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ECHO is a Christian non-profit organization whose vision is to bring glory to God and a blessing to mankind by using science and technology to help the poor.

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Please note our new web site

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Management Can Be Learned

By Calvin Yoke

Introduction (Martin Price): During visits with missionaries in Third World countries, I am often asked questions about management problems. After 22 years at ECHO, I have some experience to offer. If God gives you a little vision, you can handle it yourself. But if He gives you a big vision, you will need to learn to motivate and manage a team.

Flying home from one of my trips, I found myself seated next to someone who spoke enthusiastically and insightfully about management.

Calvin Yoke has 23 years of management experience in private industry, both in the U.S. and Europe. He has worked in agricultural services, retail and supply, and manufacturing. I quickly realized that here was a man who loves management and has read widely and thought deeply about the topic. He has a Christian view of management; management as service to others. Though much of Calvin's experience is in the commercial sector, people are the same everywhere and you will find many of the principles applicable to your situation. We invited him to speak at our Agricultural Missions Conference in November 2000. The response was the most positive and immediate of any of the great talks we heard that year. Both missionary and national delegates obviously had struggles in the area of management. We later asked Calvin to return to ECHO to make a video based on his talk. The video (VHS), "Management Can Be Learned," is available from ECHO for \$19.95US plus shipping. We decided a summary in EDN would be helpful for those who do not have opportunity to watch the video. Following is the summary of Calvin's talk.

The area of management may seem foreign to many agricultural development workers, but good management can be an effective ministry. Most people spend the bulk of their hours under someone's management. There is no greater opportunity than that provided by management to make a positive impact on the world.

Before talking about what management is, let's talk about what management is not. Management is not making people do what they don't want to do. That idea is completely wrong. Yet it is a misconception I held when, in November 1976, I was selected manager of 28 people. At 32, I was told I was too young for the job, and looking back I know it was true.

Nor is management a matter of "us" and "them." Too many people imagine a wall between managers and employees. That is a common perception, but it doesn't work. Rather, management should be looked at in terms of "we".

You might say to yourself, "I'm not a manager. This doesn't apply to me." But if you are in charge of more than one person or resource, or if you need to achieve several results, management is required.

Effective, long-term management involves a continual process of learning. Realize that mistakes will be made until you die, but also realize that no organization will survive if it is not a learning organization. Be open to new things. Management requires a commitment to continual learning.

Effective, long-term management is not all about charisma, power, brilliance or courage. In fact, a good manager will hire people who are brighter and more talented than him/herself!

Effective, quality, long-term management is about two things:

- 1) Creating and/or communicating a vision.
- 2) Building synergy. Synergy is when $2 + 2 = 5$. For example, imagine that two individuals working alone can each produce 2 of an item, making for a total of 4. Working together they can produce 5. Managers need to take the resources available to them and allocate them so that the total outcome is greater than the simple sum of those resources.

I have come to recognize several powerful “tools” that you can use as part of a management tool kit. We’ll go through them one by one.

Vision

This refers to the “What” and, to a lesser degree, the “Why” of what people are doing. Vision is how you are going to achieve your statement of purpose.

Create or lead the creation of a vision for your organization if you can. Even if you can’t create the vision, you must communicate it! This is not optional! Vision leads as much or more than the leader does. Vision gives purpose and reason for results. Vision must compel and motivate. Examples of compelling visions are “to help people” or “to improve people’s overall quality of life.” Every single activity of an organization must be able to connect with the vision. Having a vision removes confusion. Keep it short and simple.

You need to have vision before you can create synergy. The large over-riding vision should last forever and should include everybody. All employees should know the vision and be able to remember and recite it. Keep the vision in front of the organization at all times. Changes should be few and for very good reason, and any changes must be communicated clearly and immediately by top management.

Integrity

Integrity is essential, but very, very fragile. It can be breached very subtly. We are not talking here about overt dishonesty like lying and cheating. Every time integrity is breached, it must be built back if you are to have credibility with employees. Here are some ways to build (and maintain) integrity.

Keep every commitment you make, big or small. People keep a mental tabulation of mistakes and of times when you don’t follow through on something. Say what you mean, and mean what you say. Don’t say too much.

