



Routing the Ragweeds

► VICTORY in hayfever-ridden mankind's hitherto hopeless war against ragweeds seems to be in sight, as a result of experiments with herbicidal sprays conducted by Dr. B. H. Grigsby, of Michigan State College, who is also botanist to the Michigan Department of Health (*Science*, July 27).

Two chemicals seem to offer most promise in the campaign. One is dinitro-secondary-butyl-phenol, known for greater convenience as G-412. The other is penta-chlor-phenol, whose convenience-designation is G-410. Both are applied in kerosene solutions, with pressure-spray machines.

G-412 gave the most complete kill, Dr. Grigsby reports. The vegetative portions of the plants, as well as the flower spikes, turned brown, and pollen release was stopped. G-410 gave a 75% kill in 12 hours, and permanently stopped pollen production, but some of the stems remained alive and continued growth until frost.

Despite the lower killing results reported for G-410, this compound may prove the more desirable for practical use. Dr. Grigsby points out that there is some objection to the immediate and drastic wiping out of ragweed in some spots because, pest though it is, ragweed is given to growing on loose, newly exposed soil and serves as a temporary check on erosion. The two commonest ragweed species are both annuals, so there is no harm in letting them live, if only their power to produce clouds of sneeze-provoking pollen is taken away.

The pollen-stopping chemical sprays cannot be used without caution or limit. The kerosene solvent itself is harmful to many cultivated plants. The chem-

icals are not toxic to human beings or domestic animals, but they do damage crop plants and so cannot be sprayed indiscriminately over fields and gardens. However, some of the worst ragweed concentrations occur along highways and railroad tracks, in over-grazed pastures, and on neglected vacant lots, rubbish dumps and other wasteland areas in and near cities. Here the weed-killing spray-artillery can be given an unlimited field of fire.

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CHEMISTRY

Soybean Oil Production Equals That of Cottonseed

► THE SOYBEAN is now Americanized, and soybean oil, its principal commercial product, is now manufactured in the United States in a quantity equal to that produced from cottonseed, which long was America's greatest source of edible oils. The soybean oil industry in America is only about two decades old, although imported soybean oil has been used for much longer than that. Wartime conditions greatly boosted production, but peacetime uses will probably keep up the present rate.

Soybean oil is used in the United States for shortening, margarine, other edible products, soap, paints and varnishes, linoleum and oilcloth, and in printing inks,

but its principal use is in foods. Approximately 96% of the 1943 production was used in edible products, according to O. H. Alderks of the Soybean Research Council, reporting in *Chemical and Engineering News* (July), published by the American Chemical Society.

Some 891,000,000 pounds of soybean oil was used in 1943 in food products, he says. It has now replaced a great amount of cottonseed oil in shortening, the cottonseed oil having been shifted to other edible products. In margarine it has replaced all coconut, babassu and similar oils, and accounts for about 40% of margarine fats. In salad oils and cooking fats, 124,000,000 pounds were used in 1943, replacing the unobtainable coconut and palm oils of the Pacific area.

Soybean oil has a number of desirable qualities, Mr. Alderks states. It has generally low bleaching costs, whiter products, good rancidity behavior, and good consistency behavior. Its undesirable characteristics are poor flavor stability, particularly of the lower-grade oils, and additional cost to hydrogenate.

Flavor stability will improve, according to Mr. Alderks, with an improvement in the entire soybean industry beginning with improved farm practices, better and quicker harvesting, prompt drying when necessary, better storage, and improved methods of oil extraction.

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