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Edited by Martin Price

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## A Word from the Editor

**ECHO's Global Bookstore is about to go "on-line."** Our store has several hundred titles selected because of their relevance to members of our overseas network. There may be no other place in this country with a comparable selection.

Hopefully by the time you read this you will be able to log onto our web-store and see the book covers in color, read a description of each book, and perhaps even take a look at the Tables of Contents. If the store is not there yet, try again in a few weeks. We will be expanding and improving it over several months. You can access it through our home page.

**Note that we are closing our old web site** at [www.xc.org/echo](http://www.xc.org/echo). Our new address is [www.echonet.org](http://www.echonet.org).

**Some e-mail messages may have failed** to reach us around June 16. If you wrote and received no reply, please resend the message.

Several great "**resource speakers**" **have been lined up for ECHO's Agricultural Missions Conference** this November 9-11. Our web site will keep you up to date. An incomplete listing of speakers and their topics include:

**Dr. Chuck Dodd**, veterinarian with Christian Veterinarian Mission in Tanzania, will speak on animal health training among pastoralists.

**Lowell Fuglie** with Church World Services in Senegal will be telling about their very successful project using leaves of the moringa tree in their nutrition program. (See article in this issue).

**Bob Hargrave** with Africa Inland Mission in Kenya will speak on his experiences with agricultural development in arid regions.

**Hudson Hess**, a missionary in Haiti for many years, will be leading devotions each morning.

**Dr. Gary Hipp**, President of Mission: Moving Mountains will discuss community development and discipleship.

**Dr. Frank Martin**, formerly with the U.S. Department of Agriculture in Puerto Rico, will talk on palms and their uses on the small farm. He is writing a book on this subject, which ECHO will publish.

**Dr. Phil Rowe** will speak on his banana breeding work in Honduras. He made his improved varieties available to our network (EDN 59-1) as small tissue culture plants, and will have some of them at the conference.

**Chet Thomas** with Project Global Village will be sharing his experience with a successful apple project and other innovative projects in Honduras.

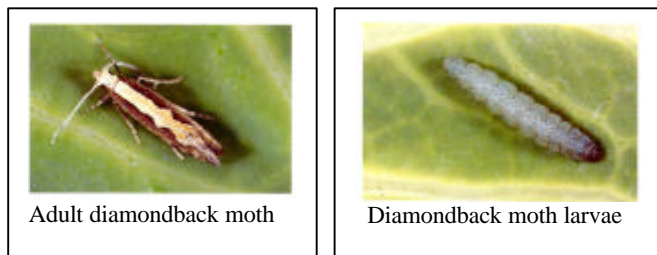
**Harold Watson**, a former missionary in the Philippines, will be speaking on the very successful SALT technique (Sloping Agricultural Land Technology) for which he received an international award.

There will be many other speakers from among the delegates themselves. So if you would like to speak, please indicate this on your conference registration form.

# Collards Can Protect Cabbage From Diamondback Caterpillars

By Martin Price, based on a research report in *Agricultural Research*, p. 26, March 1999

The diamondback caterpillar, *Plutella xylostella*, (larva of a moth) is a very serious pest of cabbage and other crops. Farmers in the USA spend up to \$168 per acre on pesticides to grow cabbage (*Brassica oleracea Capitata Group*). The diamondback moth is gray, about 1/3 inch (8mm) long with a row of three light colored diamond shaped markings on its back. The larva is small, greenish, rarely over 1/3 inch long. They eat numerous holes in the leaves of cabbage collards and other cole crops.



Recently the caterpillars have begun to develop resistance to the "organic" pesticide, *Bacillus thuringiensis*, better known as Bt.

Dr. Everett Mitchell, a researcher with the U. S. Department of Agriculture, has found a way to produce cabbage with little or no spraying. He found that when highly fertilized collard greens (*B. oleracea, Acephala Group*), a related vegetable, are planted completely around a field, moths lay their eggs on the collards rather than on the adjacent cabbage plants. As long as the collards stay green, the insects remain on the collard plants and do not move into the cabbage like you might expect. This is an example of what is called a "trap crop." Using the trap crop allows farmers to use 75-100% fewer sprays.

The yield and quality of the cabbage equaled that from fields sprayed in the normal way. "It is important that you plant collards completely around the field. If you leave gaps, the bugs will move in just like you've opened a gate."

ECHO asked Dr. Mitchell to clarify a few points for us.