Build trust by balancing courage with consideration. Too much of the former and you will be viewed as a bully; too much of the latter and you’ll be seen a pushover. Sometimes a manager has to be firm with compassion.

Humility is an essential part of integrity. People don’t want to hear you brag. Be consistent in what you do and say. Know the facts of everything you say. Keep your emotions under control. Take a walk behind the building if necessary.

Associate with credible resources. This includes things you read and people you talk to. Treat people equitably (that is,

deal fairly and equally with all concerned). People make note of it. Remember that integrity can be breached by a single word or action.

Profile of a Quality Worker/Employee

What should you look for in a worker or employee? You want to find the best people and find the best in them. Generally speaking, character is of the utmost importance, second is a good work ethic, and last is skills. After all, skills can be taught. I look for six specific things in the profile of a good employee. In the order of importance, here are the key things to look for:

- Integrity. The prospective employee needs to understand and desire high integrity.
- Cooperation. Cooperation is not a natural behavior. Our society is doing less today to build cooperation than ever before. And yet this is one thing over which employees have complete control.
- Resourcefulness. This characteristic will not be worth much without the first two.
- Initiative.
- Skills needed to do the job. Skills can be learned.
- Meets or exceeds expectations. Can the person you are considering meet or exceed expectations? Will they do so through skills and training?

Solution-Oriented Responses to Mistakes

Above all, you want to build a safe zone for people. People are looking for security, for a place where they know they will be treated with dignity. Most times this is even more important than a high salary. One part of dignity is about looking for solutions without passing judgment.

Encourage people to admit their mistakes so that they can learn from them. Let them know that it is okay to make mistakes. If a genuine mistake has been made, people should not be judged for it. Instead, focus on reaching a solution; don’t dwell on how or why it happened or who made the mistake. Often the “how” and “why” are important to get to the solution, but they should not be used to cast blame. Create an environment where it is okay to make a mistake. But with that said, repeated mistakes are not okay. People must not get the idea that they can be careless.

Subordination

This is an incredibly powerful tool. Management is best done in service to others. Here we can practice the Biblical teachings of love, compassion and caring. People would rather work with you than for you. People will work as a team when they are treated as a team. You can’t do the job alone.

Give credit to others rather than taking it for yourself. Make yourself last in all situations, even when standing in line at the water cooler. When a decision needs to be made, get input from others first. You have the final say, so make your decision after listening to everyone else. Listen way more than you talk. This is difficult, but something that good managers learn to do. Remember that subordination balances firmness.

If you demonstrate your concern by your actions, you'll have more credibility when the time comes to be firm.

Coaching Model for Resolving Problems

When you have to address a problem, the coaching model can be a helpful way to do so. This model is a way of meeting people's needs and a way of living out the gospel.

- **Wants.** People's wants (both employee and employer) are important. Ask your employee, "What do you want? Are you getting everything you want in and from your job? What is missing?"
- **Direction.** Ask your employee where his/her behavior is leading him/her. "How badly do you want the things you listed?"
- **Evaluation.** Ask if his/her behavior is directed properly. "What would you have to change to get the things you listed? Are you willing to make those changes?"
- **Planning.** Ask the employee what he/she could do to improve, and set a time for a follow-up meeting. "What is your plan of action? On what date will we review your progress?"

Using this model, you help another person to recognize and address the problem on his/her own, rather than being told what he/she is doing wrong. You walk him/her through it. Remember that the coaching model goes both ways. It can also be helpful for employees who wish to understand their employers' behavior better.

Here is a suggested list of wants you could discuss with an employee who was dissatisfied:

- Do you have the respect from your peers you would like to have?
- Are you getting the recognition you want?
- Are you getting the fulfillment you desire?
- Are you satisfied with your compensation (e.g. pay and benefits)?
- Is your career on path?
- Is there the proper amount of stress?
- Do you have the amount of autonomy you want?

Valuing People

Protect people's dignity even when dismissing them. Do this not only because it is right and because you want to preserve their dignity, but also because other employees will watch how you handle a dismissal situation.

