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RECIPES FOR VELVET BEANS -- AND A CAUTION! Milton Flores has sent us a 77 page recipe book that was developed by El Rosario, one of World Neighbors' projects in Honduras. (Milton directs the International Center for Information on Cultivation of Cover Crops (CIDICCO), an affiliate of World Neighbors.) Roughly half of the recipes are for velvet beans. You can order the 77 page recipe book (in Spanish only) from Milton Flores, CIDICCO, Apdo Postal 3385, Tegucigalpa, Honduras, Central America. It is called Recetario de Cocina. The price is only US $4.00, but airmail postage is $6 in the Americas and $10 elsewhere (it was published for local use, so printing is not compact). CIDICCO hopes to translate the entire book into English. You can write them for details. Until then, ECHO has translated 13 of the recipes into English and will send a free copy to our overseas network ($2.00 to others).

We are making this available in spite of misgivings about the safety of consuming larger amounts of velvet beans. If there is any question, why publish recipes? Consider the following guidelines. Has there been a failure of the bean crop in your area, but velvet beans are abundant? If so, it is almost certainly better to make use this high protein (about 30%) bean than to suffer hunger or protein malnutrition. I believe it was just such a situation which first prompted the development of these recipes. Is the food situation a bit less desperate than that, but people still do not have enough to eat? If so, I would use velvet beans in moderation and not every day. Are there plenty of alternative sources of protein? If so, do something else with the velvet beans. See discussion below for more details.

When I visited the World Neighbors project in Honduras a few years ago they were in the midst of a drought. The crop of common beans had failed, but the velvet beans produced abundantly. This led to efforts to incorporate velvet bean into local recipes. Additionally, new recipes were developed based on their work with soybean, after changes to improve the taste and consistency.

Why the concern for safety? Some years ago I read a study that set out to determine in what ways college graduates differed from those who had not been to college. The only point I remember is that they supposedly had developed a greater tolerance for ambiguity. There is certainly something in mankind that wants things to be clear cut and plain. What politician has ever won an election by saying "On the one hand .... But then on the other hand...."? We crave certainty. In the case of the safety of velvet bean, I hope you have developed a tolerance for ambiguity. I know what you want to hear is either do or do not eat it. At present the answer is ambiguous.

We have discussed the issue of whether velvet beans are safe for use as a human food in past issues (EDN 24-4). My own conclusion was that I would cautiously eat them if I did not have enough to eat or my diet was lacking in protein. Otherwise I would eat them infrequently if at all, and then only in small quantities. A recipe book can make everything look very straightforward and safe. It has not been proven to be safe. But it is safer than trying to live without protein. (I imagine other beans could be made to fit into these interesting recipes).

Milton shares his own experience. "Although many people are eating the velvet bean in more than one way, we are careful to caution them to use it with care. We have observed symptoms such as drowsiness and headaches. This is especially true when people mix several [velvet bean] dishes at a time. In my own opinion, some people are more sensitive than others. I can stand only one cup of

velvet bean coffee and one or two velvet bean tortillas at one time. When we have cooking demonstrations, with several dishes prepared and offered at the same time, it is usual that a couple people report symptoms like those I have mentioned. Most people, however, do not seem to be affected in any way."

Keep in mind that there may be differences between varieties. It is conceivable that beans that have been stored a long time may be less toxic. Considering how widely velvet beans are being grown and how productive they are, it is a shame that the research community is not addressing these problems more vigorously. Thankfully two professors at two different undergraduate Christian colleges are working on it as they are able, but their research budgets are minuscule. We will keep our network abreast of their findings.

How about velvet bean coffee? In EDN # 24 I made the following recommendation concerning "coffee" made from velvet beans. "If buying coffee was hard on my budget, I would drink velvet bean coffee in moderation. If neither I nor anyone in my community had problems, I might drink it freely after a time." Based on tentative findings from Dr. Myrman at Judson College, I would change that. Until further research has been done I personally would not drink more than an occasional cup of velvet bean coffee. Dr. Myrman has told me verbally that there is 250 mg of dopa in an 8 ounce cup of velvet bean "coffee" (sometimes misleadingly called "nutricafe.") The beginning dosage for treatment of Parkinson's disease is 600-800 mg dopa. So a person drinking 3-4 cups of velvet bean coffee a day is easily getting this amount. [A question to doctors in our network -- are there medical applications for Parkinson victims for whom medicines are not available?]. We eagerly await his written report and will share the findings and a summary of the literature in an upcoming issue of EDN.

