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## ECHO's Seedbank

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(<https://www.echocommunity.org/resources/d12cadcb-11ac-487a-ae31-9d5015766ae4#Orde>)
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**ORDERING SEEDS FROM ECHO.** Only people who work overseas helping small farmers should write for free trial seed packets from ECHO; those who qualify include overseas missionaries, development workers, extension agents, and scientists. People who do **not** qualify for free trial seed packets include individual farmers anywhere in the world, home gardeners in North America and Europe, and others who do not work directly to benefit small farmers. Those not involved in development work must pay US\$2.50 per packet of seeds, postage included. People overseas should write ECHO for a current seed catalog, which is updated periodically. (Those in North America may purchase our descriptive catalog of selected seeds appropriate for outside the tropics; cost is \$1 plus \$1 postage.) ([https://cdn.ymaws.com/echocommunity.site-ym.com/resource/resmgr/a\\_to\\_z/azch12ec.htm#Table](https://cdn.ymaws.com/echocommunity.site-ym.com/resource/resmgr/a_to_z/azch12ec.htm#Table))

**HISTORY AND PURPOSE OF ECHO'S SEEDBANK.** The seedbank was begun in response to the National Academy of Sciences book *Underexploited Tropical Plants with Promising Economic Value* (1975), which described 36 plants selected as among the most promising plants for tropical regions. Unfortunately, at the time (and even today) there were few accessible sources for seeds or cuttings of these plants. Few scientists and research institutions were able to supply seed for these plants. ECHO was convinced of the tremendous benefit from putting seeds for these plants into your hands, so our seedbank was established for this purpose.

ECHO's seedbank began in 1981 with the top recommendations of tropical plant specialist Dr. Frank Martin--quail grass, amaranths, tropical pumpkins, lablab beans, tropical lettuce, and more. In 1996 our seedbank holds over 1200 accessions, and we actively maintain and distribute about 125 of these. We grow out most accessions to produce seed on ECHO's farm in Florida; we purchase others which will not grow on our site or for reasons of seed purity or disease we choose to obtain from



(/resources/ba65248a-801b-4204-bc9b-bfff42a9651f)another source. We do not carry seeds of many staple crops, as there are large organizations committed to research and improvement of these crops. We do not supply common vegetable or fruit seeds, which are commercially available through seed catalogs.

Our seedbank is a central part of ECHO's work. Though these plants are exciting, how much of your effort should go into working with them? Given the frequent difficulty in introducing a new food to a culture, it would most likely be unwise for you to make introduction of these promising but unusual plants a cornerstone of your work. You need to make an immediate impact on your community. Probably you have found some things that do this with little risk. Furthermore, people usually expect project results within a few years. A project to get winged beans, for example, widely accepted in your country would not be likely to succeed in that short time.

We believe that working with PVOs presents an ideal way to introduce such plants however. Why? Because you or your organization have made a long-term commitment to your region and can see the long-term possibilities. What is unlikely in 3 years becomes possible in 10 or 30 years. We are just as concerned with the people who will be living there in 30 years as we are for those today--and they may use winged beans as a staple! For example, the potato was introduced to Rwanda by European missionaries in the early 1900s. The people would not eat it. Today it has become a staple and 45,000 hectares are grown.

The cost of trying a few of these special plants is almost nothing. I cannot think of many things which can have such an impact in the long term at such a small cost today. Initial acceptance will probably come as a crop to be consumed by the farmer, with cash crop possibilities coming much later if at all. Do not feel embarrassed if you cannot report back to us that the masses are now growing the crop. Such reports are rare. If something catches on in 10 years, do not forget about us! We would be greatly encouraged to hear about it.

When you consider which "new" plants you want to try from ECHO's seedbank, it is often good to start with something which can be easily incorporated into the local diet. For example, while West Africans who eat a variety of leaves may readily accept a new leafy vegetable, a community in Latin America which considers leaves as animal food may not accept the same plant, no matter how tasty your recipes. People who eat soups often readily add a new plant to the soup pot. Watch for local cooking techniques which can be used with other plants. Be prepared for surprises, too: people in the community may find the new plants appealing for their novelty value, as occurred with rhubarb in highland Ecuador. Quail grass from ECHO spread rapidly through a village in Panama in part because people appreciated its colorful and ornamental appearance.  
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### **THE NATURE OF PLANT INTRODUCTION: SOME IMPORTANT**

