



Specially adapted booms like the one in top left portion of picture help highway supervisors and contract applicators apply rights-of-way herbicides.

What Highway Supervisors Want From the Contract Applicator

HISTORY is in the making and there is an opportunity, specifically, for the chemical and equipment industries, and contract applicators, to participate directly in the greatest road building program the world has ever witnessed.

This program will require vast specialized services to an extent that may not now be readily visualized.

The development of materials, equipment, and construction methods for roadside projects must keep pace with those of the road building industry at large.

This expanded highway program will provide an additional outlet for the knowledge and

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abilities of chemical and equipment suppliers and contract applicators. And there are many problems that may be solved by constructive criticism and complete cooperation of all concerned.

Since 1951 Massachusetts has been using and experimenting with chemical weedkillers in an effort to reduce mowing and maintenance costs.

We have applied 2,4-D; 2,4-D+T; 2,4,5-T; maleic hydrazide; Telvar D.W.; diuron; Ureabor and Urox. All have been used with varying degrees of success.

We have learned that each has its place in maintenance as a useful tool. Herbicides in themselves are not a "cure-all" for roadside maintenance problems. When properly used, however, in combination with other roadside operations, the result is a more pleasing roadside appearance at a considerable saving financially. But, to make such materials more economically feasible, their effectiveness must be increased, their cost of application reduced, and their purchase price decreased.

Attacked Poison Ivy First

Massachusetts' first use of chemicals along the roadsides was directed against poison ivy,

at the time an extremely serious problem. Through the use of 2,4-D plus 2,4,5-T, this condition has been practically eliminated. This fact not only has been reassuring to the 3,500,000 people who enjoy our 375 roadside rest areas each season, but, has greatly reduced the duration of time lost by Department employees who are engaged in roadside work.

The Massachusetts Department of Public Works has been making valuable contributions to highway safety with the aid of chemicals, (2,4-D plus 2,4,5-T, 50-50 concentrate of low-volatile esters) by making a concerted effort to increase sight distance on the highways. These herbicides, also, assist in controlling brush at our roadside rest areas and vistas, behind guard rails, and in our selective clearing program.

Not only has the general appearance of the roadsides been improved, but in our opinion, clean roadsides are a major factor in highway safety.

In our program of selective control of weeds, we have used MH-30 in combination with 2,4-D as part of our constant effort to reduce the number of annual mowings. During this operation we found that certain weed growths are less responsive than others, particularly in dry seasons.

We have, also, been applying 2,4-D in combination with urea (45% nitrogen) fertilizer to certain areas requiring rejuvenation. This two-in-one combined application has proven to be economical.

Mass. First to Contract Mow

It is noteworthy that Massachusetts, in addition to being the first state to do all roadside mowing by contract, is among the first to apply fertilizer in combination with 2,4-D spray.

Massachusetts has approximately 2500 miles of state highway, which includes 10,640 acres of grass and 9,550 acres of non-grassed areas such as native woodland growth and ledges. In our attempts to modify turf management costs through chemicals,

Private companies which contract for roadside weed and brush control, fertilization, mowing, etc., will find author Beasley's catalog of what he and his colleagues want from contractors and from the chemical and equipment industries useful and interesting. Mr. Beasley is well known among professional vegetation maintenance and control personnel.

the Department has combined sprayings of various-purpose chemicals and has advised private enterprise to provide special applicators to accomplish this work:

(1) For median strips up to 40 feet, roadsides, outer edges of interchanges, and narrow divider islands, a 1,000-gallon tank, with booms for 20 feet range: and

(2) For wide median strips and divider islands over 40 feet wide, lobes, bowl areas of interchanges, and other "hard-to-reach" areas, four-wheel-drive Jeep with mounted 250-gallon tanks, fixed horizontal and vertical booms, and a manually operated boom.

While these new applicators are sufficient for the above-mentioned purposes, of necessity,

with the vast increase in construction of both state and interstate highways, they will soon become obsolete.

Grass and weed control, through the proper use of chemicals and advanced models of applicators, is most important in all categories of economical roadside maintenance.

Manufacturers should have on their designing boards plans for larger, more efficient applicators. For example, we need a piece of equipment, possibly a belt-type applicator with supercharged power, to spread pellets or heavy granular fertilizers a distance of approximately 100 to 200 feet; such equipment could then reach plant materials on cut slopes and other difficult-to-reach areas from the highway.

Another type of applicator



This contract application spray rig is a precision-engineered, completely out-fitted machine tailored to the unique requirements of roadside vegetation work.



Rear view of this spray rig operated by Worthy Maintenance of Springfield, Mass., reveals the complexity of pumps, tanks, hoses, and other quality equipment necessary for competent contractual work for highway roadside spraying.

should be designed to spread wood chip mulch uniformly, without any decrease in size of the mulch, over any reasonable given area and distance, again from the highway.

Need Bigger, Better Sprayers

Larger and more powerful spraying equipment is needed. Especially important is size of hoses and nozzles for spraying further distances with more accuracy (also from the highway).

It is of paramount importance that all operators of these anticipated new and powerful types of equipment be thoroughly trained and be considered experts in this forward approach in highway landscaping techniques.

The following items are submitted for research by the chemical, equipment, and contract applicator industry.

1. A balanced liquid fertilizer which can be sprayed and will accelerate the growth of seedling pines, evergreens, woody shrubs, low-bush blueberry, bearberry, sods and vines.

2. Chemicals with a faster action and longer effectiveness for grass retardation, ground fertilization, and soil sterilization.

3. A synthetic mulch with lasting qualities and with a resistance to weed growth, as a substitute for present costly hay or wood chips.