Editor: Is the diamondback moth likely to be a problem in tropical countries?

Dr. Mitchell: The diamondback moth is a universal pest, occurring virtually everywhere that cabbage and other cruciferous crops are grown. It is highly resistant to most pesticides including biological insecticides. The wide distribution of the diamondback moth, its destructiveness to

the harvestable portion of the crop, and its resistance to most pesticides rank it among the most serious pests worldwide.

Editor: For what shape and size of field does this work?

Dr. Mitchell: The fields vary in shape from rectangular to almost square. Typically growers plant two rows of collards along the edges of the field. The collards (variety 'Vates' or 'Georgia') are transplanted at the same time as the cabbage transplants. The only difference is that the first and last two rows are dedicated to collards instead of cabbage. In addition, seven collard plants are planted at the end of each row. The rows in northeast Florida are typically 40 inches (100 cm) apart, so the seven plants at each end occupy the same amount of space as the two rows on the edges of the field.

Actually just one row seems to work as well. It is important that the collards are planted completely around the field.

The system has performed beyond our expectations on areas as small as 10 acres up to 50 acres (4-20 ha). We have not found it necessary to add additional rows of collards in any fields up to 50 acres (20 ha). Beyond that we do not know.

Editor: The article specifies "highly fertilized" collard greens. Many small farmers in tropical counties cannot afford much fertilizer. Do you think it would still work?

Dr. Mitchell: The collards are fertilized at the same rate as the cabbage. Since commercial cabbage in Florida is highly fertilized, so were the collards. In my opinion the collards should get whatever fertilizer is given to the cabbage, with no special treatment.

Editor: What research will you pursue next?

Dr. Mitchell: There might be other crops that could be used instead of collards. One large grower from Mexico inquired if cauliflower might be similarly used around broccoli fields, because he has observed that cauliflower is preferred over broccoli in his location. I don't know. But I plan to try cauliflower with cabbage next year. But the main advantage of the collards is that they continue to grow throughout the season of the cabbage crop.

We are now in the third year of our program, and the number of growers adopting the system is increasing each year. Most of the spraying of insecticides for diamondback moth control has been eliminated. However, the cabbage looper remains a pest and growers usually spray 1-3 times to control it.

Feel free to include my e-mail address in your article: emitchell@gainesville.usda.ufl.edu

ECHO can send a trial packet of collard seed to our overseas network. It is a common vegetable in many tropical countries because of its tolerance to warm weather. For example, in Kenya I am told that collards and cabbage are

the primary year-round vegetables. Please request seed from ECHO only if collard seed is not available in your country.  
END

## Introduction of Maize Hybrids to Areas Currently Using Open-Pollinated Varieties

*A situation following Hurricane Mitch. By Darrell Cox and Martin Price*

One of the services ECHO provides to missionaries and development workers is a question & answer service. We recently received the following request from Kevin Sanderson, the country director for World Relief Nicaragua. [I am in need of] "a written technical opinion on the effect of introducing hybrid maize seed [*Zea mays*, corn] in areas where farmers normally use open-pollinated seed and save their seed from one year to the next."

In the following paragraphs, you will find the technical reply that we pulled together as well as get an idea for how we utilize various resources to develop replies to questions that come from you (our network). In this case we phoned scientists at U.S. universities to supplement our in-house knowledge.

Kevin's concerns are related to the potential impact cross-pollination between hybrid and open-pollinated varieties could have. As a part of the Hurricane Mitch recovery effort, a U.S. sponsored program was tasked with bringing in seed of basic grains for the spring planting season in response to the expected shortfall in available seed. The program decided to bring in hybrid white maize seed as a part of an assistance package to be distributed in a variety of areas to farmers who lost their seed due to the hurricane. This meant that hybrid white maize planted by farmers affected by the hurricane would be grown in proximity to open-pollinated maize being grown by other farmers.

Improved open-pollinated varieties of maize have been introduced to Nicaraguan farmers over the past few years to enable the farmers to benefit both from the higher yields and the ability to save seed that can be planted in a subsequent season (without having to purchase new seed from a dealer). This is in contrast to hybrid varieties for which it is recommended that new seed be purchased every year because there is a yield decline when saved seed is planted. Development organizations have a legitimate interest in preserving high yielding varieties whose seed can be saved by any farmer for planting in the next season.