Discuss employees only in their presence, or tell them that you are meeting about them and then later bring them into the discussion. Never correct someone publicly. Give your employee the benefit of the doubt as much as possible. Don't form a judgment until the last minute. Don't deal with people when you are very emotional (unless you consider compassion an emotion!). Know your employees' strengths as well as you know their weaknesses. Start out with the positives when you confront them. Be concerned about your employees' wants and needs.

Clear Performance Expectations

People need feedback about how they are doing. No one is going to work to their best ability if they don't know what is expected of them. First of all, employees need a job description that lists what is expected of them. It can be very enlightening for an employee to learn where most of his/her emphasis is supposed to be placed. Job descriptions can change over time. They should include the broadest list of tasks and duties within the job. Performance expectations attach an individual's behaviors and performance to the vision of the job description and to the departmental and organizational vision.

Performance expectations should not be abstract. Employees need to know what they should be doing and why. Expectations should result from and include the entire job description. Performance expectations focus on the results that are desired and the changes that are needed. Emphasize only results or behaviors that you want to change or improve. Usually no more than three or four expectations should be given at once; more than this and they probably will not be remembered. All of these expectations should funnel down to one overall result, to help the person stay focused.

Performance expectations must be measurable. Include a quantity and a date by which you expect to see the changes. "How many?" "By when?" Performance expectations must be a measure of an employee's total fulfillment of their job description. Performance expectations should also be easily understood, mutually agreeable, and repeatable by the employee. Setting performance expectations with employees is actually linked to integrity. Employees need to know what a manager expects of them. In a service organization, a way to measure performance might be to ask, "What are the people you serve receiving?"

Democratic Decision-Making with Dictatorial Implementation

Democratic decisions create the strongest commitment on the part of everyone involved. The majority rules, and the minority agree to support the majority's decision. Democratic decisions can take a long time to reach, but they save time in the long run. In the decision-making process, be sure to involve people that are responsible for executing decisions.

Once a decision is made, effective implementation of that decision is led, not discussed. A poor decision brilliantly executed is better than a brilliant decision poorly executed.

Creating Win/Win Situations

In situations where an employee is unhappy, make a commitment to look for a "win/win." "Win/lose" should never be an option. Go into every situation looking for the win for the other person first. You really need to want this for it to work. When you state this as your intention ("I hope you win"), the other person will be surprised and tension will immediately be reduced in any situation. By knowing the other person's win, you can sometimes shape your win to be even larger. Ask what your employee's wants are, and then

listen. Many times, expressed wants are smaller than what you would have conceded anyhow.

Be a Light, Not a Judge

People are ignorant, but not incompetent or stupid. Don't condemn, but rather teach. Don't take employees' treatment of you personally. Don't argue with people, but probe, learn, and continue to enlighten. In problem situations, look for the deepest source of darkness in the person, rather than addressing surface behavior. You may be able to teach an even bigger lesson than you thought. Persevere and be patient with people.

Stump Speeches

These are quick phrases or sentences that simply convey a belief or concept. They should be less than three minutes in length. Stump speeches are powerful because they are ready on demand, are easily remembered, and can be repeated often. An example of a stump speech is, "We must preserve people's dignity at all costs."

Conclusion

Management can be a powerful opportunity to be of service and to make the work of an organization more effective. I have found these tools helpful as I worked in management positions. I hope that you will find them helpful as well.

Increased Yields, Less Disease

By Dawn Berkelaar

A few years ago, the journal *Nature* carried an exciting article called "Genetic diversity and disease control in rice" by Youyong Zhu *et. al.* An international team of scientists working with thousands of small farmers in China demonstrated a simple method to increase the yield of two varieties of rice (*Oryza sativa*) and to reduce incidence of a disease called rice blast. One of the rice varieties, glutinous (or 'sticky') rice, is more valuable economically but is also more susceptible to rice blast. The other, a hybrid variety, is much more resistant to rice blast. Rice blast is caused by the fungus *Magnaporthe grisea*. Spores of the fungus are airborne. When they land on rice plants, they often cause necrotic (dead) spots on leaves and panicles. Farmers in Yunnan Province in China used to plant monocultures of the relatively resistant hybrid rice, planting only tiny plots of glutinous rice because the latter was so susceptible to rice blast.

