

AgrikalsaNius

IN THIS ISSUE AUGUST 2013

- **PG 1** MAL involves farmers in capsicum selection
- PG 2 Boosting piggery skills MAL to trial slippery cabbage beetle resistance
- **PG 3** PNG expert assists MAL in negative screening training
- PG 4 Frank Wickham farewells MAL
- PG 5 Taiwanese Technical Mission farewells Wickham West Baelelea's tilapia fish farm
- **PG 6** MAL targets feed solution for poultry farmers Makira's first cocoa man
- PG 7 Vanuatu endorses Solomon Islands' cattle industry Process of organisational development for MAL
- **PG 9** Taro leaf fact sheet
- PG 10 Recipe: Coconut cake



A rep from Heritage Park Hotel assesses the capsicum plants.



Taste test participants score the capsicum varieties.

MAL involves farmers in capsicum selection

A capsicum field day organised by the Ministry of Agriculture and Livestock and AVRDC – The World Vegetable Center – has demonstrated the new approach taken by the Ministry of Agriculture and Livestock to include farmers in the process of selecting new crop varieties.

In the past farmers were simply the recipients of the seed varieties selected by the Ministry. But the Director of Research in MAL, Helen Tsatsia says that approach has now changed with farmers playing a key role in choosing new crop varieties.

"Now farmers are involved in the research and selection phase. They evaluate the crop and tell us which variety they prefer to plant and grow."

The capsicum field day showcased the outcome of three months of capsicum trials in 11 varieties that included local and international seeds.

Farmers, MAL officials, representatives from business houses including hotels and seed distributors took part in the field day and evaluated the harvest.

This included a taste test and an inspection of the crops.

The Acting Permanent Secretary of MAL, Jimi Saelea, commended the involvement of farmers in the field day.

"The participation of farmers is very important. At the end of the day it is the farmers who will be taking up the technology and adopting it to their environment."

He said the desired outcome is not only food security but also improved livelihood for the farmers.

He recommended that the type of research work and trials on show during the field day also be conducted in the provinces.

"We have to take this type of work out to the farmers in our rural areas to show what is on offer. We also need to test in different climatic conditions of different the provinces as part of our research."

The capsicum field day is the outcome of a regional project, funded by ACIAR and carried out in partnership between MAL and AVRDC.

The aim of the project says Tikai Pitaikia of AVRDC is to look at high value crops such as capsicum and tomatoes.

Over 20 kg of capsicum were collected in the first harvest of the trials.

"Our main work is to assess the capsicum varieties. The plants were also monitored in terms of growth as well as resistance to pests and diseases."

The project also tested the market for capsicum in the capital with a number of hotels and restaurants each buying more than 10 kg of the first harvest.

"We've had further requests for another 20 kg from one of the restaurants at the price of \$30 per kg. But we haven't been able to supply them because the plants need to be assessed first."

"The early indication is that there is a good market out there for capsicum. It's just up to the farmers to deliver."

The next step of the project is for the selected varieties to undergo farmer field trials followed by further evaluation.

"After these trials we will evaluate with farmers on the varieties they want to grow. Then MAL will decide on how to distribute seeds. Right now we are using code names – MAL will select the best seeds and give them names."

Boosting piggery skills

A biology student from the Solomon Islands National University, Jaycky Houkura has been building valuable work experience and skills at the Taiwanese Technical Mission.

Houkura is part of TTM's programme to improve the breeding quality of pigs for local farmers.

As part of the project, breeds from overseas are crossbred with local pigs to develop a breed that is best suited to local conditions.

Since joining TTM's pig nursery Houkura has been responsible for supervising workers.

For the young agriculturalist the work experience has been valuable providing him with the opportunity to put into practice what he has learnt in class.

"Every year we select more than 10 recruits, if they are good we will continue to train them," said Donald Wong of TTM.

The work at TTM also includes a small holder bio gas



Donald Wong of TTM and Jaycky Houkura at the pig nursery.

project where pig waste is used to generate electricity.

MAL to trial slippery cabbage beetle resistance

For Solomon Islanders the slippery cabbage, known as baera is a big part of the national diet.

Whether mixed with coconut or taiyo (tuna) or kumara (sweet potatoes) the slippery cabbage has a special place on the dinner table of Solomon Islanders.

One of the biggest threats to slippery cabbage is the flea beetle that destroys the plant by eating through its leaves.

The Ministry of Agriculture and Livestock through support of ACIAR is preparing to run trials on how to combat the flea beetle.

MAL's Integrated Pest Management Coordinator Maria Gharuka says preparations are underway at the Quarantine compound in Henderson ahead of trials.

"So far we've planted 200 plants in lots of four at the Quarantine compound to look at four different methods of managing the flea beetle."

The first method will involve covering the soil with copra sacks before planting. This is to isolate the insect.

"The flea beetle lays its eggs in the soil. When it hatches it crawls up the plant and destroys the leaves," said Gharuka.

The second method will involve the use of black polythene plastic in place of the copra sacks.

The third method says Gharuka will use tangle foot, an adhesive that is applied at the base of each plant. When the adult flea beetle makes its way from the leaf to the soil it will get stuck on the adhesive.

The fourth plot, Gharuku explains will be used as a control, with nothing to be done to the plot.

Gharuka says the trials are important as they offer a non-chemical solution to dealing with the flea beetle.

