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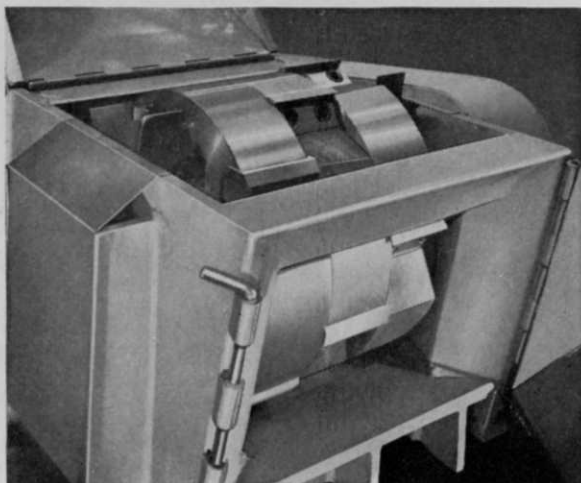
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FORMERLY WEEDS AND TURF

May 1967  
Volume 6, No. 5

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## Herbicide Industry Needs Career Man

Chemical weed control has become an essential phase of management in the industry. Not only is it important in those businesses associated with weeds, trees and turf but is even more so in the worldwide picture for production of food and fiber.

Seldom has an industry enjoyed the rapid expansion experienced by herbicides in research, manufacturing, sales, and use. Results to date are plus.

But with this sudden and profitable growth has come a critical shortage of trained professionals to serve the industry. Competition for personnel is the in thing in the industry. Because of the complexity of the field, and the requirement for scientific minds, men to fill the voids today do not exist.

Generally, too few personnel have been assigned by universities in teaching and research fields to do the job. Too few have been encouraged by industry to prepare for this specific field. Difficulty in testing and registering new products demonstrates government's lack of trained men and facilities. Shortages of men today are critical to the point that expansion rates of some companies are being hampered.

Naturally, the industrywide answer calls for more than a simple resolution by various organizations associated with herbicide research, development, or use. Nor can the overall problem be solved within a few months, or even years.

Since the obvious solution is trained manpower, the entire industry needs to contribute both to recruitment and training.

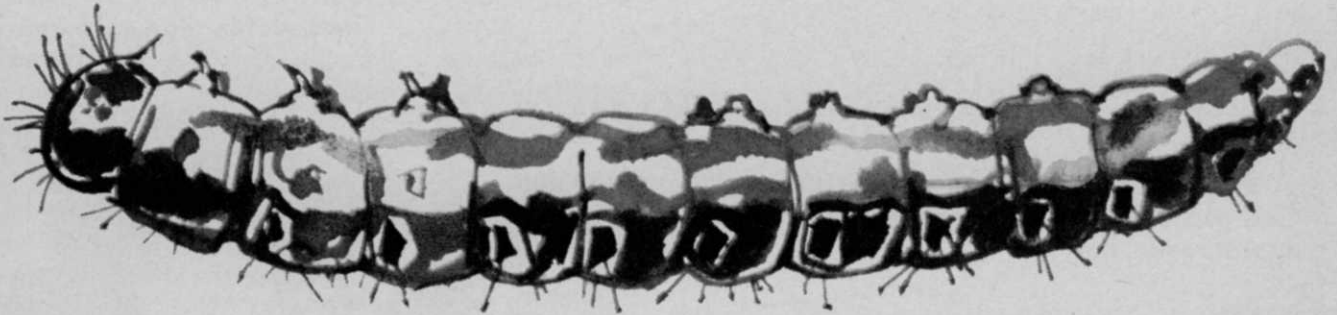
Dr. William R. Furtick, agronomist at Oregon State University, Corvallis, put it most succinctly at the recent national conference of the Weed Society of America. He called for recognition by university administrations of the critical needs of the field and the responsibility of members of the industry for bringing about this recognition. He believes effective educational programs are needed at the high school level to demonstrate the challenges of the field. Likewise undergraduate college students must be made acquainted with the opportunities of the field. And finally, Dr. Furtick believes universities, industries and government agencies must work together in solving the training program. He feels that many capable scientists now in industry and government could join their university co-workers in serving on graduate student committees and with special problems and facilities in maximizing the training potential. WTT not only agrees but feels such steps are mandatory.