In the experiment, instead of the usual monoculture fields, farmers planted the two varieties of rice together. They planted four rows of hybrid rice between each row of glutinous rice. Monoculture fields were also planted for comparison.

Results of the experiment were surprising. For one thing, when interplanted with hybrid rice, the incidence of rice blast on the disease-susceptible glutinous variety was 94% less severe than when glutinous rice was grown in monoculture. Why such a reduced incidence of disease? One reason might be because spores would have to travel further to land on a

susceptible plant because of the greater distance between rows of glutinous rice in mixed fields compared to monoculture fields. A second reason for the reduced incidence of disease might be related to the fact that glutinous rice is taller than the hybrid variety. The authors suggested that this might lead to "temperature, humidity and light conditions less conducive for blast on glutinous varieties." Though they do not explain the phrase further in their article, it makes sense that rice heads standing above the rest would be warmer and dryer and would receive more light.

Although low to begin with, rice blast incidence on the hybrid variety had also declined by the second year of the experiment. The authors raised an intriguing possibility to explain why the incidence of disease was so much less when the two varieties were planted in a mixture. They wrote, "Preliminary results indicate that fields with mixtures supported diverse pathogen populations with no single dominant strain. In contrast, pathogen populations from monoculture fields were dominated by one or a few strains." This means there might have been "incompatible interactions" between certain rice blast strains and the hybrid rice variety.

A second positive result of the experiment was that the yield per hectare increased when the two varieties were planted in a mixture. Glutinous rice yielded almost twice as much when planted with hybrid rice as it did when planted in monoculture. Hybrid rice in the mixed fields yielded as much per hectare as it did when planted in monocultures. Overall, mixed populations produced more grain per hectare than monocultures.

Why was the yield of glutinous rice so much higher in fields planted with a mixture? The reduction in disease severity very likely played a role. The authors also suggested that improved light interception by the taller glutinous varieties may have played a role.

By the end of the two-year experiment, farmers had stopped using fungicides, which meant less expense for them. Since the farmers harvested rice by hand, the hybrid and glutinous grains could be easily separated.

Would other varietal combinations work? The authors pointed out that not all of the variety combinations that they experimentally identified provided rice blast control. However, there is potential that a similar method could be used for other crops.

Reference: Zhu, Youyong, *et al.* 2000. Genetic diversity and disease control in rice. *Nature* 406: 718-722. (Readers working in the area of agricultural development who would like a copy of the full article and who do not have access to this journal may write to ECHO and request a copy.)

The Malian Peanut/Groundnut Sheller

The Malian Peanut/Groundnut Sheller is a simple machine, requiring less than \$10US of materials. It was developed by an

engineer from North Carolina (in the United States), who visited a Peace Corps volunteer in Southern Mali. An increase in peanut cultivation was underway, to increase the protein in children's diets, improve soil fertility, and provide a cash crop. Peanuts were traditionally sun-dried, which made them more difficult to shell than if they were dried by roasting. The engineer, with the help of other individuals, invented the Malian Sheller.



Figure 1: A picture of the Malian peanut sheller. More photos are available on the web (see web address elsewhere in this article). Photo used with permission.

It is hand operated and capable of shelling 50 kilograms of raw, sun-dried nuts per hour. It is made of concrete (poured into two simple fiberglass molds), some primitive metal parts, one wrench and any piece of rock or wood that might serve as a hammer. It accepts a wide range of nut sizes without adjustment. If necessary, adjustment is easily done in seconds. In Mali, it is estimated that one machine will serve the needs of a village of 2000 people. Traditional shelling machines press the nuts through slots to release the kernels from the shell. This works well with nuts roasted in the shell, but poorly if they are sun-dried. The Malian Sheller, however, rolls the nuts in an ever-narrowing space, between two concrete surfaces, at ever-increasing speed. The machine is loaded with about a liter of nuts. The handle is then turned quickly for about 20 seconds. The kernels and shell fragments fall into a shallow basket and are winnowed.