It was expected that the hybrid seed would be distributed to six to ten thousand farmers. Several NGO's working with small farmers were concerned that cross-pollination occurring between the hybrid maize variety and existing

open-pollinated varieties would reduce yields of both traditional varieties and the new, improved open-pollinated varieties in subsequent years.

[Open-pollinated maize refers to a "population" of maize plants that has been grown together for some time. Individual plants are not genetically identical. This is important because if a new disease or insect pest appears, some of them may have resistance. Agronomists call this "population buffering."]

We contacted Dr. Rex Bernardo, a maize breeder at Purdue University, to get a reading on the potential impact of cross-pollination on the improved open-pollinated varieties. He said that there certainly would be "contamination" of existing maize varieties if they were grown close to the hybrid maize. However, the word "contamination" is from a geneticist's point of view, meaning only that genetic material will be shared between the populations. It does not mean disaster—the local open-pollinated varieties should not become weak. It could even add new genetic material to the open-pollinated varieties that would prove beneficial.

Dr. Bernardo recommended that some fields of the open-pollinated varieties be grown in isolation to maintain the existing genetic characteristics of these populations. The recommended isolation distance is 150 m (500 feet). (See *Amaranth to Zai Holes* p. 320 for more perspective on this.)

We realize that not every farmer could do that, but certainly with some planning many fields could be kept in isolation for the production of seed maize. Other fields that could not be protected could be harvested for food and feed. He also recommended harvesting maize from the outside rows for eating and from the interior of the field for seed.

We also called a former board member of ECHO, Dr. David Unander, a plant breeder who is now a biology professor at Eastern College. When we explained the situation, his immediate concern was the source of donated seed. Would it be adapted to production in Central America? If it was seed developed for the USA, it likely would not perform well under tropical conditions. We contacted Kevin again to ask about the adaptation of the seed and were pleased to learn that it was developed for production in that region of the world.

Dr. Unander also said he did not think it should be too difficult to maintain the improved open-pollinated varieties. Indigenous Indian cultures commonly kept five to six distinct maize varieties going. It was not unusual for a village or individual to be assigned responsibility for growing a particular maize variety for seed. Indian groups in our country discarded any ears that had multi-colored kernels because clearly they had been cross-pollinated. Interestingly, he said the Indians would sell these discarded

ears to the settlers as interesting "Indian maize," while their varieties were actually uniform in color.

We also asked Dr. Arnel Hallauer, maize breeder at Iowa State University, for his take on this situation. He replied, "I don't have data for direct comparisons between open-pollinated varieties and varieties that have been crossed with hybrids. Hence, my comments are based on past evidence and conjecture."

Dr. Hallauer felt that if local producers desire to keep their open-pollinated varieties pure, then the use of hybrids in adjacent fields would not be desirable. New genetic material could be introduced into the open-pollinated varieties through the pollen of the hybrid variety. To reduce the chances of cross-pollination between open-pollinated varieties and hybrids, he indicated that fields should be separated by at least 200 meters (650 ft). This is the distance recommended for maize varieties that have similar kernel types and colors. If traits between the local variety and the hybrid differ greatly (e.g. if varieties have different kernel types and colors) then isolation should be greater, say 300 meters (980 ft). [If white maize is pollinated by yellow maize, this year's harvest will have some colored kernels. The opposite, yellow maize pollinated with white, will all be yellow.] Some cross-pollination could occur with these distances (e.g., wind, humidity, air currents, etc.), but it would be minimal.

However, the immediate effect from the introduction of genetic material through the pollen will be negligible assuming the hybrids and open-pollinated varieties have the same kernel color or if the local variety is colored.

According to Dr. Hallauer, "Throughout the evolution of maize in the Western Hemisphere, improvements have usually been realized from wide crosses of different races, varieties, and strains. If the local growers continue to practice selection within their local open-pollinated cultivars at harvest each year, I do not believe there would be any decline in the performance of their local varieties. In fact, the introduction of new genetic material may provide further genetic variation to enhance future selection to improve the performance of the local open-pollinated varieties."

If the donated hybrid seed was developed through breeding programs that included evaluation trials to identify superior hybrids for the environments of Central America, then the introduction of pollen from hybrids may have a positive effect on the open-pollinated varieties.

(On the subject of developing new lines of maize, see *Amaranth to Zai Holes* p. 77, 78. This is a report by Bob Short about how he teaches Mexican farmers to develop their own lines of maize.)