4. A synthetic which will augment water retention in plants

and grass thereby enhancing their resistance to drought.

5. A safe chemical sufficiently selective and easy to handle to eliminate grass or weed growth, but, without injury to tree or shrub plantings.

6. A less expensive chemical to retard the growth of grass.

7. A chemical or synthetic hormone to break the dormancy and increase the fertility of natural-growth seeds of native pines, low growing woody shrubs, low-bush blueberry, bearberry, sweetfern, and woodbine.

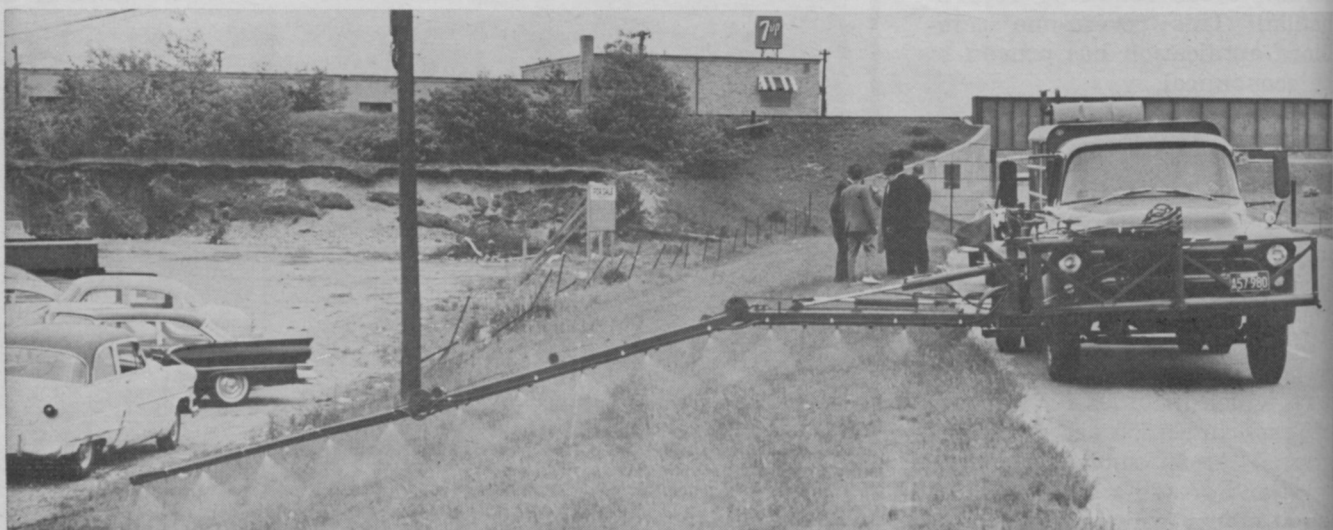
8. A brush-growth retarder which will not brown out the areas where control for sight distance is at a costly premium.

These are but a few, but coupled with many other problem areas in roadside management, are considered to merit a concentrated effort in research because they offer sufficient practical marketing potential.

Educate Public

The industry at large should, also, assist in the education of the general public on chemicals. Many misconceptions relative to chemicals now in roadside use, regarding their effect on birds, animals, and other plants, lead to unnecessary agitation by certain private businesses and various groups dedicated to the preservation of plants and wildlife. Advice to these groups, to allay

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Extended boom has variety of controls allowing operator to adjust spray pattern.

What Highway Supervisors Want From Contract Applicators

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their unwarranted fears, has become an important and sizeable requirement in our roadside program.

The areas of management of vegetation along present day thruways, freeways, parkways, turnpikes, and interstate highways are more extensive in width than formerly and must be administered more efficiently.

Thus, from a maintenance

standpoint, it is imperative to fully comprehend this growing giant-in-breadth so necessary to erosion control. Therefore, we must devise new methods of control and improvise on the old, since increased competency in ways and means is the only procedure to extend the overburdened maintenance dollar.

Each individual highway must be designed in a tailored fashion according to the dictates of our surrounding terrain. The construction plans must include not only a complete highway, but,

one possessing the many facets of built-in maintenance.

Experience has taught us that there is no single phase of our roadside development operations that can be termed a "cure-all" for a reduction in mowing costs. It is rather a well-planned combination of:

(1) Planting and mulching; (2) weed control; (3) soil sterilant; (4) contract mowing. This is the type of program we envision in Massachusetts.

U.S. Borax Offers "Maintain"

A new herbicidal formulation designed for use as a multipurpose weedkiller is now being marketed by U. S. Borax & Chemical Corp., Los Angeles, Cal.

Called "Maintain," the new weedkiller is described as a liquid emulsifiable concentrate containing 2 pounds of 2,3,6 trichlorobenzyl-oxypropanol, 1 pound of bromacil, and 0.2 pounds of 2,4-D acid equivalent per gallon.

Dr. L. M. Stahler, herbicide products manager for U.S. Borax, said extensive field tests showed "Maintain" to be a long-lasting, nonselective weedkiller for use where complete control of vegetation is desired, such as playgrounds, fuel storage areas, power transformer stations, industrial yards, railroad yards and general track areas, and along highway shoulders and bridges.

Stahler also says the new herbicide is particularly useful for control of those species which have shown a high degree of resistance to substituted urea and substituted triazine herbicides when applied at maintenance rates. "Rapid initial action and a quick knockdown of existing broadleaf vegetation is obtained at application time. In addition, the formulation has excellent residual effects in the soil," Stahler concluded.

Interested applicators may obtain complete details about this product by writing to U.S. Borax & Chemical Corp., 3075 Wilshire Blvd., Los Angeles, Calif. 90005.

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