

# **Inside this issue:**

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- •Greg Clark on Organic Production
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- •Is Sheep Faming for You? P. Margesson
- •Alternative Energy; What about it?
- •Book review— grow native Belize
- 1850 Steam Tractor
- Commodity Prices

# John Carr speaks, and Belize Ag listens.

# Mechanized Farming compared to Sustainable Agriculture

Mechanized Farming compared to Sustainable Agriculture requires different inputs and training.

**Mechanized Farming** – needs to include tractor type equipment and you must be able to dry, package, transport via containers and semi-trucks.

Sustainable Agriculture – Usually we think of mostly labour to prepare the ground, plant, fertilize, spray, harvest and delivery usually in bags.

# **Production Principles and examples** TO INCREASE SOMETHING YOU SUBSIDIZE IT.

In agriculture, we need to occasionally have very reasonable profits to offset minimum or sometimes

total losses due to hurricanes, too wet, too dry, worms, weeds, insects or a loss of market where prices are below production costs. (Locally produced vegetables are often in this category) This results in an incentive to plant next year. We need government to help pave the way, import wise, market wise and financing.

# TO DECREASE SOMETHING YOU TAX IT.

By regulating markets, controlling prices and implementing unreasonable taxations, you hamper profits and hence production efforts and investment decreases. The result is little or no hope or incentive to plant next year.

(Continued on page 19)



# **Mission Statement;**

The Belize Ag Report is a monthly agriculture newsletter. Our purpose is to collect, edit and disseminate information useful to the Belizean producer, large or small. We invite opinions on issues, which are not necessarily our own. Belize Ag neither solicits nor accepts political ads.

KO-OX HAN-NAH

(LET'S GO EAT)

# From the Editor

Greetings,

allow us to introduce ourselves. We are The Belize Ag Report, a monthly newsletter, headquartered in the Cayo District, but covering the entire country of Belize.

How did we come into existence? As a result of an exasperating conversation asking a friend,' Where is the agriculture news?', given that it is the largest sector of the Belizean economy. Simply put, it's an astounding situation here! Even the agriculture sector itself, in a way, feel 'unnewsworthy'.

We do not claim to be the official voice of agriculture Please read our mission statement printed on front page. To the other members of the Belizean media, we say 'Please listen to agriculture.' What is more important than the food we eat? Isn't food the new 'oil' in the world economy? What good is oil or money if you don't have food?

Agriculture is about growth, the next generation, the next crop, for us, that is, for us, means the next issue - we look forward to growing and serving you. We thank all our sponsors for advertisements. We will be contacting more of you potential advertisers. If we have more supporters, then we can also have more articles. Our goal is to maintain a compatible ratio - enough ads to support the articles.

Our goal is to cover agriculture countrywide - we fell down on this a bit, we apologize to the cane farmers. HUGE THANK YOU to all our contributors. Please keep us in mind when you feel like writing again. If you enjoyed a feature, please tell us, and we will relay your thoughts.

The heart of the paper - the commodities prices - is new to us - but in the future look for weekly updates online, graphs to show history and trends, and prices from Peten, Guatemala and southern Mexico.

We invite farmers, and the public to communicate with us - note the columns with 'write in' sections - q and a for Organic Production, Vet Column, alternative energy, and 'ask Rubber Boots' - the catch all column for all q and a ... please write us with your ideas for topics you would like covered, and let us hear from you. Our format is fluid - we are all ears.

Until the next issue, keep well and enjoy the rural life.

See you at the NATS!

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# **Agriculture Prices at a Glance -\$\$\$\$**

# A & B denotes the difference between flesh, weight, age quality and yield

Cattle	А	В
Young Bulls, Steers, Heifers for slaughter	1.05 - 1.10	0.95 -1.05
Aged Cows	0.80 - 0.90	0.70 - 0.80
Old Bulls	0.95 - 1.05	0.85 - 0.95
Heifers for breeding by the head	\$1200 to	\$2500
Young grass cattle (300-550lbs)	1.20 - 1.30	1.10 - 1.20
Hogs	Α	В
Weiner Pigs, per head - 30 to 50lbs	\$75.00 to	\$90.00
Butcher Hogs, per lb 125 - 200lbs	2.15 - 2.25	2.05 - 2.15
Sheep	A	В
Young Lambs for slaughter, per lb.	2.75 - 3.50	2.25 - 2.75
Mature Sheep, per lb.	2.25 - 2.75	1.75 - 2.25
Eggs	А	В
A & B according to size- per tray of 30	\$5.75	\$5.25
Chickens	A	В
Broilers- live per lb.	\$1.35	\$1.30
Old Hens	\$0.65	\$0.60
Citrus		
Oranges - per 90 lb box (most growers say these estimated prices Grapefruit - per 90 lb. box are below the cost of production)		5.50 3.25
Grains, Beans & Rice	Α	В
Corn per lb.	.2527	.2325
Milo per lb.	.2325	.2123
RK's, Blacks & Little Reds- per 100 lbs (wholesale)	125 -150	115 - 125
Rice: Paddy per lb.	\$0	).34
Wholesale milled per lb.	\$1	22
Retail Control per lb	\$1	31
Sugar	Corozal	Orange Walk
1st Payment (Cane)	\$36.81	\$34.50
After 2nd Payment (Cane)	46.00 est.	46.00 est.
Processed Sugar – White (112#sack)	.45 controled	.50 retail
Processed Sugar - Brown (112#sack)	.39 controled	.45 retail
Bananas		
Export Price - per 40 lb Box		2 U.S.
Wholesale - per 40 lb Box	\$6.00 E	
Retail - per 10		.00 BZ
Fruit & Vegetables	Wholesale	Retail
Tomatoes	.50 – 75	1.00 – 1.50
Cabbage	.3060	.75 - 1.25
Cucumber	.3050	.75 - 1.25
Peppers	1.25 -2.00	2.50 - 3.50
Carrots	.75 - 1.00	1.25 - 1.50

The supplies vary according to the time of the year, weather and imports. Also the wholesale to retail price markups vary as well.

