



THE AgriBulletin

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BMDC Rice Mill

In our coming issue we will be highlighting rice...and particularly, the rejuvenation of the Big Falls Rice Mill, left to decay by the previous administration. Minister Mai visited the mill on his recent Toledo tour, and recently CEO Toledo Baeza has held meetings to discuss the viability of the mill. It will soon come back on stream in full force, generating some much needed income and improving our position re food security. Minister Mai keeps shaking things up for the betterment of the country.

From the Editor:

Great thanks to Mrs. Beth Roberson, an agriculturalist and pioneer in Belize for allowing us permission to reprint from the Belize Ag Report, a long established, expertly written, Belizean agriculture journal featuring Belizean crops, success stories and general information. It has taken much work on her part but she still keeps at it after almost 40 years of turning the wheels. She is based in Cayo but writes about agriculture all over Belize.

We re-printed an article about coconuts in this issue from her 2017 Belize Ag Report, but we look forward to more fruitful collaboration in the future.



Women in Agriculture

The Ministry of Agriculture, Food Security and Enterprise, in solidarity with the rest of the world, hosted on March 9th, 2021, a livestream panel discussion on the theme **Women in Agriculture: Overcoming Our Challenges, Inspiring Change** with the aims of providing a platform for women to share the experiences, challenges, and opportunities related to the leadership roles in their respective organizations. The panel discussion, organized by Ms. Fay Garnett, Cayo District Agriculture Coordinator, featured four distinguished women panelists from varying fields in agriculture: Mrs. Zoe Roberson Zetina, lecturer and Campus Director, Central Farm Campus, and Chair of the Department of Agriculture, UB; Ms. Omaira Avila Rostant, Caribbean Agricultural Research Development Institute representative in Belize; Mrs. Miriam Ochaeta Serrut, Registrar at the Pesticides Control Board, and Mrs. Delilah Cab Ayala, Sanitary and Phyto-Sanitary Coordinator with the Belize Agricultural Health Authority. Ms. Ina Sanchez, Research Coordinator at Central Farm with the Ministry, served as panel moderator.

The event was attended by Minister Jose Abelardo Mai and CEO Servulo Baeza and livestreamed on the Ministry of Agriculture, Food Security and Enterprise Facebook page.

Minister Mai in his remarks highlighted the contribution of women in agriculture, pointing out that there are upwards of 60 women working in agriculture at the Ministry in various capacities, and that there is an upswing in the roles women play at the Ministry. He congratulated the women on the panel and in the wider field of agriculture and encouraged them to continue challenging the existing system because that is what keeps the country moving forward. He said women not only deal with the pressures of schooling and home making, but also go to work and contribute significantly to the development of the country, especially in the times we presently live in, and reiterated the Ministry's intention of promoting advocacy for women and youth through inclusive contributions by all stakeholders.

The Ministry's broader objective is to promote advocacy for equal rights of women and youths in the agriculture sector through inclusive contributions by all stakeholders and, furthermore, to identify and incorporate tangible actions into the ministry's workplans and agenda for 2021 and beyond.

The panel discussion concluded with Minister Mai issuing virtual certificates to the participants.

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Noticortos Agrícolas

To Tilapia or not?

Many people in lesser developed countries (LDCs) are encouraged to vary their diet, make extra income and diversify their farming by farming Tilapia. Healthline.com tells us:

“The name *tilapia* actually refers to several species of mostly freshwater fish that belong to the cichlid family. Although wild tilapia are native to Africa, the fish has been introduced throughout the world and is now farmed in over 135 countries.

It is farmed all over the globe because it doesn't mind being crowded, has quick growth turnaround and consumes a cheap vegetarian diet. This translates to a relatively inexpensive product compared to other types of seafood or fish source.

The benefits and dangers of tilapia depend largely on differences in farming practices, which vary by location.

China is by far the world's largest producer of tilapia. They produce over 1.6 million metric tons annually and provide the majority of the United States' tilapia imports.”

Tilapia in Belize by Miguel Sosa

The Department of Agriculture operates the Tilapia Hatchery Centre at a riverside location inside the Central Farm Research, Development and Innovation Center. The THC is the main office for the Aquaculture Unit, which is tasked with several duties. These are the production of quality gray tilapia fingerlings to small and medium scale fish farmers, extension services to fish and shrimp farmers and the promotion/marketing of tilapia as a healthy source of protein for Belizean tables. The unit carries out these tasks with the aim of promoting aquaculture, especially fish farming, as a way of diversifying the agriculture industry in Belize.

