

## Fungicidal Compounds for Low-Volume Application Expected

Ag chemical manufacturers told to concentrate more sales effort on vegetable processors

MONTEBELLO, QUE.—Improvements in efficiency of preparation and application of present fungicides and adaptation to low volume use will be the two main lines of development of agricultural fungicides, according to R. A. Ludwig of Science Service Laboratory. Future materials will show much greater specificity, with an increased margin between toxicity to fungus and host, he told the second annual meeting of the Canadian Agricultural Chemicals Association.

Application of antibiotics to agricultural problems, such as the outstanding success of streptomycin in control of fireblight, may bear fruit in unexpected directions, said Ludwig. Ultimately, our chemical knowledge of antibiotics may lead to development of better fungicides. Fungicides are plants, much more closely related to the plant host than an insect parasite is, and so correspondingly more difficult to fight by chemical means. Although progress has not been as spectacular as with insecticides, there has been substantial forward movement in the field.

Present fungicides are not really efficient, adds Ludwig. Radio-tracer studies have shown that fungi must absorb relatively large amounts of fungicide to be affected strongly enough.

In many cases, the chemical nature of the actual toxicant may be different from the fungicide as applied. Ethylene-bis-dithiocarbamates are oxidized on exposure to air to a yellow compound, different from the original. Ethylene thiuram monosulfide decomposes to a highly unstable and toxic isothiocyanate.

**Grain Problems.** Lack of an effective herbicide for wild oats is one of the most pressing needs of the grain-growing areas of western Canada. Cultural practices such as hand pulling have been the most practical control methods so far, reported James Farquharson, a seed grower of the afflicted area. Farquharson has been told that one has been

found, but is not yet available because of incomplete testing and prohibitive cost. The area sprayed in western Canada could probably be doubled if an effective wild oat spray can be developed, declared P. O. Ripley, chief of the field husbandry division of the Canadian Department of Agriculture.

By extremely careful timing, wild oats can be controlled by highly selective use of maleic hydrazide, according to H. Douglas Tate of U. S. Rubber Co. This has been done in barley fields by spraying oats just after emergence, before the barley is seeded. Other potential uses of maleic hydrazide are airplane spraying of sugar cane in Hawaii at time of flowering. Such treatment has increased yields by as much as 2 tons per acre, declared Tate. The potential market for maleic hydrazide in the tobacco industry in the U. S. and Canada alone is 3 million pounds per year. Use

on tobacco inhibits tapping and suckers and increases crop values sharply.

While modern herbicides are very helpful in controlling a great many weeds, it is still necessary to cultivate fields to control resistant weeds, said Farquharson. In fact, removal of competition by killing susceptible weeds permits the resistant weeds to become a greater problem than ever.

Crop maturity is somewhat retarded by 2,4-D spraying, and this, plus lack of sunshine this summer, heavy rains, and abundant rust made sprayed crops suffer more than those which had not been treated. Later maturity exposed crops to unfavorable conditions longer than their normal growing period, declared Farquharson.

Present research at the University of Alberta indicates that genetic make-up of cereal crops may be affected by use of 2,4-D. If this work is confirmed, seed growers like Farquharson would be denied this invaluable ally in their weed control work. If the purity and true breeding characteristics of a variety are not maintained by the seed grower, his product has no value to the commercial grain farmer. The Canadian Seed Growers Association, of which Farquharson is president, discourages 2,4-D use on

Members of a panel discussing results of a research program on pest control run by Canadian Department of Agriculture were (from left) Robert Glen, panel chairman, of the entomology division; P. O. Ripley of the field husbandry division; A. J. Skolo of the botany and plant pathology division. W. A. Ross (not shown) of the entomology division was also a member of the panel





Luncheon speaker at the second annual meeting of the CACA was Charles Pettet, president of the Institute of Canadian Trade Association Executives