(By the way, CIDICCO has a new report on using velvet bean as a green manure in citrus plantations. It is available free from them in Spanish, and soon in English.)

How are velvet beans used? Use of velvet beans as an inter-crop with corn has doubled or even tripled yields of corn by peasant farmers in some situations. The degree of improvement presumably depends on how poor the soil was initially. The vines also make a great forage and keep down weeds during the dry season. The mulch remaining after they are cut down keeps the soil more cool and moist for the new corn crop. You are referred to EDN 23 for a discussion of its use. If you do not have that issue, request our Technical Note on green manures. We always have trial seed packets available for our overseas network.

SHORT TERM HEATING KILLS COWPEA WEEVILS. The January 1992 issue of HortIdeas reports that two Purdue University entomologists have developed an extremely low-cost technique for ridding dried cowpeas of weevils (Callosobruchus maculatus). If you have some clear plastic, a piece of dark cloth, a few rocks and a semi-sunny day,and about an hour, you should be able to eradicate the weevils in a couple pounds of cowpeas."

"A simple solar heater was made by placing a 3 ft x 3 ft black plastic sheet on the ground, adding 1 kg (2.2 pounds) of cowpeas (spread out only one layer thick), and adding a cover of clear plastic sheeting, held down at the edges by rocks. It was discovered that the ambient temperature doesn't affect the temperature inside the solar heater very much on clear or bright-hazy days; the temperature inside cowpeas within the solar heater was 149°F 15 minutes after exposure began on a slightly hazy day at noon."

After solar heating for different times, the numbers of beetles emerging were counted (time in minutes followed by numbers in parenthesis): 0 (227 adults), 30 (12 adults), 60 (2 adults), 120 (no adults), 180 (no adults). The treatment did not significantly alter either cooking times or germination percentages. The seeds did lose water, which was probably beneficial. Different types and colors were tried for the sheet on the ground (including cloth) and seemed to make little difference. This time in all cases no adults emerged after a 45 minute treatment.

COOKING OIL SPRAY FOR HOME GARDENS. The February 12, 1991 issue of the Wall Street Journal reports that the U. S. Department of Agriculture is recommending that home gardeners use a cooking oil spray to control aphids, white flies and spider mites. "Mix one tablespoon of dish washing detergent to one cup of oil (soybean oil was used in the trials, but the implication is that other kinds are suitable), then mix between 1-2½ teaspoons of the oil-plus-detergent with one cup of water. The detergent causes the spray to emulsify in the water so that it can be sprayed. Spray directly on plants every 10 days. Eggplants, carrots, lettuce, celery, watermelons, peppers and cucumbers have been successfully protected by the spray, but it burns leaves of squash, cauliflower and red cabbage leaves. Researchers claim that the oil spray is only about one-third as costly as commercial pesticides with equivalent effectiveness." [Thanks to both HortIdeas and Central American Development Foundation for referring us to the article. The latter added a note, "Do not use palm or coconut oil because if not used promptly they will gel within 24 hours.]

WHEN YOU SEND SEED TO ECHO. Our seedbank has been greatly enriched by seeds sent by overseas members of ECHO's network. If you have seeds to share, write ahead telling why you think we might be interested and giving as much information as you can. If it is a seed that we could use, we will send a green and yellow mailing label (a plant import permit) issued in our name by the department of agriculture. All you need to do then is put the seeds in a package, identify each packet, and use the permit as your mailing label. The seeds will be forwarded to us after inspection. (You can also get your own permit. See the next note for details.)

We need to be careful. Sitting on my desk at this moment are two containers of seed, each with a different type of adult insect pest crawling all over them, both sent to us from overseas. Fortunately the containers are well sealed and I will be able to destroy the pests.

A related issue -- please do not send infested seed or a diseased leaf or soil in an envelope for us to identify. We do not want your problem to get lose at ECHO!

If it is important to know what the insect is and you cannot find someone in-country to identify it, you might be able to send it in alcohol. Be sure it is in a very sturdy and tightly sealed container. However, a description might very well be sufficient. In most cases, precise identification is not important. (ECHO does not have an entomologist on staff and must pass the question on anyway). Given the lack of resources available in most peasant farming situations, it is usually enough, for example, to know that it is some kind of caterpillar or some kind of grain weevil. The low-technology options for control that are available are probably generic caterpillar controls or generic weevil controls anyway.