The life expectancy of the machine is around 25 years. Its design is public domain, and local experience will likely improve the design as time goes by. The Coastal Carolina Returned Peace Corps Volunteers offer technical assistance to non-profit groups planning to use this design in their programs (see contact information at the end of this article).

If the fiberglass technology for mold making is unavailable in your area, the Coastal Carolina Returned Peace Corps Volunteers will provide molds at cost. If fiberglass molds can be made in your area, and you wish to bypass the complex process of 'plug' making, (plugs are the forms on which the fiberglass is applied), they will lend you plugs in exchange for

a cash deposit. They will supply (also at cost) sample sets of metal insert pieces that can be easily copied by local welding shops. In return for this support, they ask only that you keep them posted on the progress of your projects and send them some photos of the shellers in action.

Drawings and more details about the sheller are available from the group's web site at www.peanutsheller.org. If you do not have access to the web, write to us and we will send copies of the diagrams. Any technical questions in English, French or Spanish can be promptly answered by contacting the following: Jock Brandis; 1317 Princess Street; Wilmington, NC 28401; USA; e-mail: info@peanutsheller.org.

A Caution about Eating Excessive Amounts of *Moringa stenopetala*: Eat Like the Deer

By Dawn Berkelaar

NOTE: THIS IS NOT THE SPECIES OF MORINGA THAT MOST OF YOU ARE GROWING! Most cultivated moringa trees are *Moringa oleifera*.

In a survey reported in the *East African Medical Journal*, 597 school children and their parents were surveyed in areas of southern Ethiopia that have very high incidence of goiter. Measurements of iodine concentration in the urine showed that children were getting plenty of iodine (Lack of iodine can cause goiter.) One important factor in the prevalence of goiter was a familial tendency to develop goiter. Children whose parent(s) had goiter were significantly more likely to develop goiter themselves.

Also significant was the role of locally consumed foods. Survey participants were questioned about the regions' most commonly consumed foods, including maize, yam, potato, teff, *M. stenopetala* (locally referred to as halleko) and sorghum. Only *M. stenopetala* had a significant association with the prevalence of goiter. In particular, those who ate *M. stenopetala* more than twice per day were 4.57 times more likely to have goiter than the other groups.

The authors of the article mentioned that isothiocyanate and hydrocyanic acid have been isolated from a related species of moringa, *M. pterygosperma*. Isothiocyanate is a known cause of goiter, while hydrocyanic acid metabolizes to thiocyanate in the human body. It is possible, but not proven, that *M. stenopetala* may also have similar substances.

The authors recommend that further studies be done on *M. stenopetala* to find out what links (if any) its consumption has to the occurrence of goiter. Until then, what should you do if you are growing *M. stenopetala*? Before you become alarmed and stop eating the leaves of this valuable tree, remember that practically any food contains both helpful compounds (e.g. carbohydrates for energy; protein; vitamins and minerals) and harmful ones (e.g. hydrocyanic acid). Our advice has been stated in *EDN* many times previously: "Eat like the deer." That is to say, whenever possible, like the deer, eat a variety

of different foods in moderation rather than very large quantities of one thing.

Alley Cropping: a System to Sustain Soil Productivity

Dennis Shannon, Associate Professor in the Department of Agronomy and Soils at Auburn University, sent us information about alley cropping, including results from experiments done by him and his colleagues. The full write-up (called "Alley Cropping: A System to Sustain Soil Productivity") is available from our web site (www.echotech.org), or a paper copy can be sent to interested readers if you send us a mailing address. Below we summarize some key points of the document.

When selecting a hedgerow species for alley cropping, keep in mind that leaves should readily decompose when applied to the soil. Shannon wrote, "Some species, such as *Flemingia macrophylla*, have a chemical composition that causes them to decompose slowly. These species would be more appropriate for situations where the aim was to provide a mulch cover and increase the soil organic matter reservoir in the soil. In a study conducted in Haiti, gliricidia (*Gliricidia sepium*) had the fastest decomposition rate of five hedgerow species tested, though leucaena (*Leucaena leucocephala*) and gliricidia were tied for total amount of nitrogen released in a period of eight weeks, because leucaena had a much higher yield of leaves and small stems."