ECHO's recommendation was based on the consensus we observed in the opinions stated above. Assuming that the new hybrid was adapted to the growing conditions in Nicaragua, growing it should not result in a disaster—in fact it may confer some genetic material to existing varieties that will prove beneficial. In addition, by taking some precautions with planting distances it should be possible to maintain the distinct identities of the open-pollinated varieties by planting them in isolation.

(If you do not have *Amaranth to Zai Holes* but want the articles this article referenced here, request the "Corn Articles in EDN 64" and we will send them to you.) END

## Where to Get Seed After a Disaster

By Martin Price

Richard James inquired what kind of maize and bean seed he should get to help Honduran people replant. Several people have asked similar questions after hurricane Mitch. These are agonizing questions that we do not feel qualified to answer well. We do have some ideas however. Here is our reply. We would welcome your insights.

First, make sure there is actually a lack of seed in the countries involved. Certainly not all maize and beans in Honduras were destroyed. It would make great sense to import maize and beans to eat and use the existing stores for seed. There is no way to know in advance whether a new introduced variety will encounter an unexpected disease or insect, handle different weather patterns, be overly sensitive to the shorter daylengths if it is a northern variety, etc. If you work in the area affected, you probably already have a feel for whether seed might still be obtained locally.

If seed must be imported, the next best approach would be to go to the nearest neighboring country that did not lose its bean and maize seed to the hurricane. In this case we'd be talking about Costa Rica, southern Mexico, etc.

Keep in mind that the leading international research center for maize (CIMMYT) is in Mexico. This center has many years of research and production experience testing and developing maize varieties for the Americas and other countries. Though the International Centers probably would not have large amounts of seed, they would probably be able to recommend varieties that have already been tested in or close to your region and commercial sources for that seed. They would likely be aware of cultural preferences also, such as seed color or texture of the meal.

Similarly, the International Center responsible for beans (*Phaseolus spp*) is CIAT in Colombia. Central Americans are famous for having very precise expectations of their

beans, including color. You can find a list of the 15 International Centers in our book *Amaranth to Zai Holes* on p. 40. You can also ask us to mail or e-mail you the addresses or you can look them up on the web at [www.cgiar.org/centers.htm](http://www.cgiar.org/centers.htm).

Another possibility is to look for someone who has earlier imported seed of the desired species from outside the region and knows from that experience that it does well in the area.

For vegetable seed, it is likewise important to find someone who has had experience with different varieties. Here in southern Florida we find that the variety sometimes makes all the difference in the world. 'Poinsette' cucumber is so disease-resistant that we have a chance of production (home garden standards only) even in the summer. Most other cucumbers would fail for sure. We have found that 'Contender' green beans are much more problem-free than

most other varieties. During a disaster is a poor time to have people doing large-scale experiments. It would be invaluable to find someone with variety-specific knowledge. When agencies have called for advice, saying only that they were told to get vegetable seed, I really start to worry. If a donor does not have enough local contacts to be able to discern even what species of vegetables have already been shown to thrive in the area, let alone what varieties, then I really doubt if they should be importing seed. It could do a lot of damage to unsuspecting farmers and gardeners who assume the seed they are given will both grow and produce and that the product is something they will like.

If you want to be really prepared for a future disaster, do several variety trials with seed that you know can be imported in quantity. Then, if disaster strikes, you will know what can be safely distributed to farmers. END

# ECHOES FROM OUR NETWORK

## An Impressive Moringa Project in Senegal

*Adapted by editor from a Church World Service report by Lowell Fuglie*

Lowell Fuglie with Church World Service (CWS) in Senegal sent us a report on a recent CWS project called *Moringa oleifera: Natural Nutrition for the Tropics*. ECHO and others have published articles about the many uses, nutritional content and hardiness of this drought-resistant "vegetable tree." This report contains valuable technical information and adds an important human face by reporting results of an evaluation of the project and interviews with people who have benefited from it.

## A Fresh Look at Nutrition and Moringa

People have different nutritional requirements at different stages of their lives. Lactating women and weaned children ages 1-3 are especially vulnerable in areas where malnutrition is commonplace. This report lists the recommended daily allowance (RDA) for the major nutrients for children ages 1-3 and for lactating women and compares this to the amount of these nutrients present in moringa pods, moringa leaves and moringa leaf powder.

Here are highlights from several tables. "For a child aged 1-3, a 100 g serving of fresh cooked leaves would provide all his daily requirements of calcium, about 75% of his iron and half his protein needs, as well as important amounts of potassium, B vitamins, copper and all the essential amino acids. As little as 20 grams of leaves would provide a child with all the vitamins A and C he needs."