HOW CAN I GET MY OWN SEED IMPORT PERMIT? It is easy for U. S. citizens to obtain their own permit. Permits are designed for mailing seeds to the States, but usually help get you through customs with modest amounts of permitted seeds that you are carrying with you. Some plants are

not allowed entry, especially those listed as "noxious weeds." It might also be more difficult (and dangerous) to bring seeds of crops of major economic importance in the States. The inspector probably would not let you bring in citrus or corn because of the economic damage that could be done by introduction of a new disease or pest.
Permits can be easily obtained by any citizen by writing to Permit Unit; USDA, APHIS, PPQ; Room 631, Federal Building; 6505 Belcrest Rd.; Hyattsville, MD 20782 USA. The USDA must first send you a formal application, so allow plenty of time for two exchanges by mail. Permits are good only for the particular port of entry that you specify. E. g. ECHO's Miami permit will not help me in Los Angeles. To bring living plants, you also need a post-entry quarantine permit and a place (it could be a residence) where the plant will be kept and federally inspected for two years.

SQUASH CATSUP? To help the audience visualize the importance of new plant introductions, I often ask them to imagine what Italian cooking must have been like before the tomato was introduced. Where would fast foods be without catsup? This recipe from "The Garden to Kitchen Newsletter" (Newsletter reviewed in EDN 32-1) stretches my imagination a bit. But many of you work where it is difficult to grow tomatoes. If it works, and you could get used to orange catsup, it might be worth a try. "Squash catsup can be made using squash [or tropical pumpkin] puree cooked with varying amounts of vinegar, salt, pepper, sugar and other spices. Corn flour is used as a binder and thickener." Presumably winter squash or tropical pumpkin would be interchangable.

Another interesting squash/pumpkin recipe is suggested. "Mix 7 parts of squash puree and 3 parts corn flour then form into chips and dry. Later they are deep fried in oil...."

TRAINING IN INFRASTRUCTURE FOR DEVELOPING COUNTRIES. Dr. Margaret Ince with WEDC (Water, Engineering and Development Centre) sent a packet of information about their unique courses. WEDC is a unit within Loughborough University of Technology devoted to training, research and consulting related to the planning, provision, operation and maintenance of water supplies, sanitation and physical infrastructure in developing countries. They offer an interesting variety of short courses (6-12 weeks) and masters-level courses.

Examples of 12 week diploma courses include "Irrigation and Water Resources," "Community Technology for Rural Development," "Community Water Supply and Sanitation" (10 week), "Groundwater Development," Infrastructure for Low-income Urban Housing," "Management of Municipal Services," Project Preparation for Environmental Engineering," "Solid Waste and Environmental Management," "Urban Water Supply," "Wastewater and irrigation," "Water Engineering," et. al. Various 2-6 week courses are also offered.

Twelve month MSc courses include "Water and Waste Engineering for Developing Countries," "Water and Environmental Management for Developing Countries," Urban Engineering for Developing Countries," and "Planning and Management of Urban Services."

You can request fliers giving details and costs for any of the above by writing to WEDC, Loughborough, University of Technology, Leicestershire, LE11 3TU, England. Phone 0(44)509 222885; FAX 0(44)509 610231.

EFFECTIVENESS OF A MORINGA OLEIFERA SEED EXTRACT IN TREATING A SKIN INFECTION. In EDN 35-3 Dr. Morton referred to the powerful antibiotic and fungicidal effects of pterygospermin from the flowers and roots of the moringa tree. Now Axel Bosselmann has brought to our attention a study by Drs. Caceres and Lopez at the University of San Carlos in Guatemala.

The article is summarized below.

Herbal applications are commonly used to treat skin infections in developing countries, although few investigations are conducted to validate scientifically their popular use. You have read about Moringa oleifera (moringa) in many past issues of EDN. This small drought resistant tree produces edible leaves, pods, flowers and roots. A previous study had showed that seeds are effective against skin infecting bacteria Staphylococcus aureus and Pseudomonas aeruginosa in vitro (i. e. in a test tube). This study showed that mice infected with S. aureus recovered as quickly with a specially prepared aqueous extract of moringa seed as with the antibiotic neomycin.

