley, even if those plants were well-irrigated during and after the heat wave.

"Plants don't respond as well to irrigation as they do to regular rainfall," says Buckley, who says he saw some early leaf drop in areas of Pennsylvania, New York and Connecticut. □

"You can use a \$25 spray rig," Ueckert points out. "The backpacks work fairly well if your brush is dense."

A three-person crew can be highly cost-effective when assigned to an all-terrain vehicle equipped with a 14- to 20-gallon tank with three hoses. Two walk and spray while the driver drives and sprays. "You can cover a lot of ground with those. You can cover a 40-foot swath."

Less herbicide is used when compared with broadcast applications. "The key thing is that it's low impact" on desirable species and the environment, Ueckert says.

Plans are afoot to augment the ATVs with a speedy device called the "Brush Robot."

"We want to automate this even more," Ueckert reports. "These sensors feel the brush and activate the spray nozzle," he explains. "You're putting the herbicide directly on the target and you have very little contact with wildflowers or prairie grasses."

Best of all are the savings to Texas taxpayers: "Chemical controls will only need to be applied every three or four years." This is a big improvement over multiple mowings that don't even work and result in additional hazards to the traveling public. Says Ueckert: "Instead of growing more thorns, we want to kill them." □

—Terry McIver