"For pregnant and breast-feeding women, moringa leaves and pods can do much to preserve the mother's health and pass on strength to the fetus or nursing child. One 100 g

portion of leaves could provide a woman with over a third of her daily need of calcium and give her important quantities of iron, protein, copper, sulfur and B-vitamins."

Moringa leaves can be easily dried (in the shade to reduce loss of vitamins) and rubbed over a wire screen to make a powder, which can be stored and conveniently added to soups, sauces, etc. "It is estimated that only 20-40% of vitamin A will be retained if leaves are dried under direct sunlight, but that 50-70% will be retained if leaves are dried in the shade." "One rounded tablespoon (8g) of leaf powder will satisfy about 14% of the protein, 40% of the calcium, 23% of the iron and nearly all the vitamin A needs for a child aged 1-3. Six rounded spoonfuls of leaf powder will satisfy nearly all of a woman's daily iron and calcium needs during pregnancy and breast-feeding."

During pregnancy and breast-feeding, women are most at risk of suffering from nutritional deficiencies. The table below shows the percent of the RDA of various nutrients for a nursing mother eating six rounded tablespoons (about 50 g) of leaf powder daily. It also shows the percent of the RDA for a 1-3 year old child with one rounded tablespoon of powder added to its food, three times daily.

	Mother	Child
Protein:	21%	42%
Calcium	84%	125%
Magnesium	54%	61%
Potassium:	22%	41%
Iron:	94%	71%
Vitamin A:	143%	272%
Vitamin C	9%	22%

## How the Program Operated.

Lowell says he first became aware of the nutritional value of moringa from reading EDN. He did not need to order seeds from our seedbank, however, because moringa already grew wild in Senegal. It was seldom eaten, and much of the nutritional content was lost when it was prepared due to the common practice of boiling the leaves then discarding the water, as many as three times.

The project began in early 1997. CWS partnered with a local NGO, Alternative Action for African Development (AGADA). Together they trained a network of government health workers (doctors, nurses, midwives) in ways of using moringa. Informational booklets, brochures, a seminar and radio spots were put together.

An outside evaluation of the project was conducted in December 1998. They interviewed 70 individuals. Answers to the questions posed follow, based on their report.

Would moringa leaves, leaf powder and pods be effective in treating malnutrition and promoting physical health and well being? "Successful treatment of malnourished children has been well-documented. Interviews with men and women who have made moringa a regular part of their diets point out that they have a keen awareness of improvements in their health and energy. At one health post, the pharmacy is now selling moringa leaf powder to mothers with malnourished children (US 5 cents per sachet). "

There is limited awareness of nutrition and the importance of balanced diets. Would people see the value of adding moringa to their foods as a purely nutritional measure? "It is apparent that one does not need an education in nutrition to know whether or not one is feeling healthy. People expressed every intention of continuing to include moringa in their diets because of the sense of physical well-being it gives them. In one village virtually every household now maintains a stock of moringa leaf powder."

Would people be receptive to changing the way they prepared fresh moringa leaves? "Traditionally leaves are boiled 2-3 times and the water discarded after each boiling to remove some of the bitter taste. However, some individuals claim they are no longer discarding the water or boiling the leaves more than once. In addition, making sauces with leaf powder instead of fresh leaves appears to be quite popular because it saves time and is easy to use."

Would they be receptive to adding new foods, such as moringa pods, to their diets? "This has been surprisingly successful, since new foods are often very difficult to introduce in West Africa. People interviewed have shown considerable inventiveness when it comes to preparing moringa pods, seeds and flowers."

Would local consumption remain dependent on outside encouragement and training, or could it develop spontaneously? "Partly thanks to radio broadcasts about moringa, partly through training provided local communities by some of the more dynamic health agents, and partly through word-of-mouth and example, moringa and its properties are gradually becoming known even outside the project's target area. The project directly sponsored planting 10,000 trees in 1998, but it is likely that a similar number were planted by individuals within the region."

As I read through excerpts from interviews I selected a few to share here. The supervisor of the primary health department at a hospital said, "We have always had problems with the classical approach to treating malnourished children. This was based on industrial products: whole milk powder, vegetable oil and sugar. All these things are expensive. When you tell a parent to go out and buy them—this can be truly costly for them."

A nurse in charge of pediatrics at a hospital keeps dried leaf powder on hand to give out to mothers of malnourished children.