This study proves only the effectiveness of moringa as they prepared it. That preparation could be done in any country, but not with just household untensils. It was prepared by infusing 10 g powdered moringa seeds in 100 ml of 45°C water for 2 hours. The part that is a bit more complicated is reducing the 100 ml down to 10 ml by placing it in a rotavaporator. This is a very common piece of laboratory equipment which continually rotates a flask containing the liquid. An aspirator attached to a faucet produces a modest vacuum when the water is turned on. A rubber tube from the aspirator is connected to the rotavaporator, reducing the pressure and causing the water to evaporate rather quickly without boiling it. The ointment was prepared by placing 10% of the extract in vaseline. (We can send a copy of the article to medical personnel).

Are you in a situation where there is a shortage of antibiotics? This ointment could be prepared for use in the local community anyplace where there is electricity and running water. I would not be surprised if much simpler methods, better suited to preparation as needed in the home, might not also be effective. I hope someone will devise and test such preparations.

TWO NEW ADDRESS. Volunteers in Technical Assistance (VITA), 1600 Wilson Boulevard, Suite 500, Arlington, VA 22209, USA. The Nitrogen Fixing Tree Association (NFTA), 110 Holomua Rd, Paia, Maui, HI 96779-9744, USA.

VITAMIN USED IN TREATMENT OF MEASLES. Don Mansfield with William Carey International University brought the following item in the Footsteps newsletter to our attention. "Children with severe measles do benefit from having a capsule of vitamin A. Two studies, one in South Africa and one in Tanzania, have shown that childhood mortality from measles can be reduced by about 30% if a capsule of 200,000 is given on each of two successive days. In fact, the World Health Organization recommends that this should be the routine management of measles where there is obvious vitamin A deficiency or where the proportion of children dying from episodes of measles exceeds 1%."

Don adds, "In Mali we had kids die every year from measles. We had hundreds of bottles of vitamin A that had been donated. JoAnn just never knew to use it for measles. Maybe EDN can help get the word out to remote mission clinics."

CASHEW FRUIT DRYING IN HONDURAS. The following is summarized from a brief article in the September 1990 issue of Appropriate Technology magazine. The first step is to boil the apples in salty water for 15 minutes to remove the bitter taste that is unpleasant to some. Then the apples are perforated and compressed in specially cured wooden devices. The compressed apples are then boiled in sugar for two hours. Some 350 kg of sugar are used with every 1,000 apples with enough water to cover the apples. The sugar is re-used twice.

The boiled apples are then dried in a solar drier. The apples are put in 1.2m x 0.6 m wire trays to a depth of 2.5 cm, inside a 1.5 m x 1.2 m wooden cabinet which is covered with plastic film. Underneath the wire trays there is a black collector plate. The cabinet is inclined at 80°, set toward the east in the morning and moved during the day. The apples are dried in one day and have a shelf-life of 6-8 months.

This has been extremely successful. By 1985, over 5,000 kg of cashew produce had been marketed and orders for 1987 were more than 35,000 kg. This provides employment for 2,000 families at £5.00 a day rather than £1.5 a day.

(Appropriate Technology subscriptions are £12 and back issues are £3.50. Order from IT Publications Ltd., 103-105 Southampton Row, London WC1B 4HH, United Kingdom.)

UPDATES FROM PAST ISSUES

WE FORGOT AN ADDRESS IN THE LAST ISSUE. When we mentioned that Food Legumes is still available, we should have included the most recent address. Order from National Resources Institute, Central Avenue, Chatham Maritime, Kent ME4 4TB, United Kingdom (price £7.50.)

BOOK AND NEWSLETTER REVIEWS

A package of appropriate technology brochures. Jennifer Evans with World Vision Australia forwarded a package for our review. The brochures were "developed by our appropriate technologist, Rus Alit, who has traveled extensively introducing the technologies to developing countries." When I saw the size of the brochures I wondered how enough could be included to be useful. Each is a bifold made from a single 8½ x 11 inch paper. But they are clever, to the point and very well illustrated.

My favorite is "How to Build a Rus Pump." This "has gained wide acceptance in South East Asia and the Pacific because it works well, is cheap and is easy to build." The main components are PVC pipes, a piece of hard wood and a tiny scrap cut from a discarded tire. It can pull water from a well up to 6 meters (18 feet). [The rope washer pump that we reviewed in EDN 31-7 is also made from readily available materials. The model we recently built at ECHO quickly became a hit on our educational tours. It is especially useful for higher volume irrigation where water is pumped a modest height, e. g. up the bank of a stream into the field. It would not work in a narrow tube well.]