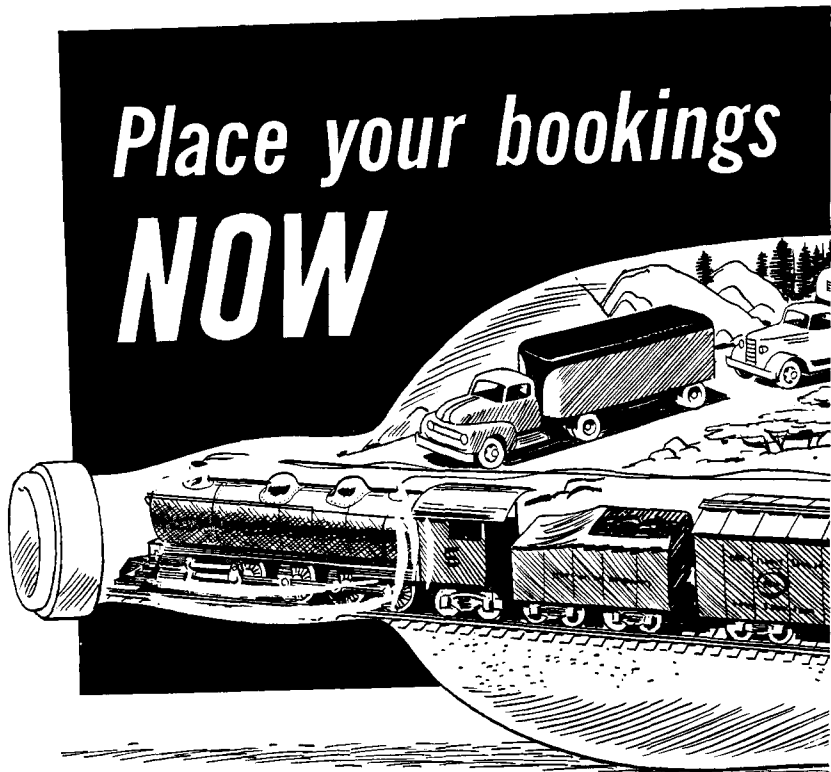
foundation and elite plots as a precaution.

Swarf bunt of wheat, ergot of many cereal crops, and loose smut of wheat and barley are some problems for which there is still no satisfactory solution. Control procedures have been developed, but none are cheap or practical. Grain farmers and seed growers alike would welcome reasonably priced and relatively efficient chemical control for any of these diseases, declared Farquharson.

**Fertilizing Vegetables.** Soil analysis laboratories for vegetable processors lead to better grower relations, higher crop yields (especially during years of poor weather), and higher quality produce. B. H. Goodwin-Wilson of Canadian Cannery Ltd. thinks a company soil analysis lab is necessary for the processor to keep up with his competition. Fertilizers are basic to quality and quantity, he said. Although it is sometimes hard to visualize the increases in yields due to fertilizers, increased profits are readily appreciated.

Processors are vitally interested in any new products that may increase production. In light of the acreage covered by processing organizations, it is somewhat surprising that agricultural chemical manufacturers do not concentrate more sales effort on them, says Goodwin-Wilson.

About 90% of the pea seed shipped to Canada or grown in Canada is treated with Spergon, reports Goodwin-Wilson. Orthocide is now being evaluated; lindane and dieldrin may be the answer to the seed corn maggot problem. All the seed used by Canadian canners is treated with fungicides, and some is treated with insecticides.



## and eliminate this bottleneck!

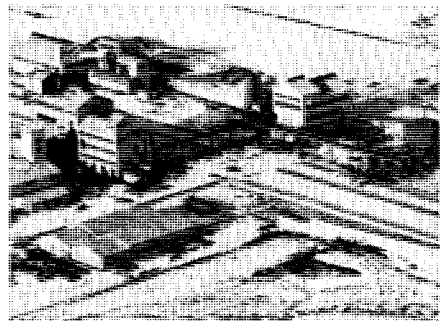
It's true that the new Garfield plant is now in full swing, building up an inventory of top grade, granular, high analysis (46%) Treble Superphosphate. But as in former years, the real bottleneck will be caused by last minute buying, and thus there will be needless delays due to overcrowded transportation facilities.

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