Shannon commented that results with leucaena might be inferior outside of its native range of Central America and the Caribbean. That is because of the psyllid, an insect that severely damages leucaena in parts of Asia and East Africa. In its native range the psyllid does not seem to pose a problem except at higher elevations. Regarding tests conducted in

Haiti, Shannon wrote, "*Acacia angustissima* was the most productive hedgerow species tested and released the most biomass at 900 to 1200 m elevation. *Calliandra calothyrsus* also appears promising under high rainfall, but was not as productive in our trials as *A. angustissima*."

Shannon also commented on the importance of applying prunings to the soil, and of timing the pruning operation. He and colleagues grew hedgerows among maize (grown without fertilizer) over a period of seven years in a location in Haiti with a slope of 23% and with a shallow soil that had high pH and high organic matter content. For a control, they used a rock wall (instead of tree hedgerows) on plots that had 25% more plants (because with hedgerows, the alley cropping takes up space). The hedgerows were pruned as follows: 1) at planting and 30 days after planting, 2) at planting and 40 days after planting, or 3) at planting, 30 days after planting, and 60 days after planting. Shannon summarized the results as follows: "Averaged over the 12 seasons when a crop was harvested, the best pruning regime yielded only 7% more maize than the rock wall control. However, for the rock wall treatment, the high yields were in the first seasons, while with alley cropping, the yields were relatively stable across the period of the trial. In the best seasons, the alley cropping treatments yielded 30% higher than the rock wall treatment, despite having 20% fewer maize plants." Tree hedgerows also seemed effective at reducing soil loss, and can provide wood for fuel and staking.

[Ed (MLP): I attended a conference at the World Agroforestry Centre in Kenya this past November. Dr. Pedro Sanchez, its Director General until recently, commented that, to their surprise, after extensive research on alley cropping, they have concluded that in most cases it does not appear to be that promising. I believe that where rainfall is limiting, competition with water is one reason for this.]

BOOKS, WEB SITES & OTHER RESOURCES

New ECHO Technical Web Portal

By Dawn Berkelaar

If you have checked ECHO's web site lately, you probably have noticed that its format has changed. The old address (www.echonet.org) is now mainly devoted to public relations activities. The technical information side of the web site is now found at www.echotech.org. (You can also link to it from www.echonet.org.)

We are excited about this new web portal, because it will make it easier for members of our network to interact with ECHO. On the top left of the home page, visitors are prompted to log

in or register. If you are new to the site, you will need to click on the hyper-linked word "Register." Here you will be able to create a user name and password. We ask that everyone use the same naming convention, which is your FirstNameLastNameCountryCode. Once registered and logged in, you will have the ability to submit information (articles that you have written, for example), request information (regarding a technical request, conference question, or technical problem with the web portal) or correspond with the web master and other registered users (using a private messaging system within the web portal).

Articles that are submitted will be reviewed and edited by one of our web editors, and then will be posted to the web portal. We hope this will enable users to learn from each other and to get feedback on different topics.

In coming months, we hope to add the seed bank database to the web portal, so that registered users can see what seeds we carry and which ones are in stock.

Documents that were available on the old web site (such as Technical Notes and past issues of *EDN*) are still available as downloadable files from the new web portal. Beside each file link is an indication of the size of the file, so you can decide whether or not it

is worth it to download the file (especially if you have a slow Internet connection that makes it frustrating and expensive to download large files). Another number next to the file link indicates how many times that particular document has been downloaded. In the very near future many of our old “downloadable” files that were in PDF or Word format will be instantly accessible from the web portal, and will no longer need to be downloaded.

We have begun to add multimedia files to the web portal, including PowerPoint presentations, streaming video, and audio files. Again, the size of the download will be indicated. If you have a slow Internet connection, you can simply choose to avoid the large files.

If you are working in the area of agricultural development and would like to submit an article or information about a web site that has helped you, we welcome you to try out the new web portal. We want it to be as helpful as

possible for development workers, so please submit only information pertaining to development work. The administrators reserve the right to not post material that is deemed unsuitable. If you do not have access to the Internet but would like to share some information with other members of ECHO’s network via the web site, you can send it to us as an electronic file by e-mail or on a floppy disc or CD, with a request to place the information on the web site.