WEEDS TREES AND TURF is the national monthly magazine of urban/industrial vegetation maintenance, including turf management, weed and brush control, and tree care. Readers include "contract applicators," arborists, nurserymen, and supervisory personnel with highway departments, railways, utilities, golf courses, and similar areas where vegetation must be enhanced or controlled. While the editors welcome contributions by qualified freelance writers, unsolicited manuscripts, unaccompanied by stamped, self-addressed envelopes, cannot be returned.





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# Highway Maintenance

*Editor's Note: Recognizing that highway maintenance problems are complex and varied in the industry WTT will from time to time carry experiences of how states in various parts of the nation are approaching the tasks of economically and efficiently keeping their highways safe and beautiful. Reports in this issue are made with the help of the Kentucky Division of Roadside Development and the Massachusetts Department of Public Works.*

## Phase I. Task-Force Initiate

**A midwestern state reports on organizing and planning for chemical weed control on a statewide basis.**

KENTUCKY has turned to chemical spraying for highway weed control. The Department of Highways through its Division of Roadside Development has initiated a carefully planned operation for the entire state. Results after the first year spell success.

In a special report to WTT, J. M. Phillips, director of Public Affairs for Kentucky's highway department, credits widespread support for initial progress.

Kentucky's highway department expected some questions regarding an all-out spray program. But recognizing that it had a job to do, the decision to spray was made and a careful

**Spray rig safety devices** are important in Kentucky's highway equipment. Note mask over face to protect against drifting materials, communication system which keeps operator in touch with driver, and mandatory seat belt. Operator is Wilber Sheriff of state's special spray crew.



step-by-step approach adopted. Management and details of ini-

tiating the program were turned over to the Division of Roadside Development.

A firm policy for program control was established. Simply stated, it was that any management of roadside vegetation should be done by using the safest, most effective, and economical method. Where chemical weed and brush control met requirements, these would be used. Indiscriminate spraying would not be tolerated.

To insure that this policy would be carried out, Chief Agronomist Jim Griffin, under the direction of K. C. Arnold, head of the Division, was named to guide the chemical phase of

*(Continued on page 10)*



**Special crew training** for Kentucky involved bringing key men from 12 state districts to central office during the season as need indicated. Division of Roadside Development found central training sessions provided opportunity for foremen and others to trade experiences gained as program progressed.



# Multiphased Management Task Faced By Our 50 States

## Phase II, Project Utility

**An eastern state reports on highway maintenance aimed at both safety and beauty.**

**M**ASSACHUSETTS ties safety and beauty together in a practical approach to highway roadside development.

In reporting on the Bay State program, Joseph L. Beasley, highway landscape supervisor for the Department of Public Works, states that new visionary thinking and new approaches in roadside development can enable the industry to conceive and prepare roadsides for future generations.

Highways, Beasley says, are wide corridors passing through our countryside. After many years of practical experience in the field and dozens of completed projects, he feels that prior to, and after highway development, there is a need for adequate land acquisition in order to fully protect this corridor. Proper development will then improve this corridor.

Beasley does not believe that trees can be planted just for the sake of planting trees. In Massachusetts, there is a reason and need for every tree, shrub or yard of mulch used. Though it may appear that larger than necessary quantities of planting materials are being used in the Bay State program, he points out that the amount is only 30% of the total needed to replace the areas stripped of plants and trees during construction of new highways.

One goal of the program, which is in line with President Lyndon Johnson's beautification program, is to salvage all remnants of land left after a highway has



**Example of formal planting** in the Massachusetts program is this interchange located at intersection of Routes 128 and 37 near Braintree. Joseph L. Beasley, Department of Public Works, reports that bridge abutments, including bed plantings and individual trees are mulched with 3 inches of wood chips.

been constructed. Both those pieces of land in urban and rural areas are used as small parks or planted with trees or shrubs for posterity. Emphasis in urban areas is for more large-scale landscaping, including greater scope and use of larger plant material.

Roadsides on urban sections of

the Interstate System are usually narrow. This limits possibilities in development. Careful study and use of specialized plant material is needed to develop them. Each stretch of highway and each interchange presents an individual problem. Many times plant-

*(Continued on page 11)*

**Roadside rest area** near Swansea on Route 195 contains successful planting with wood chip mulch. Massachusetts plan calls for giving prime consideration to shade trees in such areas. Note evergreens and natural growth in background.