Other titles are How to "Make a Hydraulic Ram Pump," "Dig a Simple Tube Well," and "Make a Ferro Cement Water Tank." The price (in Australian dollars) is $5 for the packet of brochures and $3 postage. A home made video is available for $30.00.

Newsletter on aids in Latin America. Boletin Sida is a Spanish language bulletin published three times a year by MAP International. "We have produced this bulletin to inform the Evangelical churches in Latin America about the advance of the disease, its consequences, the methods of prevention, treatment and accompanying emotional issues for those affected. We hope to stimulate the church to take part in the struggle against AIDS." To subscribe (no charge, but donations welcome) send them your name and address. Also mention the kind of work you do and whether your work currently involves you in AIDS issues. Write MAP International, Oficina Regional para América Latina, Los Shyris 3517 y Tomas de Berlanga, Casilla 17-08-8184, Quito, Ecuador, South America.

Practical Guide to Dryland Farming Series. Lucy Fisher with World Neighbors in Indonesia sent us a copy of this wonderful set. I am excited about it for several reasons. It is unbelievably well illustrated with detailed drawings. It deals with subjects that are of great interest to many development workers. It describes in detail many of the techniques that have been the basis for some dramatically effective projects by many groups in many countries. Finally, at $4 each, it is a good price.

Titles of the four units are Introduction to soil and water conservation practices; Contour farming with living barriers; Integrated farm management; and planting tree crops.

Lucy wrote, "We have been reading EDN for several years, and have found much that has been relevant to the agricultural programs we assist in Southeast Asia. Perhaps some of your readers would be interested in the agricultural extension booklets used in the programs we support here in Indonesia and the Philippines." Originally published in Indonesian, it is now available in English.

"While the methodologies discussed are specifically applicable to the conditions found in the semi-arid regions of SE Indonesia, many are relevant throughout the uplands in the tropics.

"The first book, 44 pages, discusses the basic principles of soil and water conservation on sloping land. Design, construction, use and maintenance of contour-based systems (hedgerows, rock barriers and bench terraces) to reduce erosion and increase rain water absorption are described.

"The second book, 40 pages, considers the reasons for contour farming with terraces as well as methodology. Details include finding the contour lines of the slope, dike/ditch preparation, hedgerow species selection and planting, maintenance of terraces, and alternative uses for the living barriers (which include a variety of leguminous shrubs and grasses.

"The third book, 36 pages, covers integration and diversification of upland farming activities to reduce risk and increase farm productivity. Soil and water conservation is promoted as the basis for integrated farming. Topics include soil fertility, cropping practices and patterns, livestock, tree crops, cover crops, wood production and environmental conservation.

"The fourth book, 38 pages, covers integration of tree crops into the farming system, uses of tree crops, propagation methods (seed, stakes, grafting, air-layering), nursery construction and maintenance, planting out/transplanting, and subsequent care of trees. It also includes a planning worksheet and tables of suggested tree species according to use."

I think highly enough of the books that we now stock them at ECHO. To order send $4 per book, $16 per set. Surface postage is $1.50. Air mail to the Americas is $3.00 for 1 book plus $1 each additional; Europe is $4.00 for 1, plus 1.50 each additional; elsewhere $5.00 plus $2.00 each additional. For the Indonesian version write for ordering information to Studio Driya Media; Jl. Tubagus Ismail Raya No. 15; Bandung, West Java 40143; Indonesia. By the way, the World Neighbors catalog says that their popular book Two Ears of Corn will soon be available in Indonesian. Called Dua Tongkol Jagung, it will be available from Yayasan Obor Indonesia; Jalan Plaju No. 10; Jakarta, Indonesia.

Where can I obtain audio visual materials suitable for use directly with farmers? A wide range of

film strips and flip charts is available from World Neighbors; 5116 North Portland Ave.; Oklahoma City, OK 73112 U.S.A. A few titles from their list of filmstrips include: Rat Control; Sub-surface dams; How to Build a Pit Latrine; Making Your House Safe Against Strong Winds; Birth of a Baby; Preparing Food for Your Baby; Caring for a Sick Child at Home; several on family planning; Raising Goats; Control of Parasites in Sheep; Grain Storage; Fodder Trees; In-row Tillage; Growing Mushrooms in Tropical Climates; and many, many more. Ask for their Training Materials Catalog. They also carry three kinds of portable filmstrip projectors.