An administrator at another general hospital is a diabetic. "I have for the past three years been controlling my blood sugar by periodically drinking a tea made from moringa leaves." He decided to plant a thousand trees around the hospital complex. "This way we will always have a ready supply of leaves to treat the cases of malnutrition we receive." [Editor: We know nothing about the value of moringa tea for diabetes. Have others heard of this?]

One of the mothers said, "At first, when I tried to nurse my son, I was not producing enough milk. Then I started to eat moringa. After a short while I had enough milk again. We now eat moringa sauces at least three times a week. Every other time I had a baby, I lost weight during the months I was breast-feeding. This time I have been gaining weight."

Many adults mentioned that they were no longer so tired. Some mentioned that they and their children sleep better. One said that "After we boil the pods, we distribute the water and drink it. It tastes sugary." There were some accounts of children vomiting worms the first time they were fed moringa.

This 68-page book also contains many recipes. There are many pictures of the people being interviewed, which might be helpful in proposing a similar project to local leaders in other countries.

The book is available from ECHO in English (and in French later this summer) for \$5 (plus postage: North America \$2; airmail to Latin America \$3 and elsewhere \$5). You can write Lowell Fuglie at Church World Service; 12 rue Felix Faure; B. P. 3822; Dakar, Senegal, West Africa or e-mail at

fuglie@sonatel.senet.net. He is scheduled to speak at ECHO's conference in November. Trial packets of moringa seed can be obtained from ECHO at no cost to our overseas network. Others send \$2.75. END

## Onion Trial Update

Over the past few years ECHO distributed seed for "short day" onion trials, donated by Dr. Leslie Currah, who at that time worked at the Natural Resources Institute in England.

Onions from the temperate latitudes normally will not form bulbs in the tropics and subtropics where days are short. Dr. Currah has sent us a list of companies that sell the varieties used in the trials. If you requested seed, and found that one or more of the varieties were successful, you may be

wondering where to purchase larger quantities (if you were unable to save your own seed due to climate or because it is a hybrid.) If this is your situation, let us know the name of the variety and we will send you the address of the supplier.

## CAN YOU HELP US?

### Hurricane Mitch.

We would like to have first-hand accounts of how lands that were terraced or set up for "water harvesting" fared during the storm compared to land that was not so prepared. In particular, did anyone see instances where there was greater landslide damage because the water harvesting retained extra water? Or perhaps there was less damage because contour grass barriers helped hold the soil?

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## BOOKS, WEB SITES & OTHER RESOURCES

### Distance Learning Opportunities—an ECHO Training Note

Dr. Darrell Cox, ECHO's Educational Programs Director, has put together a global listing of courses and programs for agricultural development workers who are interested in pursuing continuing education (distance learning) while on the field. Courses have been categorized into six broad areas of study: (1) Agriculture, Horticulture, Plant Science; (2) Soil & Water Science, Conservation; (3) Animal Husbandry; (4) Rural & Community Development, Extension & Education; (5) Enterprise Development, Agribusiness & Marketing; (6) Food Science, Processing & Nutrition.

Courses are listed for institutions that grant degrees (Bachelors or Masters programs), that grant diplomas or certificates, or that provide only one or several distance learning courses in the area of agriculture.

For most courses, the content level is targeted at the undergraduate student. However, courses offered as part of a diploma or certificate program may be geared to a different audience. For instance, the content and requirements for a course could be equivalent to those for secondary education. Often tuition

for non-credit courses is substantially less than for credited courses. Some schools will also allow you to apply any course you've taken toward a certificate, and the certificate toward a diploma.

If you are seeking a masters degree, it would probably be best to go through one of the universities such as the University of Florida. But for just gaining more information on a specific subject, the schools set up mainly for correspondence such as the Australian Correspondence School (ACS) are much more flexible as to the courses' timing, payment, which courses you can take, etc.

Why not just read a book on the subject? Some institutions such as ACS or the University of Guelph in Canada provide a high level of support. Students can ask questions of tutors via phone, fax or e-mail and quickly receive a reply. Many certificate courses are nationally recognized. The ACS offers career and business advice and will on request issue an official "letter of completion" acknowledging satisfactory completion of all assignments.

Only courses that are delivered by correspondence (e-mail, audiotape, videotape, or the Internet) are included in the Training Note. Unless otherwise stated, they are delivered by correspondence and are in English.

Courses offered by video-conferencing were intentionally excluded.