These prices and terms are best estimates from our best sources and simply provide a range to assist buyers and sellers in negotiations.

# **Organic Production**

# Visiting the Bank

When farmers are presented the question of what crop they grow, the typical answer is "Corn, Beans, Rice, etc." When an Organic Farmer is asked the same question, their answer is always "The Soil." For the Organic Farmer, the soil is the primary product for their farm, it is their farm. The growing of the soil is really a simple process, and we want to explain the process with the comparison of a bank. Banks provide two types of savings yields, a short term return on money that is deposited and a long term return. The short term can be withdrawn at anytime, which provides a lower return to the depositor. To obtain the higher rate, long term return, the depositor is required to commit their deposit to a certain time period. This procedure is identical in the farming process. Using conventional methods, the crop is chosen to be grown and then the fertilizer, insecticides and fungicides are added to produce that specific crop for that specific time. This process restarts again at harvest time for the next crop. In this process, the soil is mainly used as a pillar to support the plant while growing. All requirements for promoting the growth is provided externally of the soil. Using the organic methods, the crop is chosen due to what is currently available for the soil to yield. The soil contains the majority of the components to provide the prolific growth of the plant.

To grow soil, the process is quite simple. There are 3 major items that are required to promote the growth of soil; Compost, Rotation and Microbes. Compost is a process that returns the nutrients back to the soil that was borrowed by the plant in the previous growing cycle. The majority of the nutrients borrowed are still maintained in the green material after the crop harvest. Compost will allow the nutrients to break down and return to revitalize the soil. Rotation is the process of maintaining the nitrogen cycle. Selection of proper plants during crop rotation provides an adequate nitrogen level for growth of crops. Maintaining legumes in the rotation will allow for these small nitrogen pumps to pull nitrogen from the atmosphere and place it in the soil for use by the following crop. Plants in the legume family are peanuts, and various beans. Following the legume crop, the crop will have excess nitrogen for use in growth.

Microbes are soil borne organisms that will convert mineral nutrients into organic materials that the crop will be able to utilize directly. Microbe health is one of the most important aspects of the health of the soils, and further health of the plant that is grown in the soil.

In following articles, we will break down the entire process

of soil development and the process to achieve the growing of soil in detail.

In a closing note, the most fertile soil in the world today, termed Terra Preta, was created over 2000 years ago by farmers who grew soil as their crop, and harvested the byproducts to feed a nation. For further information see:

http://en.wikipedia.org/wiki/Terra\_preta

If you have any questions you would like to have answered concerning Organic Farming methods, please email me at the link below.

Greg Clark
Organic@belizeagreport.com

#### **VET COLUMN**

# **Equine Grass Sickness**

While trying to diagnose what suddenly and eventually claimed the life of one of our best brood mares,( daughter of the well know ranch & race horse, Popcorn (Palomino). Our vet friend, Dr Amanda House, Gainesville, Fl. Sent us the following information on a newly recognized equine disease .

The Belize AG Report enquires if any horse owners have seen any cases which resemble Equine Grass Sickness.

# Beth Roberson, Cedar Bluff Ranch

# **Clinical signs**

Grass sickness is a <u>polyneuropathy</u> affecting the central, peripheral and enteric <u>nervous systems</u>. The majority of visible clinical signs are related to paralysis within the digestive tract although nerve damage occurs throughout the body. There are three forms of grass sickness:

- acute grass sickness (AGS) horses display signs of colic and require euthanasia or die within 48 hours
- subacute grass sickness (SAGS) horses display clinical signs similar to AGS but with less severity and may survive up to 7 days chronic grass sickness (CGS) horses present with severe and rapid weight loss and a selected portion of these cases may survive.

Clinical signs common to all subsets include: depression, anorexia, colic (moderate with AGS/SAGS and mild with CGS), excess salivation, constipation, nasogastric fluid secretion, patchy sweating, muscle tremors and eyelid drooping.

Continued on page 17

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All prices by Metric Ton in Bulk. In bags, add \$20.00 per ton. Delivery \$15 to \$40 per ton Depending on location.

# **COMPARE & SAVE!**

Chemical fertilizer	Organic Fertilizer	Chicken Manure
19-9-19	6-3-6	1-0.5-1
1 Ton Chemical Fertilizer	3.16 Ton	19 Ton N.P.K
N.P.K	Organic fertilizer N.P.K	Chicken Manure

General recommended application N.P.K

120lbs Nitrogen Chemical

60 Nitrogen organic or Manure

50lbs Phosphorus chemical or organic

120lbs Potassium

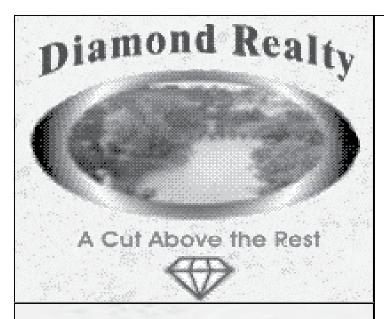
# Thus total then to =

6.3 bags chemical fertilizer	19-9 bags organic 6-3-6	114 bags chicken manure
19-9-19 per acre	Fertilizer per acre	Per acre

