



Growing TOGETHER

THE AGRICULTURE AND ENVIRONMENT CONNECTION



Winter 2001, Vol 3, No 1

Nutrient Management Means Economic and Environmental Returns

Rasperry industry taking the lead

While environmental and economic objectives are often thought to be at odds, a unique initiative aimed at optimizing nutrient levels on raspberry fields in Abbotsford is drawing attention, both from industry and from government.

The Raspberry Nutrient Management initiative is a partnership between the B.C. Raspberry Council, Environment Canada Georgia Basin Ecosystem Initiative, and the B.C. Ministry of Agriculture, Food and Fisheries. The objective is simple: to optimize the amount of nitrates raspberry growers use on their fields, not only to minimize the effect on the environment; but also to maximize their return.

B.C.'s raspberry industry is a major contributor to our provincial economy with average annual farm gate sales of nearly \$20 million. The industry is centred in the Abbotsford area, where approximately 200 raspberry growers farm over 4,500 acres of productive sandy/loam soil. Those same soils conditions also raise concerns over the potential for nitrates from fertilizer and manure used in farming to find their way into the local groundwater.

Raspberry producers are voluntarily participating in a program of annual post-harvest field tests. Soil is sampled after harvest and the nitrate level is measured. For growers with high nitrate levels, they have an opportunity to reduce the amount of fertilizer used in the following year, thereby enhancing their returns.

"If a crop is grown properly, there shouldn't be a residual nutrient problem," comments Maria Jeffries, a raspberry grower who is leading the program for the B.C. Raspberry Development Council. "Many of our growers have benefited from the research and information provided."

"The survey program, which we hope will be ongoing, is a tool for growers to get feedback on what they're doing and therefore fine-tune their nitrogen program," says Mark Sweeney, B.C. MAFF's Berry Industry Specialist. "The idea is to reach the optimal level that will benefit the crop and not leave an excess in the soil that can find its way into the groundwater."

That's an idea that we can all support!

For more information on the Raspberry Nutrient Management Initiative, please contact: Mark Sweeney, Berry Industry Specialist, B.C. MAFF; tel: (604) 556-3056, e-mail: Mark.Sweeney@gems6.gov.bc.ca

RASPBERRY NUTRIENT MANAGEMENT

Sound soil and nutrient management is essential for top yields and protection of ground and surface water resources. Successful raspberry production also requires careful attention to:

- Integrated pest management
- water management
- pruning and training
- harvest management

Field Stored Manure

- have manure delivered to the field as close as possible to application time (mid-February - mid-April)
- DO NOT spread manure on bare fields in fall or winter
- do not store within 30 metres of a watercourse or well
- cover field stored manure from October 1 to April 1
- cover is not required if weather is to be spread within 2 weeks

Manure Spreading

- apply manure from mid-February to mid-April
- apply no more than 7 cubic yards/acre
- applying to alternate rows
- reduces risk of over-application
- incorporate into soil as soon as possible

Cultivation

- subsoil in fall to break up compaction and improve drainage
- protect soil structure - work soil only when necessary
- over-use of rototillers destroys soil structure and leads to compaction
- avoid working soil on very dry soil

Irrigation

- irrigate according to crop need
- trickle systems allow for uniform application of water
- recirculate irrigation pans to avoid overwatering

Cover Crops

- seed barley at 40 kg/acre from mid-August to September 10

How much fertilizer does the crop need?

- determine crop needs by:
 - late summer soil test for nitrate nitrogen
 - spring, account for nitrogen from cover crops
 - adjustment for all nutrients supplied by manure
 - adjustment for nitrogen provided in irrigation water
 - spring soil test for phosphorus, potassium and micronutrients
 - balance nitrogen, phosphorus, potassium, and micronutrient needs based on tests and recommendations from the B.C. MAFF Berry Production Guide and your crop adviser
 - for best crop response, split your fertilizer recommendation into two applications

Manure (cattle) needs a minimum of 150 kg nitrogen/ha applied from all sources.

The best nitrogen can cause:

- excessive growth
- increased fruit rot and other diseases
- delayed dormancy leading to winter injury
- leaching of nitrogen resulting in concentration of groundwater

Soil structure encourages healthy roots.

Covering manure keeps nutrients from leaching.

Uniform moisture results in high yields. Excessive or uneven watering can result in nutrient loss and terminal disease problems.