The Note costs \$3.50, but is free to our overseas network and is on our home page. END

### Distributing Seeds and Tools in Emergencies.

*Douglas Johnson. Oxfam GB, Oxford, 1998. 96 pages. \$11.95, Reviewed by Daniel Sonke.*

A drought causes hunger in Papua New Guinea. Hurricane Mitch destroys crops in Central America. After such disasters, ECHO receives requests asking, "Where can I obtain seeds for the next crop?"

The article elsewhere in this issue shares some of our own views on this subject. Though we and most of our readers specialize in development, relief is a necessary response in such situations. Often, it is those working in development before an emergency occurs who find themselves responsible for relief efforts afterwards. Oxfam, recognizing the lack of literature on the relief distribution of seed and tools has published this small volume on how to plan such an effort.

Topics include: issues related to seeds and tools; the project cycle and management; initial project assessment;

project information requirements; assessments; project design; project implementation; long-term considerations. The appendix includes: calculating storage areas; sample distribution form and registration card; outline of project budget; assessment report format; outline of an emergency preparedness plan.

"The crop varieties to be distributed should be limited to two or three types, agreed upon by the beneficiaries... The advantages of local seed sources, when and where they exist, are that they will be able to supply varieties that are well known and suited to local conditions. Propagation materials can be supplied fresh. There is no risk of introducing diseases and weeds new to the area, and less chance of delay in delivery. Direct quality control will be easier. There will be very little if any bureaucratic red tape

or transport problems and the costs of seed and transport costs are likely to be lower than from other sources. Purchasing locally may also stimulate the local economy."

In the chapter on long-term considerations related to seed, readers are cautioned, "rebuilding sustainable livelihoods may depend on returning to old non-commercial varieties of crops. Small-scale producers, men and women, may be the best source of appropriate seeds. Such people may in the past have provided special, local varieties of seeds through local distribution or marketing systems. People are accustomed to dealing with these small-scale suppliers, and it may require very little additional outside support for them to re-establish their business."

"Local seed production and the use of seed banks will help to maintain genetic diversity. When local varieties have been virtually lost, a long-term project to re-introduce and multiply certain varieties will be required. Usually small amounts of seed of these varieties will still be obtainable, to start such a scheme. Or there may be alternative varieties that can be used temporarily until sufficient quantities of the required seeds are available."

Order from Oxfam Publishing for \$11.95 plus postage (\$5 in the US) (c/o Stylus Publishing, P.O. Box 605, Herndon, VA, 20172-0605, USA, phone 1-800-232-0223) or for £6.95 plus postage from Oxfam GB, 274 Banbury Rd, Oxford OX2 7DZ, United Kingdom.

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## UPCOMING EVENTS

### Regional Conferences for Christian Agricultural Workers

A wonderful and unexpected outcome of the ECHO conferences is that there have now been three conferences organized by past delegates.

Stefan Lutz writes, "I thought I'd let you know that last week the first German Annual Agricultural Missions Conference was held near Stuttgart. We were between 10 and 18 people attending the 5-day seminar. We hope to pursue this vision God has placed on our hearts and offer a conference every year, hoping that more people will attend next spring. We expect 30-40 people. Even though the conference was a small step, it was a very big step for us. You can contact Stefan at

stephan\_lutz@hotmail.com. He will be accepting a new assignment, so you can contact ECHO for his latest address.

David Christ in Thailand has organized one or two small informal gatherings in the northern part of Thailand. "Our attempts have been sporadic and small but I think that the secret to success is old fashioned persistence. Over time, once the proper timetable and the benefits of such a forum is realized, I believe this can become one of the greatest tools of agricultural development workers in this or any region. E-mail: dcrist@loxinfo.co.th .

Brian Polkinghorne helped organize a conference in Tanzania after the ECHO East Africa conference last fall. "We had 32 participants, decided to meet next year and are publishing

Proceedings. Denis Murnyak whom I meet at the Kenya conference did a fine job of organizing everything. We did not receive any financial assistance, so I was surprised that 32 people could come up with about \$55 each to attend." They will probably have another Tanzanian conference next year. E-mail kimkumaka@maf.org.

Perhaps a group of you working in the same country would want to organize a small conference for your region. Let us know your plans. Though ECHO would not be the official sponsor, we could perhaps provide addresses for other readers in the same country or put you in touch with others who have organized such conferences elsewhere. You would need to find funding locally.

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