**CAUTIONS.** ECHO supplies small seed packets **for trial**. It is important to understand that the plants must be treated at first as experimental before making recommendations to members of your community. Many, many development workers have introduced and promoted "miracle technologies" and "wonder plants" before giving them adequate trial and experimentation on site. Not even studies in the same country can guarantee acceptance or success. Hasty introductions of new ideas or plants are likely to encounter serious problems. Farmers may have planted their fields with the new varieties or invested their savings in the new tool when the problems surface; perhaps a pest or disease strikes, or the equipment is faulty or unsuitable. In the end, farming families will suffer, and the development worker will understandably have a very difficult time promoting any further ideas or innovations. People may lose confidence or trust, with serious consequences for your work or ministry.

There are many advantages to conducting your own trials before disseminating seeds in the wider community. It is important to know whether the plant can grow in your area before farmers devote land and time to cultivating it. Through conducting trials you may find the best "window" in your seasons for the optimal performance. You receive only a small packet of seeds (</resources/88c42ecb-e7ae-4b09-ba88-fb1bc9cac175>) from ECHO; if the plants produce well, you will have plenty of seeds

to share. If the plants do not grow and produce seed, perhaps they are not suited to your region. Should the species be enthusiastically accepted, ECHO



can refer you to commercial sources for some seeds if you need larger quantities or want to broaden the genetic base. If the plant holds great promise in your area, it is best to obtain more seeds from another source before the planting areas become too large. Genetic diversity not only offers potential for superior plants to be identified, but also affords protection in case of disease outbreak. (See the discussion of the Small Farm Resource Development Project in the first chapter for more about conducting trials.)

Beyond avoiding the risk of total planting failure, small trials allow you to evaluate the "weed potential" of certain species in your area. Watch the planting carefully the first few seasons to make sure it is not likely to become a problem plant.

Unfortunately, one definition of a weed, "plants which thrive under stressed conditions, often with high seed production," fits some of the plants in ECHO's seedbank. We are very aware of this risk and have in fact eliminated certain species from our seedbank when the danger of introducing a weed seemed too great. However, hardy plants which can establish themselves may be a great blessing in many situations; for example, it is difficult to imagine a tree which could become a pest in certain areas of Africa or Haiti with severe fuelwood shortages. Sending out only small trial packets of seed is another safeguard against introducing a weed, as too-aggressive plants may be identified and controlled easily in a small area. Finally, remember that the plants in ECHO's seedbank are commonly accepted food plants somewhere in the world, even if very localized. In this, too, there is a measure of safety as we can all learn and benefit from the years of plant selection by people in other parts of the world.

ECHO's seedbank is very small. We do not guarantee the seed count in each package, the viability may sometimes be low, and there may only be a small number of seeds in your packet if our supplies are limited and demand is great. We cannot supply quantities of seed for routine production. Rather, we expect you to increase your own seed if the performance of the plant warrants this. Sometimes we may send more than one variety of a requested seed, so that you may determine which of these gives superior performance in your region.

In all cases, we look upon those who request seed as collaborators with us in field trials. This does not mean that you must do elaborate experimentation, but we do expect you to take time to write to us after the food has been harvested, letting us know your general impressions on its suitability to the region and the culture. A seed trial report form (in English, French, or Spanish) is sent along with your seeds. We enter your results in our database and use this information to make more refined (</resources/d758ded5-2e08-4c0e-90c5-00938f1811f2>) recommendations to others and to share with interested scientists. These reports are very important to us, to be aware of germination or weediness problems, as well as to learn of

successful introductions and acceptance of the plant in the community. We are always glad to receive the seed trial reports, but we also have special interest in longer-term results of plant introductions and the effects of ECHO's work. If you receive seed from ECHO and the plants are adopted in the fields and gardens in your area, please let us know.



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**TRANSPORTING SEEDS AND CUTTINGS.** We should all be aware of the danger of inadvertently introducing a new pest or disease to an area along with a new plant. This is a serious concern, and it is one of the reasons we do not distribute major cereal grains or commercially important crops. Many pest outbreaks (the cassava mealybug in Africa and hundreds more such cases) have occurred when someone carried an infected/infested plant to a new area which lacked the natural predators or controls of the pest's native habitat. We do not send seeds known or suspected to carry such problems. All of our seeds are treated with fungicide and insecticide to minimize this risk. You should also keep a close watch on new plants for pests and diseases, and let us know of any problems you experience.