The Aquaculture Unit has the ability to produce 15,000 - 20,000 tilapia fingerlings at the THC for at least 9 out of the 12 months of the year. The unit has a staff of 4 persons focused on fingerling production. Most farmers purchase tilapia fingerlings for home consumption, while some also sell on a small scale to their neighbors. Farmers purchase from 100 fingerlings to as many as 2-3,000 fingerlings. Those with the intention of selling whole gutted tilapia to nearby villages will purchase from 3,000-10,000 fingerlings. The fingerlings are grown-out mostly in excavated, rectangular ponds. The estimated time for grow-out is 6 months with a growth rate from 2-gram fingerlings to $\frac{3}{4}$ - 1 lb. fish in 6 months. This is normal if they are fed properly and have good water quality.

In 2021, the unit has had the new responsibility of supplying two shrimp farms with large orders of tilapia fingerling in the first quarter of the year. This has been a challenge which the unit has so far been able to meet. These 2 shrimp farms have different purposes for the tilapia they intend to grow and different farm conditions as well. However, they both will be achieving the use of shrimp ponds at times when those ponds are not planned for use in shrimp farming. This strategy increases farm efficiency.

Tilapia is being grown in places such as Selena (Cayo,) Aguacate (Toledo,) Libertad (Corozal,) and Hattieville (Belize.) The aquaculture unit provides extension services to potential fish farmers and active fish farmers. These services can be described as assistance in technical guidance with regards to the site selection, the pond design, and the feeding and water quality aspects during grow-out. The unit has 2 technicians and a coordinator to carry out these activities; though the personnel are sometimes challenged due to their low numbers, the Ministry of Agriculture, Food Security and Enterprise hopes to keep assisting farmers or producers interested in the farming of tilapia.



Bags containing tilapia fingerlings ready for farmer handing over.



Tilapia fingerlings being stocked at Quality Shrimp Farm Ltd.

Did you know?

Much has been written about coconuts, from myths about their contribution to sexual prowess, to documented evidence of coconuts used intravenously for hydration in emergency situations. The proven health benefits of coconut water include:

- Lowered blood pressure
- Weight loss
- Increased athletic performance
- Boosted energy
- Lowered cholesterol
- Reduced cellulite
- Relax muscle tension

Numerous articles exist on the Internet and from written sources to back up these claims...just imagine the tree you have languishing in your backyard has ALL these health benefits...no wonder the early Sanskrit called it "the fruit that contains all that is essential to life"!

Some 5,600 acres of coconut have been planted throughout the country, with the Cayo, Orange Walk, and Stann Creek districts having the largest concentration of plantations. Exports of coconut oil bring in \$5 million, with coconut water close behind with \$4 million, milk powder bringing in \$3 million, and other by-products \$1 million. 500 people derive an income from coconut production, harvesting or related activities, while 850,000 nuts a year are being exported. No wonder Sir Isaiah Morter became a millionaire planting them!

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Planting Coconuts in Belize by George Emmanuel & Omaira Avila Rostant

(Reprinted with permission from *Belize Ag Report*, Issue 38, Nov 1, 2017)

Coconut (*Cocos nucifera*) is a palm that flourishes in tropical and subtropical areas, the fruit of which has many uses; it has been a major ingredient in the diets of many people living on tropical islands, creating a very lucrative industry worldwide.

In recent years, the demand for coconut product has increased exponentially. It was reported that from 2008 to 2014 alone the demand for coconut products increased 700%, especially for water, milk, oil, fibres, and cosmetics. Such hasty growth has increased the demand for establishing plantations that can supply the high worldwide demand for coconuts. In Belize this opportunity has encouraged the establishment of acres of coconuts in new plantations. Here are some factors to be considered and recommendations for establishing a coconut plantation:

- **Coconut is a long term crop.** A coconut plant takes 2 to 5 years to enter in production, and can be in production from 35 to 50 years, depending on the variety planted. Therefore, it is important to plant at an adequate distance apart so plants can grow healthy and not compete for light and nutrients. Recommended spacing and patterns are shown to the right.