# Cost per acre

Chemical fertilizers	Organic fertilizers	Chicken manure
\$510.30	\$200.00	\$684

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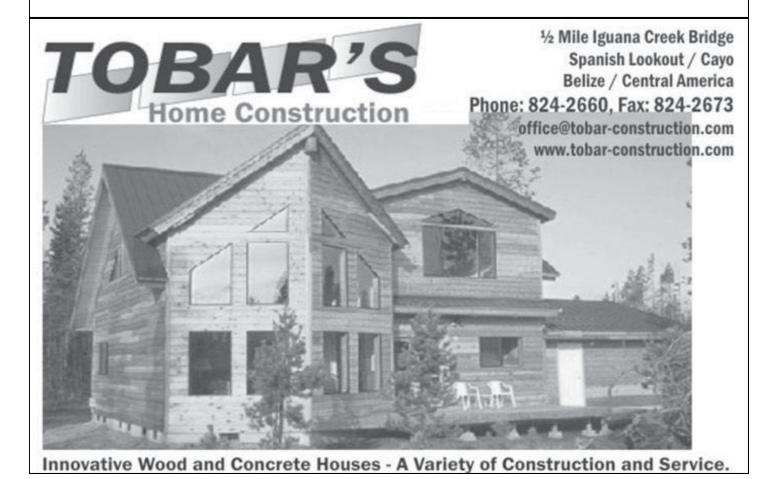
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# Santa Elana 24 Hrs.



# <u>Hard Times for Citrus Growers...</u>...but there is a silver lining!

The world economic crisis is having a severe effect on citrus prices. World stocks of orange juice are at an all time high, and prices are unbelievably low. This year for example, Belizean citrus growers will receive \$5.50 a box for oranges and \$3.25 for grapefruit. It costs about \$7 to grow and deliver a box of oranges and \$5.50 for grapefruit.

No one can predict the turnaround in the world markets and it could get even worse. After two profitable years, in 2006 and 2007, the Citrus Industry decided to invest in a "value added juice line", in order to be able to produce and sell directly to the consumer, what the consumer wanted....a shelf stable citrus juice in a package that does not require refrigeration. For too many years, Belize has been producing and selling a commodity which had to be sold to juice processors who packaged the juice and sold it to consumers.

The most successful soft drink company in the world, Coco Cola, produces and sells soft drinks which can be distributed and stored without refrigeration. The fresh juices and not from concentrated juices that our Industry presently produce require refrigeration, so that retailers can only buy what they can store in their refrigerator. Even the commodity concentrated juice has to be shipped and stored frozen. Far better to have a product that can be stored and distributed under normal conditions.

This year will mark the start-up of the "Tetra-pack" line at the factory in Pomona. It should start to produce significant results and better prices for growers next year. It is an investment of \$10 million at a time when many question the viability of the Industry. This is an Industry which has continually been Belize's leading agricultural earner of foreign exchange and directly affects over 5,000 Belizeans.

This year will be a very bad year with lots of belt tightening, brought about by world market conditions over which we have no control. The Tetra pack line will enable growers to share in all the profits in selling the juice to the consumer, and most importantly, the Industry will be producing the juice in a package which will be consumer friendly and much easier to distribute and store.

How can one be so confidant that this venture will be profitable and give growers a profitable price for their fruit? The answer lies in what has traditionally be the core reason why juice producers have been willing to buy Belizean concentrated juices......because of our high quality, they buy our juice to blend upwards their lower quality products.

Belize has the quality product. Soon, with the right packaging and distribution, our citrus farmers will be able to receive a profitable return on their citrus investments.

By Frank Redmond—Chairman of the Citrus Growers Assoc.

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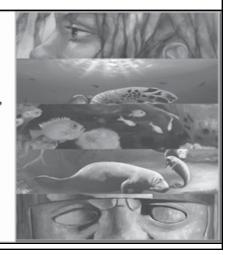
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# Introduction to history and structure of **Spanish Lookout**

When we came to Belize, then British Honduras in 1958 we did not ask for land grants or tax exemptions but agreed to pay all duties and taxes. We asked for the freedom to educate our children in our own schools, exemption from military service and compulsory social programs.

There is a big falsehood about tax payments. Many government officials and others believe or used to believe that Mennonites don't pay taxes. This is not true. We have had no income tax exemption or any other exemptions except for immigration head tax as offered by the government.

Primarily the elders of the church and community leaders started the community. Each church district has its own elders, which have general meetings to obtain unified management of the mainline church affiliation. We used to elect trusties for the mundane administration at a brotherhood meeting. Now there are so many different church affiliations that we elect the trustees at a general meeting for the sake of democracy. We elect a three-member executive committee for the oversight of all committees and representation before the government. Each village or school district elects a member for the school, road, and land committee. Each village elects a chairman.

Overseers are elected for community-wide committees. We have various committees which are elected for general community projects. The last Saturday of each month there is a general committee meeting, where all aspects of the management are planned. The chairman of the executive committee chairs the meeting.

Financial needs are met by a membership and income fee. 2% is charged on all crops, 1% on livestock sales, and 0.25 % percent on all business sales. You have to pay a road-use fee for every tractor and vehicle as well as an acreage fee and a heavy fee for pavement road frontage.

There are four revolving plan CO-Ops in the community, Farmers Trading Center Western Dairies, Quality Poultry Products and Farmers Light Plant. Dividends are paid out to community members five to eight years later for the amount of business you have done this year.

Today I will again quote the prophet Jeremiah when he advised the children of Israel on their conduct in the captivity of Babylon. (We will call ours the liberty of Belize) "Build houses, plant trees, let your children marry, and increase. Work for the well of the country. If it goes well for the country, it will go well for you." Today we can honestly say it has gone well for the country and us.

Menno Loewen Spanish Lookout



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# **Ask Rubber Boots**

# Hi there, Rubber Boots,

**Question:** 

What kind of flour is best for bread? Why does bread sometimes come out with a "heavy" texture?

