

expensive materials may not be warranted. Others countered (to the manufacturers' relief, no doubt) with the belief that we have not exhausted the possibilities of how to use them most effectively and that there is a general farmer market for them when the best methods of application are found.

Meanwhile, the search for informative

tests goes on. An early stand-by, extent of aggregation as determined by wet-sieving, seems to be loosing ground. Several noted that a crucial time along the route to high productivity seems to be the seedling stage, that once the plants get a good start, yields will be good, other factors being equal. For this reason, tests which show impedance to root and

shoot penetration are possible answers. Modulus of rupture tests are expected to play a more prominent role in the future. Big hurdle: No two plants act alike. Best attack: Continue empirical work with available tests until we have enough data for someone to find that correlation between yield and treatment the industry needs.

## Canadians Urged to Step Up Oil Seed Production

**Oil and oil meal by-products are a value to both industry and agriculture**

WINDSOR, ONT.—At the present time Canada produces only one third of the soybeans which she processes. Greater cultivation of this and other oil seed crops will not only provide industry with the needed oils, but also bring the farmer a profitable cash return, said J. C. Woodward, Canada Department of Agriculture, at the 36th annual conference of the Chemical Institute of Canada held here June 4 to 6.

Flax and soybeans are established crops in Canada, but there are other oil seed crops which have been grown successfully and have not come into general use. Among these are sunflower, rapeseed, and possibly safflower. Most important oil seed crop at the present time, said Dr. Woodward, is flax. Canadian acreage in 1952 amounted to 1,206,500 acres. Soybeans accounted for 172,000 acres. Rust cut down sunflower planting to 3500 acres, but a rust resistant strain should be developed by 1954. Rapeseed acreage was 18,500.

Soybeans are profitable in two ways. They can be raised as a cash crop or, if conditions warrant, they can be converted to a feed crop. The meal by-products are an important factor in livestock production. Sunflower seed hulls are being processed to make a fuel by one company. Rapeseed oil is obtained in good yield. At this time, rather than use this oil for edible purposes most of it is used for marine engines. Safflower gives a good edible oil and is also of interest to makers of protective coatings.

**Growth Regulators.** The most extensively used plant growth regulator is the weed killer, 2,4-D. There are other uses for chemical growth regulators, said Hubert Martin, Science Service Laboratory, London, Ont. He pointed out that it is now a common practice to induce the formation of seedless tomatoes through the application of chemicals. Hormones are used also to thin fruits. An excess of hormone will arrest growth.

This property is used to advantage in the retardation of the sprouting of potato tubers.

**Bread.** Poor flours can be improved in baking properties by the addition of wheat gluten powder. A process for extracting the gluten and spray drying it has been developed by W. B. McConnell of the Prairie Regional Research Laboratory at Saskatoon. The wheat starch is recovered and has many uses. The wheat gluten is expected to find its greatest use in the improvement of flours in certain backward countries. Six per cent gluten added to flour was fed to result in enhancement of baking qualities.

It has often been said that in the future an industry might be built up involving separate utilization of starch and gluten. Starch could be used as such or in a fermentation industry. Disposal of the gluten has always been the chief drawback to such a plan said Dr. McConnell.

Utilization for upgrading flour may now be feasible since the spray drying technique seems to be economical.

**Apple Carbon Dioxide.** A fixation of carbon dioxide by McIntosh apples takes place during the storage of the fruit. By employing carbon-14 labeled carbon dioxide, the amount of uptake of the gas was measured by N. Allentoff and his coworkers at the Department of Agriculture at Ottawa. The radioactivity ended up for the most part, said Dr. Allentoff, in the malic acid of the apple. Some of the carbon-14 was found in both the free amino acids and those obtained by hydrolysis of the alcohol insoluble nitrogen components.

**Rockweed.** In an effort to produce useful materials from the sea weed, *Fucus vesiculosus*, workers at the Maritime Regional Laboratory at Halifax have been carrying on a systematic analysis of the chemical constituents of the organism. Total nitrogen content varies from 1 to 3%, said D. G. Smith of the Maritime Laboratory. Free amino acids constitute 8 to 11% of the total nitrogen; polypeptides make up 7 to 8%. Most of the remainder seemed to be protein.

M. Louise Elder of Canadian Cannery, Ltd., first woman scientist to be elected to fellowship in the Chemical Institute of Canada, with E. A. Crockett (center) of Polymer Corp. and R. S. Jane of Shawinigan, CIC president