Environment Canada, Georgia Basin Ecosystem

RASPBERRY

BRITISH COLUMBIA, Ministry of Agriculture, Food and Fisheries

The objective of the Raspberry Nutrient Management Program is to optimize the amount of nitrates growers use on their fields.

Pesticide Program Sparks Big Returns

B.C. pesticide return program a success



The British Columbia Pesticide Return Program recently held a number of pesticide collections on Vancouver Island, like the one featured above in Sidney.

A co-operative effort between industry, government and British Columbia's farmers has resulted in the safe destruction of a substantial amount of unwanted and obsolete pesticides.

The British Columbia Pesticide Return Program provides B.C. farmers and ranchers an opportunity to freely dispose of unwanted and obsolete pesticides, thereby reducing the potential for contaminating our local environment.

Over the past year, there has been an overwhelming response by local farmers to pesticide collections sponsored by the program in the Fraser Valley and Vancouver Island regions. Approximately 60

cubic yards of solid pesticides and 280 two-hundred litre drums of liquid pesticide containers were returned through the program.

"The number of farmers who participated, and the amount of pesticide they brought in for disposal far exceeded our expectations," says Madeline Waring, Pesticide Specialist, B.C. Ministry of Agriculture, Food and Fisheries.

Plans are currently underway for a collection in the Okanagan and in West Kootenay in the spring of 2001. It is anticipated there will be a number of collection sites throughout the Okanagan and Creston in order for orchardists and farmers to dispose of their

See PESTICIDE RETURN pg. 4

Pesticide Return Program a Success

unwanted pesticides. Area farmers should watch for details in their local newspaper and upcoming producer newsletters.

Cam Davreux, Vice President of the Crop Protection Institute of Canada, said the institute

implemented successfully in other regions of Canada because it's good for farmers, good for

"The B.C. Investment Agriculture Foundation provided funding for this project since we feel that it will be a great benefit to the environmental health of these regions," said Gary Kenwood, Chair of the Foundation.

The Pesticide Return Program is jointly funded by the B.C. Investment Agriculture Foundation, the Canadian chemical industry's Crop Protection Institute and the Environment Canada Georgia Basin Ecosystem Initiative. Waring helps to oversee the program in cooperation with Agriculture and Agri-Food Canada and the B.C. Agriculture Council.

"The number of farmers who participated, and the amount of pesticide they brought in for disposal far exceeded our expectations," ~ Madeline Waring, Pesticide Specialist, B.C. Ministry of Agriculture, Food and Fisheries

is pleased to initiate this project as it will promote responsible stewardship and education while addressing the environmental health and safety on B.C. farms. "This program has been

the environment and good for Canada. We appreciate the support of the Foundation and Environment Canada in funding this program with us."

For more information on the Pesticide Return Program, please contact:

Madeline Waring, Pesticide Specialist, B.C. MAFF: tel (604) 556-3027; email: madeline.waring@gems5.gov.bc.ca

Making Stewardship Work on the Ranch

Network of "stewards" helping to protect fish habitat

In British Columbia's Southern Interior, agriculture can have an impact on the area's valuable fish populations. Protecting these fish stocks calls for ranchers and farmers to be active in stewardship - not only of the land, but also of the rivers and streams that flow through the land.

But Hesketh is ideally suited to bridge the gap. A rancher himself, he has also worked for many years with Fisheries and Oceans Canada designing and creating habitat restoration projects on local streams.

"I see my main role as a go-between," Hesketh adds. "I'm working with the industry to help them understand government regulations because information is the basis for understanding. I believe that if more ranchers understood how a watershed functions, they would make the right decisions. Giving people knowledge will make stewardship work."

Hesketh's position is funded by HCSP but he works for the B.C. Cattlemen's Association through a partnership arrangement. David Borth, the association's general manager, agrees that strengthening the relationship between ranchers and the government is the key to success.

Working with ranchers to safeguard fish habitat is Lee Hesketh. He is a new stewardship coordinator, hired through the federal government's Habitat Conservation and Stewardship Program. Since the spring of 1999, the program has deployed a network of more than 100 "stewards" such as Hesketh in communities across B.C. and the Yukon to protect fish populations through stronger watershed stewardship.

In the past, ranchers, and the government agencies mandated to protect fish and fish habitat, have often operated from differing perspectives.

