

A major discovery at the Agriculture Canada Research Station in Lethbridge, Alberta, brings world food production a step closer to a type of self-fertilizing spring wheat.

Two scientists at the station — Ruby Larson, a wheat geneticist, and John Neal Jr., a soil microbiologist — have genetically altered a type of spring wheat so that it supports soil bacteria which convert nitrogen from the air into a form the plant can use as nutrient.

The bacterial process, called nitrogen fixation, usually involves bacteria that must live and work in harmony with small root nodules on legume plants such as alfalfa to convert nitrogen from the air into a natural fertilizer.

The scientists found for the first time in significant quantities free-living bacteria capable of nitrogen fixation in soil surrounding the roots of spring wheat.

If lines of wheat could be developed that encourage growth of such bacteria in the surrounding soil, it would have

far-reaching implications for nitrogen-hungry cereal crops that depend on chemical fertilizers to meet their needs.

The Lethbridge scientists, who reported their findings in the current issue of the British scientific journal, *Soil Biology and Biochemistry*, stated that they substituted chromosomes from Cadet wheat with a pair of chromosomes from Rescue wheat. Next, they isolated bacteria from soil surrounding the roots of the altered line of spring wheat, grew the bacteria in the laboratory, and tested them for nitrogen-fixing ability.

"We found the substitution line supported nitrogen-fixing bacteria in the soil environment around its roots. The parental varieties, Cadet and Rescue, did not," the researchers say.

"As far as we know, this is the first time free-living nitrogen-fixing bacteria have been found in substantial quantities in the root environments of spring wheat."

The scientific and agricultural excitement comes from the fact that the scientists genetically manipulated their wheat plants to support nitrogen-fixing bacteria. The findings they say, represent "a significant breakthrough".

Whether the bacteria convert enough nitrogen from the air to provide natural fertilizer for the wheat plants is still not known. Drs. Larson and Neal will try to determine if the soil bacteria around their substitution line of spring wheat can supply significant quantities of nitrogen to the plants.

If they can, the next question could be: is enough natural fertilizer being supplied by nitrogen-fixation to boost the nitrogen-dependent protein level in the plant?

Whatever the outcome, the door has finally opened a crack toward long dreamed-of cereal crops that can draw on nitrogen in the air to meet an essential part of their fertilizer diets.

FERTILITY REGULATION STUDIES IN CANADA, EGYPT AND INDIA

Three studies of the acceptability, effectiveness and possible side-effects of various forms of fertility regulation are being supported with grants totaling \$620,255 from the International Development Research Centre (IDRC), President W. David Hopper announced recently. The studies, which will take place in Canada, Egypt and India, will involve the co-operation of about 15,000 women.

A \$259,000-grant to the Canadian Committee for Fertility Research will enable this co-ordinating body to set up a scientific advisory committee, hold training seminars and implement several research studies, possibly including a survey of infertility.

A grant of \$273,285 to the Indian Council of Medical Research will cover the costs of ten teams studying the effects, both medical and psychological, of various methods of tubal ligation. The third grant, of \$87,970 to the International Islamic Centre for Population Studies and Research at Al-Azhar University in Cairo, will allow Egyptian gynaecologists to carry out clinical trials with Medroxy Progesterone Acetate (MPA) as a post-partum contraceptive.



Marie-Claire Blais

CANADA/BELGIUM LITERARY AWARD

Canadian novelist Marie-Claire Blais is the winner of the Canada/Belgium Literary Prize for 1976.

The \$2,000-prize is given annually to French-language writers with the award going in alternate years to authors in Canada and in Belgium. It is given on the basis on an author's total literary work rather than for one publication and is co-sponsored by the Governments of Canada and Belgium. The Canadian portion of the prize is financed by the Cultural Affairs Division of the Department of External Affairs, and administered by the Canada Council.

PREPARATIONS FOR 200-MILE FISHING ZONE

Fisheries patrols are being doubled this year to control fishing activity throughout Canada's new 200-mile fishing zone, which will be extended by January 1, 1977.

Fisheries Minister Roméo LeBlanc said recently that the Fisheries and Marine Service of Environment Canada, now carrying out 90 per cent of Canada's fisheries patrol work in offshore waters, would call more extensively on ships and aircraft from the Department of National Defence, which already provides substantial support. In addition, vessels from the Ministry of Transport fleet would become available regularly for this purpose.

During 1976 the number of patrol days by vessels on both coasts will roughly double to about 2,000. Off-shore patrols will be at sea about 500 days on the Pacific coast, and will double to about 1,500 days on the Atlantic coast. The number of boardings of fishing vessels at sea by Canadian inspectors will increase to between 1,200 and 1,400 a year permitting at-sea inspection of at least one-third of the foreign fleet and one-sixth of the Canadian fleet every month.