

## LATEST DEVELOPMENTS in ROADSIDE EROSION CONTROL

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A study of questionnaire replies received from 32 states indicates that there have been no exciting or spectacular recent developments in the field of roadside erosion control. It is encouraging to note, however, evidence of steady improvement, especially in practices relating to the application of seed, fertilizer, and mulch, and in methods of anchoring mulch.

The use of hydraulic seeders has become considerably more widespread and, with more general use, improvements have been made to increase their effectiveness. With machines now in use, the seed and fertilizer are placed in a tank of water, agitated into a slurry, and sprayed onto roadside areas. Results have been promising, and seeding costs have been reduced appreciably. Variations in nozzle design allow a "fire-hose" type of spray for distance, or a controlled uniform-width spray pattern for shoulders or other areas closer to the paved area. New York reports the distribution of granular fertilizer by air pressure. In Connecticut, two new seeding and fertilizing machines have been constructed. These are basically the same as those now in use, but an attempt has been made to improve performance by increasing pump capacity and the power of the agitator engine. The original machines were equipped with 3-in. centrifugal pumps driven by 22-hp. air-cooled engines, with 2½-hp. engines to operate the agitators. The new machines will be equipped with 4-in. pump assemblies powered with 25-hp. air-cooled engines. The agitator engines have been increased to 7½-hp. An attempt was also made to streamline the piping which conducts the material from the pump to the nozzle. It is expected that the changes will increase considerably the efficiency and performance of the machines.

Problems related to mulching continue to receive their fair share of attention. Experiments are being conducted to determine the effectiveness of asphalt emulsion, Krilium, and other materials as mulches. Wire-tied mat mulches and expanded aluminum mesh are being used by some states on steep slopes. Other materials being tried for mulching include ground slab wood with bark, sawdust, and tobacco stems. California reports that it is now specifying compaction of the outer surface of fill slopes during construction. This decreases the amount of loose soil on the surface which in turn reduces saturation and eliminates slumping of the outer layer.

Use of mechanical mulch blowers has become very general in several states. A great many improvements in design have been made within recent months. For instance, the Finn mulcher now can be equipped with an asphalt spray attachment. The asphalt is sprayed on the mulch as it leaves the machine, thereby eliminating the application of a "tie-down" after mulching. The simultaneous placing of mulch and asphalt results in a saving of both material and time.

Experiments are being conducted with terramycin to determine its effect on seed germination under field conditions. It is believed that this material has possibilities in advancing the germination of certain grass seeds. Ohio has been

using seed treated with a disinfectant by the seedsman at an additional cost of about one cent per pound.

In several states continued studies are under way to evaluate the properties of various soil conditioners.

Reports from the various states indicate that many problems in roadside erosion control remain to be solved. Some of those which appear to have more or less general application are being listed with the hope that all possible contributions toward a solution will be forthcoming.

1. The cost of maintaining turfed shoulders as compared to hard-surface treated shoulders.

2. Under what conditions should woody-type plants be used to provide permanent low-cost slope protection? Grasses and legumes generally require some periodic maintenance to insure thrifty ground cover that will resist erosive forces. Initial costs are higher, but when deeper-rooted shrubs and vines are established they require little or no maintenance.

3. More information on deep-rooted low-growing grasses or legumes for steep slopes that cannot be mowed -- something less ragged in winter than sweet clover, *Sericea Lespedeza*, etc.

4. Improvement in techniques for seeding and mulching the higher portions of steep slopes (1:1 and  $1\frac{1}{2}$ :1).

5. The advantages vs. the disadvantages of nurse crops. Does the practical advantage of a quick ground cover offset the detrimental effect of nurse crops (such as rye and oats) on permanent species?

6. Is lime as essential for roadside erosion-control work (even for legumes) as we have assumed?

7. Information on an inexpensive method of preventing erosion on new fill slopes until vegetation is established. One state reports the use of a blanket of 4 in. of clay on fills composed mostly of sand. This is then fertilized heavily and seeded.

8. Methods of preventing wind-blown sand erosion by means other than year-round snow fence.

9. One state wants information concerning a suitable cover for extremely sandy slopes which have been designed in such a way that penetration of moisture is necessary.

10. More information to determine applicable fertilizer and grasses for different soil classes. This should tie in closely with the pedological system of classification of soils of the U. S. Department of Agriculture.