"Ranchers want to do the right thing for stewardship, but they are cautious," says Borth. "That's where Lee comes in. He helps to resolve their concerns and shows DFO how best to reach and work with ranchers. "I've seen a change in this program from enforcement to working with landowners in an incentive-based approach."

There are many issues that need concerted, cooperative action. The Southern Interior includes the Thompson, mid-Fraser and Okanagan watersheds: productive rivers, streams and lakes that provide

"I believe that if more ranchers understood how a watershed functions, they would make the right decisions. Giving people knowledge will make stewardship work." ~Lee Hesketh, Habitat Conservation and Stewardship Program Steward

habitat for important runs of coho, chinook and sockeye salmon. However, many water systems suffer from a loss of streamside, or riparian, vegetation. This poses problems for both fish and landowners: shifting of the stream channel, loss of land through erosion, sedimentation, poor water quality and more extreme water temperatures.

Another concern is water runoff. During rains and spring thaw, runoff from cattle fields and farmlands can carry potentially toxic substances such as fertilizers, pesticides and manure to nearby waterways. Yet another issue is low water flows

for fish in streams where demands for irrigation water is compounded by hot, dry summer weather. Solving these problems needs cooperative action to find new and effective farming and ranching practices.

Over the past few months, Hesketh has been working with ranchers and farmers to improve habitat on their land by planting streamside vegetation, erecting fences to protect streams from grazing cattle and stabilizing eroding riverbanks. Keeping in mind the interests of ranchers, he works hard to ensure his advice about how to restore and protect fish habitat is common-sense and affordable.

The Habitat Conservation and Stewardship Program, which funds Hesketh's position, is part of the \$100 million Resource Rebuilding initiative. Resource Rebuilding is a major component of the five-year \$400 million Pacific Fisheries Adjustment and Restructuring Program, launched in 1998. Other positions created under the program include habitat auxiliaries, habitat stewards and habitat fishery officers. These stewards work with community and watershed groups, industry, stakeholders, First Nations and government agencies to improve watershed stewardship.

For more information on the Habitat Conservation and Stewardship Program, please contact: Joanne Day; tel: (604) 666-6614, or visit the HCSP web site at: <http://www-heb.pac.dfo-mpo.gc.ca/english/programs/hcsp/default.htm>

The First Steps Toward Recovery at Black Creek

Sensitive stream pilot project underway

"Government has made it a priority to protect, conserve and restore at-risk fish populations and their habitats. Designating sensitive streams under the Fish Protection Act is an important step in the process for achieving these goals."



The Black Creek Recovery Project involves the collection of hydrology and temperature data. Pictured above is a gauge on Black Creek during high-flow season.

Those were the words of then B.C. Environment, Lands and Parks Minister Joan Sawicki, as she unveiled the provincial government's policy on sensitive streams early last year. She also announced that Campbell River's Black Creek, had also been selected as one of two pilot projects to serve as the first sensitive stream recovery plans in the province.

Now, one year later, an active recovery plan team of industry, government and community leaders has been established. Deborah Epps is a Fish Protection Biologist with MELP and is the Chair of the Black Creek Recovery Table.

"Black Creek was selected as a pilot project with

the hope of developing a model for stream recovery in a rural/agricultural setting," Epps says. "We have two goals: trying to restore fish and fish

habitat, including water flow in the watershed, along with pursuing solutions to help rectify other resource use issues such as agriculture, rural development and forestry."

The recovery plan team established a Terms of Reference in August, 2000 for their work: a document that establishes goals and objectives, sets tasks and begins to define the content of a recovery plan. The team has also been busy collecting existing and new information on the creek, including hydrology and temperature data, as well as existing data. Black Creek is a coho indicator stream for Fisheries and Oceans Canada and thus

information on escapement and habitat utilization is readily available.

The recovery plan team has signaled that public participation is a key component to their success. The final action plan, scheduled for release this April, has benefited from door-to-door surveys of adjacent landowners and three public information meetings that have been held in the local community.

"It's all part of building a partnership with all stakeholders," says Epps. "We need to work within the watershed to meet agriculture requirements as well as enhance and protect fish and fish habitat."

For more information on the Black Creek Recovery Plan, please contact: Deborah Epps, MELP: tel (250) 751-3146; e-mail: deb.epps@gems9.gov.bc.ca

This publication is a production of the Partnership Committee on Agriculture and the Environment

