

Minimal Cost Maintenance for Indiana Roadsides

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INTRODUCTION

With the development of the interstate system, the management of turfed roadsides has become an increasingly important function of the Highway Department. Divided lanes, median strips and broad rights-of-ways are an integral part of the design of the modern highway and the management of turfed roadsides is no longer a minor consideration of roadside maintenance.

What happens when roadsides are not maintained in a turfed or semi-turfed condition? Even with careful landscaping and restricted mowing, areas which are not maintained will revert back to natural and native vegetation. Tall weeds and wild grass will kill the turf by shading only to die back during the winter to leave patches of bare soil open to erosion. In as little as one year, our observations reveal that tree seedlings and root sprouts will become established on unmaintained rights-of-way and, after a number of years, add a hazardous condition to an otherwise safe highway. When this happens, the trees will have to be removed at considerable expense and the turf reestablished to prevent additional erosion. The cost of tree removal and reestablishment of turf will far exceed the cost of a modest annual maintenance program.

FALL APPLICATION OF 2, 4-D

Implementation of research results obtained under the Joint Highway Research Project has established the effectiveness of fall applications of herbicides to control problem weeds along roadsides. Applications are made from September 1 until the first killing frost. Only environmentally safe amine forms of the herbicide 2,4-D are required. As the first killing frost approaches, hard-to-kill, perennial weeds move all available materials into the underground parts. Herbicides applied at this time will reach the underground parts through the natural translocation activity of the plant at a time when these parts are most susceptible to the killing action of the herbicide. Dandelion, plantain, buckhorn, creeping charlie, wild carrot, wild parsnip, milkweed, Ca-

nadian thistle, dock and other problem roadside weeds are among those most susceptible to fall applications.

Environmental Safety

An important advantage of fall applications of herbicides is that of environmental safety. In the fall, desirable plants in cropland or gardens, shrubs and flowers in lawns, golf courses or recreational areas and in roadside plantings have completed their growth and are either dying, dead or dormant. Trees and shrubs are losing their leaves, and unlike the plants to be controlled, escape the herbicide. Problems of drift onto soybean or tomato fields are eliminated since the growing season is over. By the following spring soil residues are completely dissipated especially with the biodegradable herbicide 2,4-D.

High Kill Rate of Weeds

In 1971, approximately 1,500 linear miles of highway received a fall application of 2,4-D between September 15 and October 15 under the Spraying Program by Contract. Evaluations of test plots throughout the state showed the treatment to be extremely effective with weed control ranging from 85 percent to over 95 percent. Implementation of the fall spraying program resulted in a direct cost saving to the state of Indiana from the Herbicide Treatment Program by Contract alone of an estimated \$60,000 annually. These figures do not include increased weed control and safety or reduced mowing costs.

OTHER RESEARCH

Other research projects in various stages of completion include development of spot treatments for localized infestations of problem weeds; evaluation of mowing practices; vegetation control in expansion cracks and on stabilized shoulders; application of herbicides under asphalt surfaces; and evaluation of herbicides for environmental safety. Mechanical and chemical methods will be combined with the eventual goal of a three-year (environmentally safe) spraying rotation in combination with minimum mowing to give even greater cost savings and without deterioration of existing turf.

CONCLUSION

Rights-of-ways are designed for safety and convenience. They should be kept as corridors of open turfed areas to provide the features of safety, beauty and convenience for which they were intended. Maintenance of these broad turfed areas by mechanical and chemical methods must continue. We must maintain a healthy turf along Indiana roadsides but at the lowest possible cost to the state.