Answer:

High gluten flour is best for bread. High gluten flour, which is high in protein, at least 15% per cent, is milled from hard spring wheat. Robin Hood flour and Hi-Rise Whole Wheat flour are two brands that are high in protein.

If flour is left too long in a humid climate, sometimes even in a sealed container, such as Tupperware, it absorbs moisture and makes bread come out with a "heavy" texture. Buy flour in smaller quantities or use it while it's fresh (before it absorbs too much moisture) to ensure a light texture.

### Dear AG Reader,

Anybody have a good way to get those annoying geckos out of your house, that is without lots of poison? Send them in and we'll print the best solutions.

Yours Gratefully Rubber boots

# **Dear Creative Cooks,**

Belize AG would like to hear what novel uses our readers have found for Cassava flour, Breadfruit flour and Ramon nut flour. Please submit your ideas and recipes, with your name and address. Belize Ag will print the most interesting, along with sender's name and address, unless requested not to.

Thanks!

R.B.

If you have any questions or tips for Rubber Boots, please send them to;

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## Ken duPlooy, The Man Behind the Green Screen

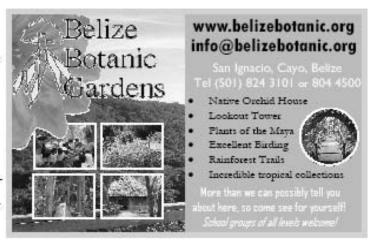
Just 15 years ago what is now the 45-acre Belize Botanic Gardens was nothing but acres of cleared dirt that had just been plowed for planting. Ken duPlooy who lived next door to the property saw the potential for something greater and purchased the farm and began planting... and planting... and planting.

Today it is still a marvel to contemplate the thousands of plants that he acquired for the garden. Specimens were traded with other gardeners and collected from the wild in Belize, purchased from as far a field as Australia, donated from nurserymen, botanic garden employees or fellow fanatics. No friend or family member ever went on a journey without a request for a cutting or seed to be brought back to Belize. Everything went into the ground and the garden filled out quickly.

The very year that Ken began work on his dream project he was diagnosed with congestive heart failure and given 6 months to live. Incredibly, 7 years later, up until the final week of his life in August of 2001, Ken was actively involved in the day to day running and future planning for the garden. Every evening he would make his rounds of the garden, with a special stop at his bird hide on the pond where he would check on the goings on of the birds that would visit and nest there.

The thrill of watching ducks on a pond was certainly a simple final pleasure for a man known for the wild tales he told of his younger self. Born in South Africa and raised in Zimbabwe, Ken always sought adventure. From a young age he began exploring and hunting in the African bush. His activities included catching snakes for a researcher on his way to class and brewing pineapple beer at boarding school. Moving from the bush to the sea he became a skilled spear fisherman and sailor. After seeing him win a skin diving contest at age 17, a commercial dive company convinced him to join them. He learned to dive and worked on welding massive underwater pipelines and the construction of the Kariba Dam in Zimbabwe. As this was the early days of diving the work was intense and dangerous, so after getting his fill he took to sailing and during this time crossed the seven seas and involved himself in many escapades. He was even once arrested off the coast of Brazil as his boat was in such bad shape government officials decided that anyone sailing it had to be crazy or criminal.

He last sailing adventure landed him in Nantucket, Massachusetts from where he made his way to the snow covered slopes of Aspen, Colorado. It was there that he met Judy Rowe, a lovely lady who became Judy duPlooy just 6 weeks later. Between moves to South Africa, Guatemala and the USA, the two managed to raise a family of 5 girls. In 1988 Ken and Judy packed up the children aged 4-16 for their final move to Belize. Here they started duPlooy's Jungle Lodge in Cayo and



it was then that Ken got interested in tropical plants. Interest grew to passion and the passion grew into Belize Botanic Gardens.

Though there have been a few new turns, 8 years after his death the garden is still on the path cut by Ken. It is amazing to think that when the ideas were developing the trees were only small saplings. All the original plans for programmes for education, conservation and research are still valid and being worked towards in one form or another. Classes of school children from Corozal to Punta Gorda have visited the garden and Ken would have been thrilled to know that his vision was realized.

When you take a walk in the garden that Ken worked tirelessly to create, it is an opportunity to reflect on the power of plants. On our reliance on the services they provide and also on the wonder that their beauty instills. The enjoyment of their beauty and diversity is a call to contemplate our relationship with plants and our environment and think a little harder on the decisions we make that affect them.

# What is a botanic garden?

A botanic garden is more than just a collection of plants. Botanic gardens are beautiful places to visit and spend the day, but there is a lot more that goes on. The collections are venues for research, education and conservation. Record keeping is the most important aspect of botanic gardens and all plants are numbered and recorded. This gives the wild collected species great genetic value because of the information stored about them and where they are from. Botanic gardens are valuable resources for a country.

Botanic gardens such as Belize Botanic Gardens are linked up with other botanic garden organizations so that their work can be more effective. Our botanic gardens is a member of the Botanic Gardens for Conservation International as well as the regional Caribbean Botanic Gardens for Conservation.

But botanic gardens aren't just for scientists. The Belize Botanic Gardens in the Cayo district is an excellent destination for individuals, couples, families, birders, plant enthusiasts, gardeners and folks from all walks of life to enjoy the day.



# The Ag Calendar

# **Belize**

NATS April 30— May 3 Belmopan www.agriculture.gov.bz click on the NATS webpage.

