



## Coating Green Slash . . .

### asphalt and wax prevent drying

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When the forest manager cannot burn slash immediately, he must find some way to keep the material dry until it can be safely burned. Dry slash has been kept dry by spraying it with asphalt and wax emulsions. These protective coatings have generally done the job.<sup>1</sup>

During one of the tests with dry slash, we also treated a few green slash piles immediately after they were cut.<sup>2</sup> The results suggested that it might be just as effective to coat green slash for later burning as it was to treat dry slash. If this were the case, burning and slash disposal costs might be reduced because slash could be treated when cut and piled, not at some later date when treatment would be more costly. To find out if this were true, we made further tests.

In experiments on the Stanislaus National Forest, near Sonora, Calif., in 1965, we found that not more than half the treated green slash piles burned satisfactorily. In view of the

**ABSTRACT:** Dry logging slash has been successfully kept dry for later burning by spraying it with asphalt and wax emulsions. The same treatments were tried on green slash. Tests made by applying SS-1 grade asphalt emulsion and a lumber wax on green slash showed that these protective coatings prevented the slash from drying satisfactorily.

**RETRIEVAL TERMS:** Slash (green); ignitability; moisture content; coatings (protective); asphalt; wax (lumber). Line Project: 2104.

cost of asphalt and wax treatments, we cannot recommend coating green slash as an aid to slash disposal burning.

#### The Study

Material used in the test consisted of 32 piles, each 5 feet in diameter by 4 feet high, of mixed, freshly cut conifer slash. Cutting was done while constructing fuel-breaks on the Stanislaus National Forest, in July 1965. Eight of the piles were immediately coated with SS-1 grade asphalt emulsion in a 1:2 asphalt-water ratio, and eight with lumber wax in the same ratio. These mixtures had produced satisfactory results in tests with dry slash. The remaining 16 untreated slash piles were paired with the treated piles and used as controls. We applied the protective coatings with a small asphalt pump which forced the emulsion through a 3/8-inch hose line and spray nozzle. Each treated pile was uniformly sprayed with about 8 gallons of solution.

The piles were burned on December 15, 1965 after 18.5 inches of precipitation had fallen. We used a drip torch to ignite the perimeter of each pile, and fired the paired coated and uncoated piles together.

We collected the following data:

<sup>1</sup>Kirkmire, N. *Report on preliminary tests of waterproofing sprays for logging slash*. 1961. (Unpublished report on file at Wash. Forest Protect. Ass., Seattle, Wash.)  
McNie, John C. *The role of water in burning right-of-way debris*. 1963. (Paper presented at annual meeting, Western Forestry and Conserv. Ass., December 1963.)

<sup>2</sup>Schimke, Harry E., and Murphy, James L. *Protective coatings of asphalt and wax emulsions for better slash burning*. U.S. Forest Serv. Fire Control Notes 27(2):5-6, 15, illus. April 1966.

- Time required to ignite each pile--to get the fire burning independently of ignition fuel.

- Burning time--the time after ignition until the fire was out, either because fuels were consumed or because they would no longer burn.

- Degree of slash consumption by the fire.

- Average fuel moisture content of the slash from randomly selected samples from each pile.

### Results and Conclusions

Only 50 percent of the asphalt-coated piles and 37-1/2 percent of the wax-coated piles burned satisfactorily. Except for some fine fuels, only 12.5 percent of the uncoated piles burned. In the earlier dry slash tests, 91 percent of the treated piles had burned satisfactorily during a safe burning period following winter rains.<sup>3</sup>

<sup>3</sup>Schimke and Murphy. *Op. cit.*

The coatings affected the moisture content of green slash in two ways: (a) they reduced drying during the July to October period, and (b) they cut down the moisture absorbed by the slash during the winter rainy season. Percent of fuel moisture in the green slash at burn time was as follows: asphalt coated, 25.8; wax coated 18.2; and control, 40.8.

Wax was more effective than asphalt in reducing absorption of moisture from outside sources, yet the asphalt-coated piles burned better. Wax coatings penetrated the slash more deeply than did asphalt, and formed a stronger barrier to the entry of moisture. But wax also produced a surface on the fuels that ignited less readily than the asphalt-treated surfaces. Once the larger wax-coated slash was ignited, it tended to burn hotter and cleaner than other slash. Only wax coated-slash piles in this test burned completely so as to be rated "very satisfactory."

### The Authors

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