A Good Book on the small-scale manufacture of compound animal feeds. Reviewed by Scott Sherman. Stephan von Malortie in Egypt asks: "...my main questions right now are in the field of feeding tables. I am trying to make guide-lines for feedcrop use in different areas of the country."

I immediately thought of The Small-Scale Manufacture of Compound Animal Feed by Overseas Development Natural Resources Institute. Chapters in this 87 page book include: Economic background to the industry, Nutrient requirements and feed formulation, Feed ingredients: characteristics and supplies, Outline of the feed manufacturing process, and Financial appraisal of small-scale production. These chapters are well written, short and to the point.

The 40 pages of appendices are especially useful. Appendix 1, Nutrient Specifications, includes detailed tables covering poultry, pig, ruminant, rabbit, and fish feeds. Appendix 2, Feed Formulations lists typical ingredients and proportions for small feed mills in Asia and Africa as well as normal maximum limits to ingredient inclusion. Appendix 3, Composition of raw materials, presents an exhaustive listing of the percentages of various nutrients in a wide variety of possible materials (from barley and buckwheat to spent brewer's yeast and feather meal). Another table lists the typical fatty acid composition of common fats and oils and a table of toxic or undesirable factors in feed ingredients (i. e. velvet bean contains trypsin inhibitors and needs to be heated to avoid problems, shea nut cake contains saponine and should make up no more than 2.5% of a feed). Appendix 4, Feed Processing has diagrams of typical feed mills, tables comparing motor sizes and capital costs, a table of typical bulk densities of raw materials etc., Appendix 5, Appraisal of Small-Scale Production Projects includes an exhaustive checklist of preliminary information to help decide project feasibility followed by detailed working tables for full financial analysis.

We have already found this publication a great aid in answering technical requests from our network. If your work includes the manufacture of your own animal feeds from locally available materials, this book may be a good addition to your library. Copies are available for £12.00 from: ODNRI, Central Ave., Chatham Maratime, Chatham, Kent ME4 4TB. No charge is made for single copies sent to governmental and educational establishments, research institutions and non-profit-making organizations working in countries eligible for British Government Aid (use official titles).

ECHOS FROM OUR NETWORK

Ian Wallace, Igreja Evangelica da Guine-Bissau on cashew. Ian writes that "On the whole I am not greatly enamored with cashew as a crop and would advise anyone thinking of large-scale cashew production to proceed with caution." His letter arrived just as I had visited some sites in the Amazon basin where cashews seemed to produce well and was wondering if I had been too negative in EDN 32-4. Perhaps someone in our network knows of a very successful cashew project. If so, please drop me a line. I would like to correspond with you. Ian's helpful observations follow:

"I was interested in your article on cashew production. Here vast areas of virgin bush have been cleared and planted with cashew trees in the past 10 years. Certainly the crop has not fulfilled all that was expected of it. Perhaps expectations were too high, or orchards are inadequately tended. Because the initial stages of raising the trees is so straightforward, there is a tendency to sit and wait for the tree to do its stuff with many orchards remaining uncleaned. The crop is unreliable.

"The little that is processed locally is of poor quality, the toxic skin being burnt off in an open fire. The majority of the nuts are exchanged by the government for rice then shipped raw to foreign processing centers. The true value of the crop remains unrealized since much of the profit is only added after processing. We have seen a disastrous fall in rice production as well. It is easier to collect cashew nuts and exchange them for imported rice than it is to work the rice fields. Although this is obviously a fault of the exchange policy, it is hard to see an alternative. There are no other markets for unprocessed nuts and the government has no other means of paying.

"You are right in saying that it is a labor intensive crop. Harvest time involves an army of workers, many of whom are children from age 6 upwards who are taken out of school for that purpose. It is rare to see men involved in the harvest. It appears that the system which is evolving is oppressive to the weaker members of the community, who rarely see any great benefit from the harvest.

"Cashew production has aggravated another social problem, drunkenness. The squeezed juice ferments quickly and without human intervention, to make a strong alcoholic drink in days. The cashew wine is available in far greater quantities than palm wine. Cashew season sees a very marked increase in drunkenness.