# Regional

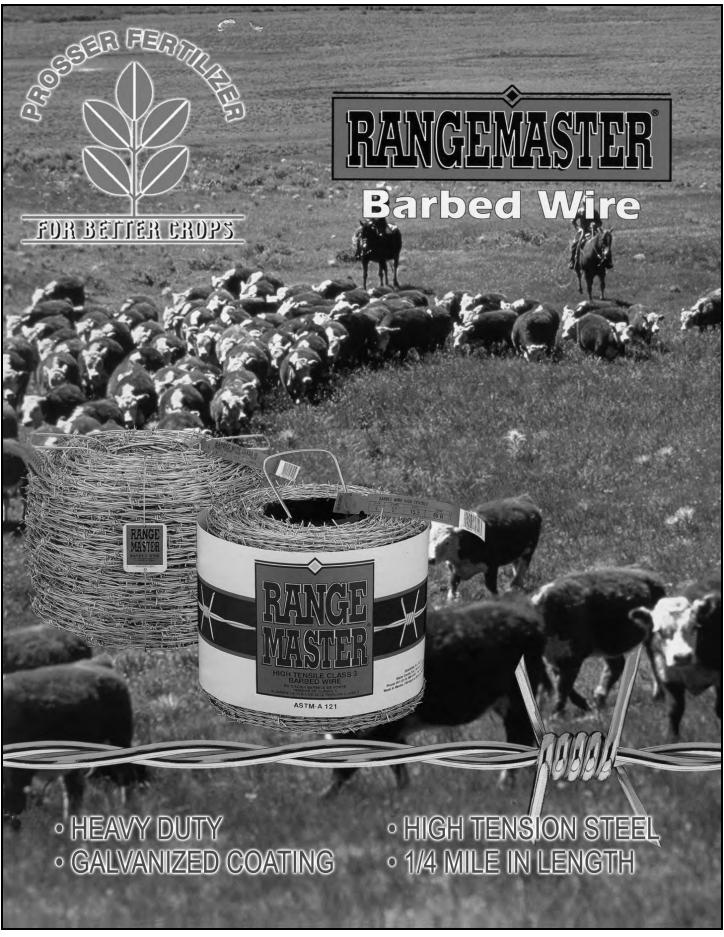
Expo Fair Late July Managua Nicaragua

Fiesta Santa Domingo (Horses) Aug 1—10 Managua Nicaragua

X'macuil (Yucatan State Fair) Mid Nov. Merida Yucatan Mexico

Tizimin Livestock Show - Early Jan 2010 Tizimin Yucatan Mexico

If you have an event you would like added to our calendar, send it to; editor@belizeagreport.com



# Is Sheep Faming for You?

In recent years the price of sheep has skyrocketed. Some farmers think this may be the answer to improved profits in farming. Many whom attempt raising sheep are disappointed in the results.

Sheep farming requires much higher levels of management than does beef cattle. Those wishing to incorporate sheep into their operations need to carefully consider the pitfalls. This article will attempt to give brief, basic guidelines to those who may be considering raising sheep.

Fencing and sheep security is critical. Regular cattle fencing will not be sufficient, unless you do not have a problem with the sheep moving where their will takes them. Sheep can squeeze through spaces in regular barbed wire fences where you might think it is not possible for them to go through. The most economical choice is to use a four strand electric fence.

If you are inexperience in the use of electric fences, ask for advice. If the system you use not powerful enough or incorrectly installed, you will waste your money.

If electric fencing is not possible then the use of permanent type fence with small spaces such as square fenc-

Not only will your choice of fencing need to keep the sheep contained, it will also keep predators out. Predators are a major problem. Correct fencing of pastures will need to keep animals such as marauding dogs out. If other predators such as humans (thieves) or the large cats are a problem, then special consideration will have to be made. This may involve bringing the sheep into a more secure area at night to a holding facility such as a shed or suitable corral. This will be expensive oth types of livestock in a grazing operation

ing or chicken fencing can be an alternative choice al-

though it will be more costly.

If theft, or wild animals are a major problem, think carefully, sheep are probably not suitable for you. Dogs and similar pests can be controlled.

Sheep consume different foods to cattle and having both types of livestock in a grazing operation is preferable. Greater productivity can be obtained. Sheep consume a higher ration of broadleaf plants than grasses in their diet. Typically sheep consume 60% broadleaf plants to 40% grasses. Whereas with cattle the ratio of grass consumed is much higher. This is an important

consideration when using natural range land as your feed source. Quality improved pastures in the country do not traditionally offer much in the way of broad leaf component and are mostly grass. Sheep will do well grazing mostly grasses but for adequate levels of performance, grass management will need to be good. On the other hand sheep will not do well under conditions where there is no grass.

Sheep need to be kept healthy so as to make a profit. A common complaint from inexperienced (and sometimes experienced) sheep farmers is "My sheep keep dying, what's happening?" Usually the answer is that your sheep are sick. Sheep can be very prone to illnesses and disease. Higher levels of management are needed to keep losses in check.

Sheep need to be medicated on a regular basis for parasites. Consulting an animal health specialist is very important in setting up a control program for both internal and external parasites. Failure to maintain your flock's health will result in unacceptable losses. Sheep are not as easy going as cattle. Other health problems often seen in sheep in Belize include problems with the mouth and feet( orf, foot rot etc.) Each of these can lead to deaths if not taken care of.

Sheep do not need any special facilities for lambing. They can lamb successfully in the pasture. However attention must be paid to the care of the lamb and its mother. Sheep tend to have more multiple births than cattle and as a consequence they have increased nutritional needs. Unless your pastures are of a very good quality, many ewes need additional feed. This helps ensure a good milk supply for the young. Supplementary feeding of the lambs after about three weeks of age will reduce lamb mortality and result in a healthier, faster growing animal.

