

FEED TURF

WITH
NITROFORM®
organic nitrogen...

... which provides up to six times more turf food than activated sewage sludge; and provides up to ten times more than some organics. Nitroform® is the best organic fertilizer buy for its nitrogen efficiency, for its labor-saving, and for its economy per nitrogen unit.

Available as 38-0-0 for direct application, and in formulations as a balanced fertilizer, Nitroform® nitrogen is long-lasting, nonburning, and nonleaching. It is a good source of nitrogen for turf and all plants that need sustained feeding.

LOOK FOR THE **BLUE CHIP®** TAG, OR THE WORD **NITROFORM®** ON THE FERTILIZER BAG to be sure that you are getting at least 50% Nitroform® nitrogen.

WEED CRABGRASS

WITH
AZAK®
Herbicide

AZAK® is designed for pre-emergence application on established turf areas to prevent seed germination and initial growth of crabgrass. Azak® is economical too; a single 12½-pound bag will control crabgrass all season in an acre of turf ... 43,560 sq. ft.



STH 70-5

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19899.

the day was labeled Black Tuesday and the Lane County Air Pollution Control Authority received 2,000 protesting telephone calls. Finally, Gov. Tom McCall declared a health and safety emergency until atmospheric conditions improved.

Burning Tower Tests

Dr. Ellis Darley of the Statewide Air Pollution Research Center, University of California at Riverside, has investigated both rice and grass stubble fires, and other agricultural fires, for several years. Darley and his associates use a burning tower which permits them to measure the smoke ingredients from sample fires. The fires are laboratory versions of those which burn the same ingredients on farms.

Scores of such fires have been tried in the burning tower, and the results show conclusively agricultural burning is a negligible source of photochemical air pollution when compared with the emissions of the internal combustion engine.

Darley hesitates to apply his findings directly to the type of burning which might be conducted by a nurseryman in destroying a city tree — he never has tested the pollution output of any fuel more than two inches in diameter. He is certain the thicker the fuel, the longer the fire will burn and the more pollutants will be created, though how much more is in doubt.

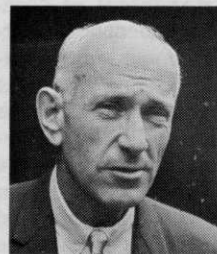
While the State Air Resources Board continues to rely on estimates of such pollutant levels compiled prior to Darley's work, Darley is convinced the estimates are high, even for heavier materials such as orchard trees. "Their estimates don't come out with our measured figures," he said.

Ideal: Hot Fire, Dry Fuel

In general, Darley said the hotter the fire and drier the fuel, the less the pollution. The cooler the fire and wetter the fuel, the greater the pollution. If a fire merely smolders, particulate air pollution can become highly significant.

Fruit prunings, he found, yielded 13.9 pounds of hydrocarbons per ton of fuel burned, barley straw yielded 18.2 pounds per ton burned and native brush yielded 6.7 pounds per ton burned. By comparison, the gasoline engine yields 130 pounds of hydrocarbons per ton of fuel burned, he reported.

For one hydrocarbon, the photochemically active ethane, Darley found the value differences less diverse: 2.7 pounds per ton of ethane were produced in the fruit pruning



Dr. Ellis Darley

Statewide
Air Pollution
Research

University
of California
Riverside

fire against about 7.8 pounds from auto exhausts. Estimating some 151,000 tons of fruit prunings, barley straw and native brush are burned per year in the San Francisco Bay area, Darley estimated some 950 tons of hydrocarbon effluent would be generated per year, an average of 2.6 tons per day. Automobile emissions greatly exceed that figure in the same area on a per day basis.

Withall, the indisputable fact remains that agricultural burning causes substantial amounts of particulate air pollution. Those who light such fires are creating a conspicuous source of pollution, and the finger of blame is easily pointed toward them. The fact that particulate pollution is less dangerous, in many instances, than is automobile-caused smog, often makes little impression on the general public.

To continue burning diseased trees, regardless of how necessary the burning may be to eradication of a disease, nurserymen and tree crewmen will have to carefully marshal facts, arguments and burning procedures which are as pollution-free as possible.

Fast-Growing, Salt-Tolerant Pine Shows Promise at MSU

Michigan foresters and commercial landscapers may soon have a new pine tree.

According to J. W. Wright, Michigan State University forestry professor, the new hybrid cross between Austrian pine and Japanese red pine shows promise for use in pulpwood operations and in roadside plantings.

The hybrid was first discovered in 1961 by MSU foresters at the W. K. Kellogg Forest near Battle Creek. Hybrid trees were growing naturally in an open area between mature stands of Japanese red pine and Austrian pine.

"These hybrids show excellent growth," says Wright, "growing faster than either parental species."

Other characteristics which make the hybrid potentially useful include earlier reproduction, good recovery from transplanting shock and the possibility of tolerance to salt.