FROM ECHO’S SEEDBANK

***Dolichos lablab*: A Legume that Feeds People, Animals and the Soil**

By Cheryl Beckett
ECHO Seedbank Staff

The lablab bean *Lablab purpureus* (or *Dolichos lablab*) is a versatile subtropical and tropical nitrogen-fixing legume. The many agricultural and nutritional uses of this bean are worth noting. Depending on the variety and regional practices, lablab can potentially be used for human consumption, animal fodder and forage. It is a multipurpose legume that can be used as a cover crop, providing green manure, erosion control and weed suppression. Lablabs are most widely cultivated in sub-tropical areas of Africa, Central and South America, the West Indies, Southeast Asia and Indonesia.

Lablabs are drought-tolerant, but do need adequate moisture for establishment. In drier areas they tend to do better than velvet bean, *Mucuna pruriens*. The ideal temperature range for lablabs is between 18 and 30°C (64-86°F) but they can withstand temperatures as low as 3°C (37°F). Depending on whether frosts occur in your area, the bean can be grown as an annual or as a short-lived perennial. Most lablabs can be used for human consumption in some form. Most ‘red’ varieties are considered entirely edible. Young pods are eaten as vegetables, while leaves and flowers can be eaten raw or cooked and eaten like spinach. Leaves are a high source of iron and

contain up to 28% protein on a dry weight basis. Seeds can be eaten as sprouts; in such a form they are comparable to soy or mung beans. Seeds of any variety can be eaten as a cooked pulse or can be processed further into tofu or fermented into tempeh. Like most other legumes, when eaten as a pulse the dried seeds need to be soaked and boiled to break down a trypsin inhibitor. Lablabs’ hard seed coat necessitates a longer cooking time than common beans.



Figure 2: *Lablab* plant with pods on it.
Photo by Bob Hargrave.

Lablabs also have a huge potential as forage/fodder material for livestock. Cattle, sheep, goats and pigs graze on the bean. Palatable hay and silage can also be made from the leaves. Lablabs are often intercropped with corn and sorghum or used as a ground cover between bananas or other taller plants.

Lablabs come in two main botanical types (although like many classifications in science, the lines can get blurry here, even within the same variety depending on when the planting occurs). The “garden-type” varieties are generally twining and like support.

They are most often used as green vegetables and typically mature later. ECHO carries one variety of garden-type lablab. The “field-type” varieties are more erect and bushy. The pods are often more fibrous and not used as vegetables. These generally mature earlier and are used as a forage or groundcover.

A caution worth noting is lablab’s slow early growth, which necessitates weeding during establishment. Lablabs are also susceptible to root knot nematodes.

The varieties ECHO currently offers from our Seedbank are as follows:

Highworth: This field-type variety originated in South India. It was originally intended for use where early frosts prevented the use of Rongai. It is known for early flowering and can produce high yields. Highworth is a black-seeded variety with purple flowers and is specifically for pulse (i.e. dried seed) production and forage use. Pod maturity is more uniform than on Rongai. Pods are borne well above the foliage, which simplifies seed harvesting; this variety could be suitable for mechanical harvesting and production. Highworth has performed well on the ECHO farm in Florida.

Rongai: The Rongai variety, also a field-type, was first introduced from the Rongai region in Kenya and was further developed in Australia. It is a white-flowering, brown-seeded variety known for vigorous production. It matures later than Highworth, but in some places will

out produce Highworth. Rongai has also performed very well in Florida. It can be used for pulse production and forage.

White: This white-seeded field-type variety is good for a cover crop and forage. It can also be used for pulse production. Historically, we have found white lablab to produce less than other varieties.

Red: This garden-type variety is completely edible. Young pods can be eaten raw or cooked like vegetables, and seeds in older pods can be eaten as

a pulse. Young leaves can be eaten raw in salads and older leaves can be cooked like spinach. Flowers can be eaten raw or cooked. The large starchy root is also edible.

