

Slippery injection frees fish from infection

A new vaccine developed by Canada's Connaught Research Institute could benefit commercial fish farmers and increase their production levels as much as 20 per cent.

The vaccine, called Vibrogen, offers protection against vibriosis, an infectious disease that is devastating to the commercial fish-raising industry.

According to Dr. Keith Johnson of the Connaught Research Institute, the vaccine could be administered in four ways: immunizing the fish in a bacterin bath, including the vaccine in the fishes' food, spraying the fish, or injecting the fish as you would a human or animal.

"Vaccinating a fish by injection, may be hard to imagine but, with larger fish anyway, it is quite realistic. After all, in aquaculture, the fish are often handled individually," said Dr. Johnson's colleague, Dr. William Paterson.

The new vaccine will be vitally important in protecting fish and thereby preserving an all-important source of protein. "A fish produces protein about five times more efficiently than does a steer," Dr. Johnson points out. "It's also cheaper to produce."

Dr. Johnson and Dr. Paterson are leading a team of specialized technicians at the institute in the research and development of ways to protect fish against certain devastating infectious diseases.

"If the world can be encouraged to turn increasingly to fish as a protein source," says Dr. Paterson, "it must abandon its historic dependence upon harvesting from wild stocks. Raising, not merely catching, fish is where the answer is to be found."

Fish helps world hunger

Raising fish, or "aquaculture", is now recognized as one of the keys to solving the growing problem of world-wide hunger. The Food and Agriculture Organization of the United Nations estimates that cultured fish production will increase from six million tonnes to 50 million tonnes in the next 20 years. At that time, according to estimates, the annual "catch" around the world will be 94 million tonnes. In North America, consumption of fish products has risen a reported 21 per cent in the past ten years.

In Norway, for example, Atlantic salmon are raised commercially; in China, carp; in the southern United States, catfish; and in Idaho and Oregon, US,



Fish — an important and long-neglected protein source. A new vaccine, called Vibrogen, will protect fish against infectious vibriosis, increasing production levels.

commercial operations raise trout and salmon.

The Japanese, however, provide one of the best examples of commercial fish-raising. They are now rapidly expanding their fish-growing enterprises which focus on the raising of yellow-tail, a species similar to the Albacore tuna. But commercial fish-raising to any large extent has not yet come to Canada, says Keith Johnson.

Disease control

One of aquaculture's biggest challenges is disease-control. The more densely fish are raised in tanks, ponds or pens, the more stressed they become. And stressed animals are always more vulnerable to disease, particularly vibriosis. Thanks to recent accomplishments at the Connaught Research Institute, vibriosis can at last be controlled and fish farmers' production levels dramatically boosted.

The Connaught Research Institute is the research division of Connaught Laboratories Limited, Canada's oldest producer of biological products for healthcare. From its facilities in Willowdale, Ontario, Connaught distributes worldwide a broad range of vaccines for both human and veterinary use. The company is also Canada's only manufacturer of insulin for diabetes control.

Incentives for gas use

Energy Minister Jean Chrétien has announced a five-year, \$25-million program to encourage the use of pipeline natural gas.

Use of this abundant, domestic fuel will reduce oil consumption and thereby contribute to the security of Canada's energy supply. Under the program, the industrial conversion assistance program (ICAP), the federal government will contribute 50 per cent of the eligible capital costs of converting appliances from the use of bunker fuel oil (No. 6) to pipeline natural gas.

Although the focus of the program is on industry, commercial establishments and private institutions will also be eligible. The program will be available in all provinces and territories, and will be administered by local gas suppliers under the direction of the Department of Energy, Mines and Resources.

Conversion work started between May 31, 1982 and the date of the official start of the program will be considered for a contribution, providing application is made within 12 months of announcement of the program.

ICAP is one of several federal government programs aimed at helping Canada reduce its oil consumption to no more than 10 per cent of the total energy used in areas other than transportation by 1990.

Canada awarded ski meeting

Canada has won the right to stage Interski XIII, an international meeting of ski instructors which will be held in 1987.

Canada was voted as the site for the meeting at Interski XII held recently in Sesto, Italy. This is the first time Canada will stage what the International Federation of Ski Instructors considers the Olympic Games of ski instruction.

The best ski instructors from 20 countries are expected to participate in Interski XIII, which will be held in Banff, Alberta. The meeting allows different nations to demonstrate, compare and discuss the latest advances in ski techniques and instruction, innovations, equipment, mountain maintenance and avalanche control.

During Interski XII, a nine-man Canadian team was unofficially rated as one of the top three teams in instruction in the world.