ECHO will send you the seeds you order, treated as described above. You are responsible for the seeds upon arrival. The next time you are in the capital city of your country, you might inquire about any special procedures for importing seed, then send us any required forms with your order. (If your plant import permit requires a phytosanitary certificate, the certificates are issued by a government plant inspector certifying that he/she has visited the farm, seen the plant material and that it is free of disease and insects. These are most likely going to be required for shipments of live plants or cuttings. We must pay the inspector \$20 for the certificate, so please enclose that amount with any order requiring it.)

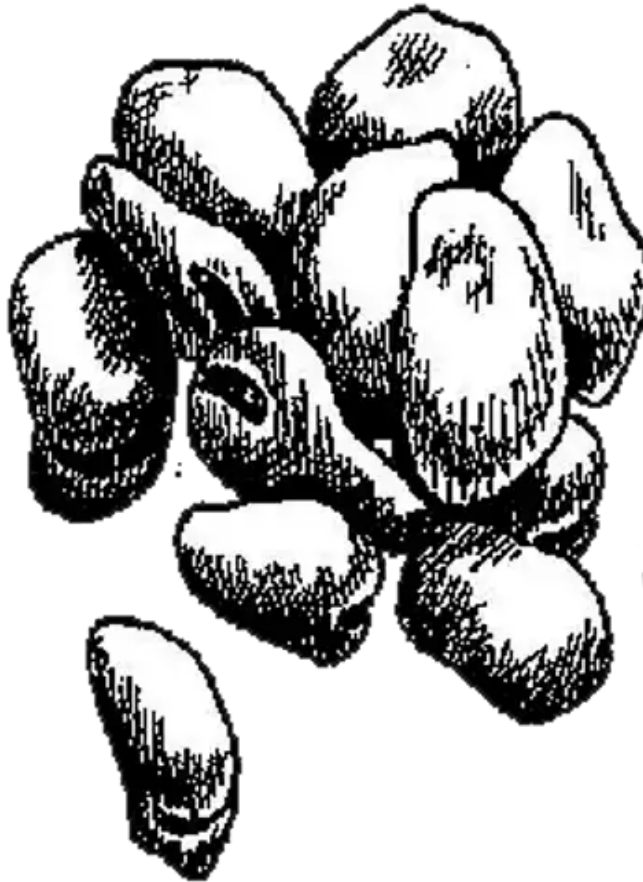
Like many universities, ECHO has an "unofficial" phytosanitary certificate in which we certify that, to the best of our knowledge, seed came from disease-free and insect-free plants and that the seeds have been treated with insecticide and fungicide. If requested, we enclose this with seed orders large enough to require a package. If you believe this certificate would be helpful you can request that we enclose it. However, it will not be enough with higher-risk imports, such as cuttings or roots of sweet potatoes, and certainly will not suffice if your import permit requires an official phytosanitary certificate.

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**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 first 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.

When you send seed to ECHO, please treat it with a **modest** amount of insecticide. Please do not cover the seeds in quantities of powders; our customs inspectors do not appreciate that, and they may dispose of overtreated seed. We do need (/resources/dede74b4-619a-420d-a39f-a49e16501f98)to be careful about pests. Years ago, there were two containers of seed sitting on my desk, each with a different type of adult insect pest crawling all over them, both sent to us from overseas. Fortunately the containers were well sealed and I was able to destroy the pests promptly. In another instance I was not so fortunate. I had a bouquet of a dozen dried sorghum heads in a vase, each a different type from Purdue University's International Sorghum Variety Trial, which I had cherished for twelve years. Someone sent an envelope of corn from overseas, and it was left in my office for a few weeks. One day I noticed that small insects had emerged from the seeds inside the envelope. I immediately put the envelope in the freezer to kill the insects, and I disposed of the grain. A few weeks later, however, the same insect was discovered destroying my sorghum bouquet; by that time, it was too late to save the bouquet, and it had to be discarded as well.

A related issue: please do not send infested seed or a diseased leaf or soil in an envelope for us to identify. ECHO does not have an entomologist on staff, and we cannot have your problem getting loose 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 be sufficient. In most cases, precise identification is not important. 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.

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**GETTING YOUR 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 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, 4700 River Rd., Unit 136, Riverdale, MD 20737, USA; phone 301/734-8645; fax 301/734-5786. 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 (so ECHO's Miami permit cannot be used in New York). For 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.

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