Lambs are more susceptible to illnesses and disease than adult sheep and no matter how well fed, losses can and will occur. Lamb mortality is usually the difference between profit and loss in sheep farming and is the reason why many farmers quit.

There is a good reason why lamb meat commands such a good price. It is delicious and demand far outstrips supply. Sheep farming is not easy. Consider your management capabilities, your financial resources and your location before taking the plunge.

**Peter Margesson** 

# A review of Grow Native Belize

A gardener's guide to using native plants, a Belize Botanic Garden booklet by Katie Ghantous

Today's gardener has a continually growing selection of ornamental plants available them in Belize. When choosing plants, we are drawn to them for their beauty – bright flowers, showy leaves, unusual characteristics. This guide prompts the gardener to look beyond the skin deep beauty of our landscape plants, and to reflect on other aspects and impacts of plant selections.

The emphasis of this booklet is that native plants should be considered as a primary choice in gardens for a variety of reasons. The guide discusses the benefits of native plants, such as being well adapted to the growing conditions here in Belize. The local plants have evolved over thousands of years to be survivors in this specific climate meaning they typically have better water use efficiency, and resistance to local pests than introduced plants. Natives also have relationships with other living things such as birds, butterflies, and other wildlife that can enhance the beauty of your garden as well. The guide provides a list of native plants commonly cultivated with scientific and common names, information on growing conditions, basic plant information, and tips on composting and organic pest control.

In addition to information on some popular native plants, the guide also discusses the danger of certain introduced plants to become invasive. This means some non-native plants have the potential to escape gardens and compete with native plants in the wild. This can have devastating effects, even local extinction of native species. Included is a list of plants to avoid.

This guide is by no means a comprehensive list or resource for all native plants. It is however, a good basic introduction to gardening with native plants, and makes a solid argument for their integration into gardens by raising awareness of the effects gardeners can have on the environment beyond their own yards.

Buy at; the Belize Botanical Gardens store, West St. San Ignacio. Call them at 804 4500



# THE ADVENTURE OF CHESS.

During the past two years the Belize National Youth Chess Foundation has developed a nation wide primary youth chess program, teaching chess as a "Motivational and Educational Tool" to primary children throughout the Nation.

At this time, over 400 children are now playing members of over 50 chess teams throughout the country and 120 volunteers have been trained as entry level chess coaches.

Although all children are encouraged to join chess clubs sponsored by BNYCF, the Foundations goal is working with disenfranchised and at-risk youths from throughout the six districts of Belize.

Chess is far more than just a game. If taught correctly, as an educational and motivational tool, chess will benefit a child in more ways than can possibly be imagined.

Developing the "Chess In Belize" national program teaches the children: Discipline, Critical thinking, Logical thinking, Memory development, Ability to analyze actions and consequences, Pattern recognition, Creativity, Problem solving, Planning ahead, the ability to setting up short and long terms goals, sportsmanship and Intellectual and emotional maturity and development of Cognitive skills. All skills that will enhance a child's future ability to be successful throughout their lives.

The Belize National Youth Chess Foundation is now close to ending its full second year of promoting chess throughout Belize and is holding its second annual "Belize Chess Olympiad, 2009" on Saturday, April 25th, starting at 8:00 am at the Belmopan UB Gymnasium. We invite donations to support the efforts of the BNYCF in the organizing of the "Chess Olympiad 2009" and to have all interested in supporting the BNYCF to attend the Olympiad on the 25th.

For more information, please write to: BNYCF, belizechess@cavesbranch.com . To see the current events information and pictures from the previous events, please visit our website at www.belizechess.org and we hope that you will get involved and join us in this great adventure of chess.

# Now and Then 1850 Ransomes Simms & Jefferies Steam Tractor



John Roberson & the 1850 Ransomes Tractor

The manufacturer of the tractor in this picture has been in dispute since it was rediscovered some years back. I contend that it was built by Ransomes, Simms &Jefferies and not Fowler as is the more common belief. Mick Bell has told Francis Woods, who is now in possession of the machine, that it is a Fowler. I certainly respect his well earned opinion. I remember around 1984 one of the men telling Barry Bowen and myself about two old tractors out in the bush. We decided to take a walk to see if we could find them. We did locate them but not even close to where the man had sent us! Seems as though we walked for hours, but that is the way of bush directions. We climbed all over them looking for clues of their origin. Barry removed a brass plate from one of the machines that had the name Ransomes, Simms & Jefferies on it. There were two tractors and they may have been different manufacturers but one of them had that plate. I do not know which of them is now on display at Old Belize. It would seem to me that Belize Estates would have purchased identical tractors for all of the obvious reasons but do not know. These tractors were designed in England for the single purpose of ploughing. One machine on each side of a field and would winch the plough between them. I am sure some innovative logger immediately saw the advantage of such a machine, fired by bush chopped on site, as a major improvement to using steers for skidding logs.

I do know that both machines had winches and more than likely were used to skid Mahogany out of the bush to a road where they could be loaded and taken to Hillbank for rafting onto Belize City. I measured the boiler tubes and using Mick Bell's ten square feet of boiler tube to one horsepower, estimated this tractor to have approx. 10 H.P. Does not seem much now but I am sure that it was very impressive in those days. I also venture to guess that the reason they were abandoned in the bush as were many other machines is that technology in newer faster machines quickly overtook them rendering them useless in maybe one year! -

John Roberson Jr.

# Alternative Electrical Power - Sources "LEYTRONICS"

by Hugh Leyton

This is just an introduction to the various Sources of Electrical Power, their advantages and disadvantages. It gives some background information for Choice Considerations which are normally very site specific.

