

REPORT OF PROJECT COMMITTEE ON TURF

John Monteith, Jr., Chairman

ROADSIDE PLANTING METHODS IN 1950

In the 20 years since the formation of the Roadside Development Committee there have been many changes in methods of planting along roadsides. The early planting was largely confined to placing trees and shrubs in important locations for general landscaping effects. In the last 20 years the emphasis has shifted to planting grasses and legumes, to establish a cover to protect the roadsides from erosion and at the same time to improve the general appearance of the highways.

In order to summarize some of the more important methods being used at present, a questionnaire was sent to all the state highway departments, through the several Division Coordinators, asking for information on methods used in establishing turf on roadsides. Replies were received from 33 states.

Of these 33, 28 gave figures in mileage of highway construction and the acreage of roadsides disturbed by construction operations during 1950. These 28 states reported 21,415 miles of highway construction. This construction resulted in grading and otherwise disturbing approximately 118 square miles of roadsides.

In some states roadside areas are simply graded and left without seeding or other treatment. Such areas are left bare but in some instances are, in time, invaded by native vegetation. However, during the year, in these 28 states, 72 square miles were seeded, sprigged, mulched, or otherwise treated after the rough grading was done. It is interesting to note that of this total of 72 square miles, the necessary work on 61 square miles was done under contract and 11 square miles were handled by force account.

Use of Topsoil

One of the significant changes in roadside planting methods over the last 20 years has been in the use of topsoil. In the early days of roadside planting, it was assumed that topsoiling was essential on all areas to be planted. In many instances, as much as 6 or 8 inches were used, even though the quality of the topsoil was extremely low. Specifications for topsoiling and establishing grass for roadsides were formerly based on common practices for the development of turf on lawns and other small areas, where topsoiling was considered essential.

The higher costs and increasing inaccessibility of topsoil have been discussed frequently at the meetings of the Roadside Development Committee. At these meetings it has been repeatedly pointed out that, in the interest of economy, the amount of topsoil could be greatly reduced, and in many instances could be dispensed with entirely. Cases have often been cited where excellent covers of turf have been established on subsoils without the use of any topsoil.

The effect of these discussions and observations is reflected in the reports

Of the 72 square miles of roadside work done in 1950, only 20 square miles were topsoiled. All of this was by no means topsoiling in the usual sense of providing a base for a seed bed. This 20 square miles included large areas in the south that were topsoiled with material containing living Bermuda sprigs expected to develop into a good cover of grass. Topsoiling in such instances serves a double purpose of providing topsoil and the most suitable planting material in a single operation.

One northern state reported an unusual amount of topsoiling. This state obviously used topsoil primarily as a base for seeding grasses and legumes and not for any sprigging material it contained. This single state surprisingly reported the topsoiling of almost as many acres of roadsides as the combined total of all other states returning the questionnaire. It nevertheless reported highway construction of less than $5\frac{1}{2}$ percent of the total mileage and only $8\frac{1}{2}$ percent of the total roadside acreage disturbed by the construction that was included in all the questionnaires considered in this summary.

Seeding Rates

The 28 states reported seeding a total of 49 square miles of roadside during 1950. Seeding rates varied from 20 to 200 pounds per acre, depending on the regions and the type of cover desired. Twenty-three of the states answering the questionnaire required seed analysis reports.

More Fertilizer Used

Much more fertilizer is used in roadside work now than was used years ago. The replies showed that 17 states used fertilizer on 45 square miles of roadside turf. The development of turf on subsoils without a cover of topsoil has been made possible largely through the use of fertilizers. As the proportion of topsoil has been reduced, the use of fertilizer has increased, since commercial fertilizer is a more economical source of plant food than is topsoil. It is significant that the state referred to above as using topsoil far more freely than any other state reported the use of no fertilizer whatever during the year.

The 10-6-4 grade of fertilizer that has been commonly referred to in the meetings of the Highway Research Board was the most widely used in 8 of the 17 states. The next most popular grades of fertilizer were: 6-10-4, 5-10-5, and 4-12-4. Each of these grades was used in 4 states. There were 13 other grades of fertilizer each used in only one state. The rates of fertilizing varied between 600 to 1,720 pounds per acre.

Soil tests for determining fertilizer requirements were used in 11 of 17 states that used fertilizer.

Mulching

The use of mulch for roadside work has been definitely on the increase during the last decade. The advantage of mulching has been frequently discussed in

the meetings of the Roadside Development Committee. It has repeatedly been pointed out in these meetings that the use of mulch and fertilizer makes it possible to develop turf on many subsoils without the use of topsoil, or with greatly reduced quantities of topsoil. It naturally follows therefore that a reduction in topsoiling is correlated with increases in mulching and fertilizing.

The value of mulching to prevent soil erosion has been well recognized for a long time. The extent to which mulch is now used is indicated by the replies to the questionnaire which show that during 1950 some type of mulch was used on roadside projects in 21 states on a total of 20 square miles, which is over one-fourth of the total treated roadsides area disturbed by construction during the year.

Straw and hay were by far the most common types of mulching materials. Locally, sawdust, tobacco stems, and stable manure were also used on limited areas where savings in costs no doubt favored these materials that were available near the projects.

The use of asphalt emulsion as an aid for the establishment of turf on roadsides has been given some publicity in recent years. However, replies from the questionnaire indicate it was used in only 4 states in 1950 and in these it had very restricted use.

Decrease in Sodding

Sodding has generally been less in use on roadsides in recent years, due partly to excessive costs, partly to the development of more efficient and economical methods for establishing turf, and also to the use of mulches for checking erosion. Nevertheless, during the year the states reported that 1.7 square miles of roadside areas were sodded. These were chiefly in drainage channels and other areas subject to extreme erosion.

More Use of Equipment

In recent years there have been frequent reports in meetings of the Roadside Development Committee of the use of spraying equipment for distributing seed and fertilizer along roadsides to reduce labor costs. There are now 6 states which use spray equipment for seeding and fertilizing.

Machines for spreading mulches rapidly and economically are now in use in a few states.