## **Kentucky Program**

(from page 8)

turf management. Assisted by regional agronomists, he worked closely with spray crews.

Foremen and special crews were selected and trained via special field days. First choice for spray crew foremen, one for each of the 12 state highway districts, were foremen of existing special crews, since they knew local highways, residents and terrain. Where such men were not available, prospects were carefully screened. Foremen, in turn and with the help of agronomists, selected members of their crews.

### **Intensive Training At All Levels**

Intensive training was given foremen in a 5-day program at the central office. Department agronomists with the help of technical consultants schooled leaders in every aspect of the new Kentucky program. Foremen were prepared to drill crews on procedures and in use of equipment on return to their districts. One phase of the policy was that no application of spray materials be made until crew members understood the necessary methods and procedure.

Foremen were further charged with the task of deciding what spraying needed to be done in their own districts. With their crews, and accompanied by an agronomist, they covered every mile of highway right-of-way in their districts. Purpose of this phase of the program was to spot the type weeds and brush, where located, and control for each. Logbooks were compiled as they proceeded. These logbooks then became a work plan, plus becoming the basis for a proposed budget to finance the coming year's work.

A by-product of this mile-by-mile inspection of the rights-of-way was job appreciation. Foremen and crews alike developed an awareness of the importance of the program and how it would contribute to the safety and beauty of Kentucky's highway system. This background and training proved to be vital in success of the program. Men who

would do the work were made to realize that changing weather creates limitations on spraying, that seasonal effects and growth habits of plants must be understood. A work plan laid out a year in advance and based on familiarity with the areas to be treated aided foremen and crews in applying their new and first-hand knowledge.

For example, weed and brush control was to be handled in such a way that it would contribute to highway appearance, and certainly not detract. Indiscriminate spraying to kill tall brush would not meet this criteria. Thus a rule was developed that no plant more than 3 feet tall would be sprayed while in leaf. Procedure was to cut and then treat the stump. Tall brush could be sprayed while dormant, then removed the next season.

### **Suitable Equipment A Part of Plan**

During the period when crews were being picked and trained, selection of suitable equipment demanded attention. Safety to operators and protection of desirable plants in areas to be sprayed were factors. Equipment was purchased which would deliver high volume at low pressure, to insure large droplets so nozzled as to provide careful control of spray pattern. The new equipment also included a seat mounted at the rear of the spray boom which would provide the operator with visual control of the spray. An intercom connection with the truck driver provided an extra margin of safety. Equipment was also selected for adequate capacity, simple design, and rugged construction. Safety

belts for operators were musts. Spray trucks were lighted and marked for safety.

Climate and farm areas in Kentucky require chemical formulations of low volatility. To keep the program simple and manageable, materials which were useful for both foliage and dormant treatment were sought. Specifications along these lines were written and bids were asked from suppliers. Successful bidders were asked to maintain a close working relationship in areas where their products were being used.

As the program began to develop, foremen and agronomists were each asked to begin compiling a handbook. Into these handbooks went operational memoranda, informational materials from the industry, sprayer calibrations, legal guidance and records.

Major evaluation of the entire program was made at the end of the year. Each foreman was asked to evaluate his own work area and all foremen brought together to exchange ideas, information and experiences. Overall results are encouraging and Department thinking is to enlarge and improve the program, at the same time maintaining current policies and procedures. Public acceptance is indicated by the rarity of complaints during the past year.

A major aspect which will continue is allowing for the natural revegetation of native plants in areas where such is desirable and fitting. This type approach is not only saving maintenance dollars but is helping new highways to become more a part of the natural landscape.

---

### **Steps In the Kentucky Highway Maintenance Plan**

1. Recognition and study of the problem.
  2. Assignment of an agronomist to guide chemical use.
  3. Careful selection of a crew foreman for each district.
  4. Intensive training of foremen.
  5. Handpicking and training of crews.
  6. Equipment selection and procurement.
  7. Determining specific problem areas by district and development of logbooks.
  8. Setting up work schedules one year in advance.
  9. Compiling of handbooks by foremen and agronomists during course of the year.
  10. Evaluation meeting at end of year and policy determination by Department.
-