There can be no clear Choice of best Power Sources, it depends on many local conditions, power requirements, environmental considerations and so on. As a very general guide, Power requirements from a few Watts up to 200 - 400 Watts, Solar Panels are worth serious consideration. For Power of say 300 Watts up to about 3000 Watts, or even more, Wind Turbines are worth considering. For Power way up in the 10kW to 100kW then Diesel Generation is probably the best choice.

Diesel Generators are expensive to buy and install, complex installations, requiring special out buildings and careful environmental considerations, relatively frequent, expensive maintenance procedures, noisy, smelly and requiring regular fuel deliveries. But they produce large amounts of electricity at a the most economical price, this is why they are the best choice for large power requirements, or perhaps as back-up when other sources can not meet the short term requirements. The other advantage of Diesel Generators is they are complete in their own right, providing continuous power at a constant steady voltage and frequency.

Solar Power, on the other hand is silent, clean and free, after the initial purchase and installation, only requiring cleaning from time to time. But the cost of panels for over several hundred Watts becomes very expensive and the space requirements gets large. The other consideration is that solar panels can not provide power when there is little or no sun light, so Batteries are also required adding to the complexity and for normal Mains power AC Voltages, Inverters are also required.

Wind Turbines provide much more power for the same physical size and initial purchase cost. They do require similar Battery storage, Regulators and Inverters to provide Mains power AC Voltages. Their operation is dependant on regular wind and are hampered by trees and other obstructions, the use of Wind turbines is very much more dependant on local conditions. One condition worth considering is that wind is often more likely when the sun is covered by cloud.

Hydro-Generation is another alternative worth considering. If good steady water is available, it can produce good economical electricity, generally without much, if any, Battery storage requirements. But these are less common and good water is often not available.

The choice is not easy and depends on many factors, very much dependant on local conditions. It is perhaps best not to put all eggs into one basket. Perhaps using some Solar power, some Wind power, backed up to cover shortfalls and or extra heavy loads by using a Diesel Generator. Building a system in a Modular form so that it can be expanded as required in ways which are proven to be most economical in the light of actual site conditions. This maintains flexibility and protects the overall system from individual failures. The other advantage of a Modular system is that it can start small and grow as site requirements increase.

#### **Nelore Cattle**

So, you assume that all the white bos indicus (humped) cattle that you see scattered around Belize are Brahman, right? Well, not quite, as there are several purebred Nelore herds in country, as well as many Nelore bulls servicing commercial herds too.

The Nelore breed originated in a region in India of the same name. The breed it is most closely related to is the Ongole of India. Brazil has become the world leader in this breed. The first Ongole arrived in 1868. The Nelore Herd Book was established in Uberaba, Brazil in 1938. Brazil unquestionably dominates worldwide. In April of every year, the cattle show in Uberaba draws cattle aficionados from all over the planet.

So what characteristics distinguish this breed? Smaller ears, relatively smaller bones (note the smaller legs), less dewlap flap, cleaner underline (less reproductive problems in pastured animals), hardy, long breeding life (normal for cows to be calving regularly past 16 years of age: yes they start breeding young, too), metabolic efficiency, small calves at birth (55 to 60 pound calves, which can shock an unsuspecting rancher - petite, but rapid gainers. One of larger breeders here states he has not pulled a single Nelore calf in 17 years with the breed), and meat which is leaner and of exceptional high quality and palatability are just some of the virtues of Nelore.

Although you can go to Brazil to see this breed at its finest, for a look closer to home, try visiting some of the large sophisticated ranches in Yucatan State - in the Tizimin area, or around Merida. Mid November of each year, the Feria X'macuil outside Merida has about 600 head of beef cattle, most of which are Nelore, horned and polled (shown separately). Up there, the slaughter houses greatly prefer Nelore, paying approx 5cents/lb more for that breed. (Higher dressing %)

At the NATS, there will be several Nelore. Herds exist in Cayo and in the Blue Creek Mennonite community up north. One of the larger commercial cattle ranches in Cayo, now has a growing crossbreeding program, utilizing Nelore and Black Angus, with satisfying results. Visit them at their stalls at the 2009 NATS. Learn why 100 million of Brazil's 160 million cattle are Nelore, and why this breed is finally catching on in Belize too.

B.Roberson, Editor of Belize Ag. Note: Roberson is wife of Nelore breeder, John C. Roberson, of Cedar Bluff Ranch. She soundly acknowledges her favorable bias toward this breed.

Continued from page 4

# **Diagnosis**

Diagnosis of grass sickness in the live animal requires a thorough clinical examination including a rectal examination. Definitive diagnosis can only be made at surgery (where biopsies of the gut are taken) or at post-mortem (where biopsies from the nerves are taken). Differential diagnoses for grass sickness are varied and include: any other cause of colic and weight loss, tying-up, laminitis, botulism, choke and dental problems.

# Treatment

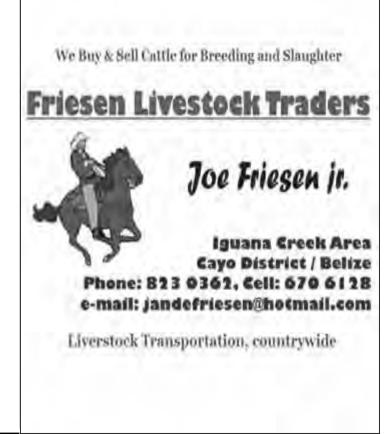
There is no treatment for grass sickness. All cases of AGS and SAGS should be <u>euthanized</u> upon diagnosis as the condition is fatal. A proportion of CGS cases can survive following periods of intensive nursing. Overall the mortality rate of equine grass sickness is considered to be over 95%.

# Cause

The cause remains unknown, however present research uggests that toxin production from the bacterium  $\underline{Clostrid-ium\ botulinum}$  type C is involved.