Lablab is a versatile legume; its multiple uses and highly nutritious quality for humans, animals and for the soil make it an important underutilized crop. It is easy to collect seed from lablab plants. Like most legumes, the seeds can be stored for a long time under dry, cool conditions. Those working in agricultural development in a developing country may request free

sample packets of the above varieties of lablabs or a packet of mixed lablab varieties (save seed from whichever plants do best). Others may purchase seed from ECHO. The overseas price is \$3.50 per packet (includes shipping). Within North America, the price is \$2.50 per packet (\$4.50 for red lablab) plus \$1.00 for shipping. The seedbank also has bulk quantities of Highworth and Rongai available. Contact us for prices and let us know the amount of seed that you wish to purchase.

UPCOMING EVENTS

Christian Community Development Conference

February 9 to 13, 2004
Stuttgart, Germany

The Christian Community Development Conference will be held at the Academy of World Mission in Korntal (near Stuttgart). Topics that will be addressed include: community based rehabilitation; children's participation; holistic ministry; stewardship: caring about natural resources; introduction to participation; and multilevel activity in transformational development. The conference will combine workshops and presentations. It will be held in English.

More information is available by e-mail. Send an email to the server at Butler_Johann@gmx.de, and include the code of the topic (codes are below, next to the asterisk) in the subject line. The information is sent automatically in condensed form (zipped files, ranging from 19 to 51 kb in size), free of viruses. It should reach you within 30 minutes.

- * 2.204 General Information
- * 2.204a CBR: Community-Based Rehabilitation
- * 2.204b Children's Participation

- * 2.204c Holistic Ministry
- * 2.204d Stewardship: Caring about Natural Resources
- * 2.204r Registration Form
- * 2.204t Time Table

If you have trouble with this system, send your request to Matthias Boeddinghaus at [<smf@aem.de>](mailto:smf@aem.de), or contact him by phone (0711-83965-0) or fax (0711-8380545).

[Ed (MLP): I attended this conference last year. It began after several German development workers attended our conference in Florida. It was great to meet with and learn from our European colleagues.]

First World Congress of Agroforestry: Working Together for Sustainable Land-Use Systems

June 27 to July 2, 2004
Orlando, Florida, USA

The congress aims to provide a global forum for agroforestry professionals to share knowledge, experiences, and ideas, and to plan future strategies in agroforestry research, education and training, and development. Anyone involved in agroforestry is encouraged to attend.

The congress will focus on five major topics: Improvement of Rural

Livelihoods; Enhancement of the Environment and Landscape; Agroforestry Science and Education; Policy, Social, and Institutional Issues; and Agroforestry: The Next 25 Years.

Unfortunately, the deadline for submission of abstracts has already passed, as has the deadline for applications for financial aid. Registration fee is US\$500.00 before March 31, 2004 (US\$250 for students). After March 31, registration is US\$550.00 (US\$275.00 for students).

Registration can be done online using a credit card, or forms can be printed from the web site and returned by fax or mail with payment. If you have questions regarding the technical program of the conference, please contact Dr. P. K. Nair, Director of the Center for Subtropical Agroforestry; SFRC, University of Florida/IFAS; PO Box 110410 Gainesville, FL 32611-0410, USA; Tel: 1-352-846-0880; FAX: 1-352-846-1277; E-mail: pknair@ufl.edu. Details about the conference can also be found on the conference web site at <http://conference.ifas.ufl.edu/wca/index.html>. Someone from ECHO will be there, so if you attend, look for the ECHO delegate and say hello!

THIS ISSUE is copyrighted 2004. Subscriptions are \$10 per year (\$5 for students). Persons working with small-scale farmers or urban gardeners in the third world should request an application for a free subscription. Issues #1-51 (revised) are available in book form as *Amaranth to Zai Holes: Ideas for Growing Food under Difficult Conditions*. Cost is US\$29.95 plus postage in North America. There is a discount for missionaries and development workers in developing countries (in North America, US\$25 includes airmail; elsewhere \$25 includes surface mail and \$35 includes air mail). The book and all subsequent issues are available on CD-ROM for \$19.95 (includes airmail postage). Issues 52-82 can be purchased for US\$12, plus \$3 for postage in the USA and Canada, or \$10 for airmail postage overseas. ECHO is a non-profit, Christian organization that helps you help the poor in the third world to grow food.