- **Coconut variety vs hybrids.** In Belize the more popular varieties are Malayan Dwarf and local tall, while the hybrids are Maypan and Chactemal. In general the Malayan Dwarf is recommended for the production of coconut water, while local tall is excellent for oil production. The hybrids are the recommended crosses of tall and dwarf varieties to make the plant tolerant to lethal yellowing disease that devastated the coconut industry in the 1980's in Belize. They also are good producers of water and oil. The Ministry of Agriculture and CARDI are working to characterize those varieties of interest in the local industry.

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- **Best climatic conditions to grow coconuts:** The coconut palm supports temperature ranges from 27° Celsius to 36° Celsius and needs sunlight but also needs a day and night temperature variation at 5° Celsius. The trees grow well under the conditions of rainfall level from 1000 mm to 3000 mm, 2000 ft. height from mean sea level, and 70% air moisture. They also require a good draining facility, sandy soil rich in humus content, in a depth of 3 meters and a soil pH from 6 to 7.

- **Best time to transplant a coconut to the field:** For most varieties after approximately 9 months in the nursery bed, coconut seedlings are ready for planting out in the field. This transplanting should generally coincide with the onset of rains. Proper selection of seedlings in the main nursery alone can ensure a 10% improvement in yield. Seedlings should be removed with a spade and the roots carefully cut. They should not be lifted by pulling the leaves or stem. They should be kept out of the sun and planted as early as possible after removal.

COOPS COUNTRYWIDE ACTIVITIES

BAHA Thrips Update

The Belize Agricultural Health Authority hereby informs the public, especially grain producers of the detection of the Asian Bean Thrip, *Megalurothrips usitatus*. This is the first report of this pest in Belize; only Florida in the United States has officially reported the pest in the Americas.

This is an important pest of beans and other legumes causing significant crop damage, ranging from moderate to severe as has been observed in field surveys in Belize. If the pest is not adequately managed damages can reach up to 100%, as has been reported in some cases. The Asian Bean Thrip is a tiny, elongated yellow and dark insect measuring two millimeters and found mainly in flowers, buds and leaves and causes stunted growth and deformation of the flowers and growing tips. The main hosts include: red kidney beans and black eye peas but is also known to affect other hosts including soybean, pigeon pea, lima bean, peanuts other legumes and even potatoes.

A delimiting survey has been carried out so far by BAHA, the Ministry of Agriculture and CARDI, which has detected the pest in all bean producing areas of Belize. The survey will determine distribution, population densities and assess damages caused by this pest. All producers of legumes, peanuts and potatoes are advised to contact BAHA or the Ministry of Agriculture if you suspect that this pest is affecting your crop.

BELMOPAN HQ

- Furthered work on accounting and record keeping system
- Revised draft by-laws and policy documents of Toledo coconut farmers group
- Participated in Belize Bureau of Standards National Quality Policy for Belize workshop
- Participated in Project Steering Committee Meeting for the CDF Honey Production Redevelopment Project

COROZAL

- Conducted training for Concepcion farmers group on conflict management
- Attended meeting with Corozal United Sheep Producers Cooperative (committee)
- Attended Meeting with Northern beekeepers Cooperative (Committee)

ORANGE WALK

- Meeting with New River Farmers Co-op (San Carlos) – membership meeting
- Meeting with Trial Farm farmers group – the group have now adopted the name 'Productores Agricola del Norte Group'
- Meeting with Indian Church farmers group
- Participated in AMEXCID virtual beekeeping training



Corozal Coops Officers in action



Belize Coops Officers at work

BELIZE

- Meeting and second workshop with Bomba farmers group
- Meeting of First Stop Taxi Co-operative

CAYO

- Review of records for audits of Sta Familia GVL, Cayo Quality Honey, and Savannah Taxi Co-ops
- Meeting of Cayo Quality Honey Producers Co-operative
- Meeting and workshop with Osh Mul Ka and Maya Green Growers Co-operatives (San Antonio)
- Field visit to Valley of Peace Association
- Participation in FAO Resilient Value Chain Project Launch and Inception Training

STANN CREEK

- Participated in FAO Resilient Value Chain Project Launch and Inception Training

TOLEDO

- Participated in AMEXCID virtual beekeeping training
- Meeting with Los Buenos Amigos Co-operative to re-arrange Management Committee
- Meeting with San Miguel Matambre farmers group



Cayo Coops Officers hold meetings



PG Coops Officers meet with clients