Jim Ram, Pacific Neem Mission, Hawaii. "My Moringa stenopetala tree is now 10 feet tall and growing vigorously. I really share your enthusiasm for this wonderful tree. It is one of the best species we have come across. Fast growing with good form, and high palatability. In fact, I commonly will eat the boiled leaves by themselves, [something I do not do with Moringa oleifera which is common on the island.]"

We have been out the seed for some months, but have just received a fresh shipment from Ethiopia, thanks to Dr. Samia Al Azharia Jain. Our overseas network can request a free packet, others send $2.50. (See EDN 32-5 for a discussion of this plant. Note that it does not bloom as quickly as M. oleifera.

Sina Luchen, Ministry of Agriculture, Zambia sent suggestions on controlling (1) monkeys and (2) blister beetles. "Some years ago I happened to stay in a place where monkeys were a major pest. From my experience, the most effective control method against monkeys is the use of a sharp pitched bell in the field which is rung at intervals of about 30 minutes. This need not be a complicated bell. A small metallic object struck against a hanging piece of rail or old plough disc is adequate. Monkeys are frightened at the sound of the bell. Clearing vegetation around the fields also helps, as monkeys prefer to hide in the bushes surrounding the field to scan for human presence before moving on the crop.

"I stayed where there were pet monkeys for 8 years and learned a few things about their behavior. Monkeys fear cattle. The sight of cattle sends a monkey in a frenzy panic. Our monkeys used to help us detect the presence of stray cattle in the unfenced orchard. Maybe there is a way to use cattle in fending off monkeys.

(2) "Recently we had an unusually high infestation of blister beetles Mylabris sp in okra. This can be a devastating pest to a number of crops including beans, cowpeas, cucurbits, maize by eating flowers, pollen and tender pods. One recommended method of control is hand picking. This must be done with care because the beetles secrete a liquid that causes blisters when it falls on human skin. Intensive sprayings with a number of recommended insecticides could not help much. ...I came across an agricultural bulletin from Lesotho in which it was reported that farmers there were controlling the beetle by use of blue containers filled with soapy water. This insect is irresistibly attracted to the color blue, flies into the container and drowns.

"We tried the technique. We bought 4 blue containers, filled them with detergent and placed them among the experimental plots which covered an area of 180 square meters. On the first day in an 8 hour period, 1200 beetles had drowned. It is recommended to cover the outside of the containers to avoid beetles hitting on the sides. Over a number of days, the infestation of the pest became drastically reduced. ...If the drowned insects are scooped out daily, the detergent can be reused for a number of days without having to change the liquid."

David Showalter, Paraguay. "Concerning ticks, one farmer keeps chickens in a grove of trees, where they run loose. When the cattle come into the woods in the heat of the day, the chickens eat the

ticks right off of the cattle. The cattle get used to this and do not seem to mind."

Leucaena psyllid in Africa. Mike Benge with USAID tells us that the leucaena psyllid that had such a devastating effect on leucaena trees in parts of Asia (e. g. Philippines) has reached Africa. It has been identified on the islands of Mauritius and Reunion. ICRAF and the CAB International Inst. of Biological Control are coordinating the design of a strategy for biological control of this pest. Host specific parasitic wasps found in the Americas as well as other natural enemies seem to have brought it under control in Asia. "In situations like this I do not believe that resistant varieties are the best answer. People should be cautioned not to lay too many hopes on resistance as breeding takes a long time and insects adapt so quickly and so well. They are like people, when sirloin isn't available anymore they'll eat hamburger."

Eddie Visser, AMG, Guatemala. "While transplanting citrus and leucaena seedlings into the ground, the soil would sometimes crumble off, leaving the roots of the transplant exposed. When this happened we dipped the roots into a mud solution, so that the mud adhered to the roots. Almost all the transplants we did this to are still living. The ones we did not do this to died."

 Subscriptions are $10 per year ($5 for students). Persons working with small farmers or urban gardeners in the Third World should request an application for a free subscription. Issues through #35 in a binder, EDN, the First Ten Years, costs $20 plus air postage: $3.00 USA (surface), $6 Latin America, $10 Europe, $13 elsewhere. ECHO is a non-profit, Christian organization that helps you to help the poor in the Third World to grow food.

ECHO DEVELOPMENT NOTES -- ISSUE # 37
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