Clostridium botulinum is a soil-borne bacterium, which may be better known for producing clinical signs of botulism. Research has suggested that Clostridium botulinum

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# Continued from page 1

# FIVE NECESSARY CONCEPTS THAT REQUIRE CREATIVITY and the REMOVAL of NEGATIVE CONSTRAINTS

# **Marketing and Exports-**

Because of our small population it is easy to over produce and without exports the price will decrease to below production costs and an agriculture recession will result. The GOB needs to help us obtain markets in Mexico, Guatemala and the rest of Central America, the Caribbean and the USA. Often times they want to buy our products and a price is agreed upon, but we are limited because of permits, unnecessary health and environmental issues. Several years ago we were crossing corn, beans, sugar and cattle at Calla Creek to the Guatemalans (all illegal) Different exporters and importers tried to get permits in Guatemala City and were not successful. The GOB can help us meet and secure private to private buyer/seller connections. It is mandatory that we use the best production methods, grading standards and acceptable packaging to help establish long term business relationships.

# **Extension and Training -**

To develop a more professional approach to mechanical and modern farming methods. We need the Belize School of Agriculture, 4H and Central Farms to train workers for field production and not only be office workers. They need to understand tractor and machine skills, fertilizers, pesticides, herbicides, and real agronomy (what, where, when and how.) Modern agriculture requires computer skills and the ability to do maths in order to be a good farmer.

## **Genetics** -

We need to invite major seed companies to do seed production trails in order to determine yield, quality, lodging (corn falling down), resistance to disease and other factors. We need to combine private farmers, Ministry of Agriculture, Cardi, and the other like organisations to assist in these trails— We need seed plasma that is particular for Belize. Most of the major producing countries are using GMO products seed (at this point it is illegal in Belize) There must be some very significant production advantages to GMO methods or the major producing countries of the world would not be moving in that direction. We need to investigate and consider GMO as a genetic tool to reduce cost and increase production.

# GOB as an Expeditor -

The agricultural business community needs help when they import machinery, seeds, fertiliser, chemicals at boarder and custom housing. Occasionally we need to hire workers from outside of Belize and work permits are expensive, quite hard to get (it usually takes a lot of correspondence and several trips to immigration in a n attempt to hire legal workers).

GOB needs to consider ways to reduce taxes on farming and processing fuels (butane costs that same whether you are drying corn or cooking eggs— it costs from \$2.00 to \$2.50 a bag or approx 10% of the value of the corn to lower the moisture from 26% to 13% so it will store).

This tax consideration could apply to tractors, dryers, and stationary engines but not necessarily cars and trucks. We need government's assistance to help us increase production. Government might consider an agriculture hotline to assist farmers in the more desperate situations.

#### Financing and Interest-

Our competitors in other countries are borrowing money at 5% to 8% and we are at 11% to 16%. This is almost an impossible rate for agriculture financing-growth will be difficult or nil. We need to establish an Agricultural Bank for farmers only with beginning assets of 25 to 50 million. The board of directors need to consist of private farmers, experienced bankers and government representation. Rules must state that all loans must be paid back. (no grants or soft loans to end users). Loans will be broken up as short term(6 months to 2 years) - medium term(2 years to 6 years) and long term(7 years to 15 years). Interest and principle payments will have to be kept up to date. These loans must be unable be manipulated by politicians, cronyism, or corrupt accountants that may cause the bank to fail. This bank must stay on a sound financial tract. It should be required that all borrowers be 5% (based on the high end of the borrowers loan-the borrower can sell back his stock only when he guits doing business at the bank.) stock shareholders in this bank. Annual reports and board of directors elections need to be held every year. This concept comes from the US PCA's (Production Credit Association) they got their money from The Federal Intermediate Credit Bank.

# **Projected Results**

If we are able to achieve the above goals we can expect an increase in agriculture production from 5 to 10 fold over the next 10 years. This will positively affect all facets including increased revenue from taxes, increased exports and provide foreign exchange earnings as well as increased employment. The growth will come in rice, corn, beans, cattle, tilapia, tree crops and other commodities too numerous to mention. The necessary vision has already begun with production from papaya, corn, tilapia, black-eyed peas, and on and on—in other words—the train is already in motion and going down the track, it is up to us to determine the speed and how much the train will carry.

John Carr

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**Photo Competition Prizes** 

Continued from page 17

may cause grass sickness when the spores of *C. botulinum* type C are ingested and produce their toxin locally within the intestine.

#### **Risk factors**

The main risk factor for grass sickness, as the name may suggest, is grass. The disease is almost always seen in grazing animals, although there are isolated reports of the condition occurring in stabled horses. Grass sickness is most frequently seen in young horses aged between two and seven, and is particularly prevalent during April, May and June, and later in the autumn, after a spurt of grass growth. Research has identified a number of other risk factors which may increase the likelihood of a horse developing grass sickness including: soil disturbance, worming with Ivermectin based de-wormers, movement to new pasture, stress, grazing on a field which has previously produced a case of grass sickness.

#### Research

Current research in equine grass sickness includes development of a nationwide surveillance scheme for grass sickness in Great Britain. This scheme hopes to identify all cases of grass sickness which occur from 2000 onwards. This scheme is run by the Animal Health Trust, in collaboration with the Equine Grass Sickness Fund, the University of Edinburgh and the University of Liverpool, following funding from The Horse Trust. More information on this scheme can be found at the dedicated website [www.equinegrasssickness.co.uk] The Equine Grass Sickness Fund

[www.grasssickness.org.uk] are a dedicated charity raising funds to tackle the disease. Their website contains useful information regarding all aspects of grass sickness including management of chronic grass sickness cases.

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If you have an article on any subject in Agriculture or have a story to tell, please send

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