"What the Ministry has seen is that a lot of farmers have resorted to spraying their crops with chemical to kill the flea beetle.

"The research offers a way that farmers can manage the pest using safe and organic means."

The flea beetle is commonly found on islands throughout the Solomons, especially in areas cultivating slippery cabbage

The trials are expected to start later this year.

"Right now we are waiting for the plants to grow bigger

2 AgrikalsaNius August 2013

and for the number of insects to increase before we can trial the methods."

MAL is also doing similar trials on the cabbage known locally as ball or English cabbage.

PNG expert assists MAL in negative screening training

Staff from the Ministry of Agriculture and Livestock's Research Department participated in training in negative screening of cocoa plants organised by Papua New Guinea scientist Dr Josephine Maora.

Negative screening is a process used to identify cocoa plants that are the most resistant to pests and diseases such as black pod.

The training will help the Ministry to identify cocoa breeds that are not only high yielding but are also resistant to pest and diseases.

The training focused on black pod, the major disease affecting the cocoa industry in the region.

MAL's Cocoa Research Officer Raymond Vava says with the training over, staff at the Ministry can use negative screening to identify positive qualities in cocoa varieties brought over from Papua New Guinea.

"We have a nursery of 2,000 PNG cocoa seedlings at St Martins, Tenaru, but we don't have enough land to grow all the plants.

What we will do is use negative screening to identify the stronger plants which will then be grown and tested."

Vava says the training has helped to boost the capacity of the Ministry as it works towards the Government's cocoa export target of 20,000 metric tonnes by 2020.

The training conducted by Papua New Guinea plant pathologist Dr Josephine Saul Maora from the Cocoa Coconut Institute Ltd was held at the laboratory of the Guadalcanal Plains Plantation Oil Palm Limited (GPPOL) in North East Guadalcanal.

The training involved culturing the fungus responsible for black pod disease and infecting samples to test the resistance of cocoa plants to the fungus.



Dr Josephine Maoro.



MAL Research staff monitor the impact of the fungus on samples.

Dr Maora also used the opportunity to share research techniques from PNG.

"Rather than using agar, which is a very expensive material, to cultivate the fungus, we infect healthy cocoa pods and put them in the incubation room for 10 days."

Cocoa leaf samples from a nearby farm were infected in the lab. After 10 days of incubation the samples were then analysed and monitored every two days for over one week, to gauge the effect of the fungus on the leaves.

"I also showed the staff how to calculate the amount of fungal spores to be applied to the samples using just a calculator. You can do it on computer but where I'm from often we are working outside in areas without electricity so we have to do our calculations manually."



MAL Research officer Raymond Vava prepares a test solution.



Outgoing MAL PS Frank Wickham.



MAL staff and stakeholders farewell Wickham at a dinner at Jina's Restaurant.

Frank Wickham farewells MAL

After almost two years of service, Frank Wickham was farewelled as outgoing Permanent Secretary of the Ministry of Agriculture and Livestock in August.

Wickham has been credited with reviving the Ministry and setting its strategic direction for the next two years.

This includes the national strategies for the cocoa sector and oil palm.

In farewelling the PS, Agriculture Minister David Tome praised Wickham's contribution to the Ministry.

Wickham first joined MAL in 1986 after leaving university with a stint at Dodo Creek. In 1991, Wickham joined the Solomon Islands College of Higher Education as a lecturer before becoming the head of the School of Natural Resources. In 1996, he went for further studies in the United Kingdom at the University of East Anglia. Returning

home at the end of studies he managed a European Union project before its closure as a result of the ethnic tension. In 2001, he joined the Secretariat of the Pacific Regional Environment Programme in Samoa where he worked for eight years. In 2011, he returned home and worked as a consultant for the Environment Ministry before joining MAL in 2012.

Wickham leaves MAL to take on the position of general manager at the National Fisheries Development Limited.





MAL Minister Hon. David Tome and Wickham share a song with the Lokol Kakai String Band.



MAL Minister Hon. David Tome farewells Wickham.

4 AgrikalsaNius August 2013

Taiwanese Technical Mission farewells Wickham

In late August, MAL partner agency the Taiwanese Technical Mission bade farewell to the Permanent Secretary of the Ministry of Agriculture and Livestock Frank Wickham.

In farewelling Wickham, the Taiwanese Ambassador Roy Wu praised the outgoing Permanent Secretary for his contribution to agriculture in the Solomon Islands.

He also noted the fruitful corporation between TTM and MAL during Wickham's tenure.

Ambassador Wu called for the spirit of corporation to continue with MAL.

This call was further reinforced by the Minister for Agriculture, the Hon. David Tome.

The Minister highlighted TTM's contribution to the agriculture sector including the introduction of new pig hybrids, new fruit varieties including pawpaw and guava and TTM's assistance in developing the rice sector in the country.



Wickham and MAL senior staff meet with TTM officials.

The farewell function was staged at TTM farm at Burns Creek where rice scientist Dr Ling was also farewelled.

Dr Ling was responsible for TTM's rice programme and is moving to Fiji.

West Baelelea's tilapia fish farm

Contributed by Noel Raposi, MAL

In July MAL's , Noel Raposi visited a tilapia farm at Madalua Village in North West Baelelea in North Malaita.

The tilapia farm, owned by Dola Roboliu, a former employee of SI Ports Authority, is situated on former swampy land.

Robolui says the aim of the farm is to provide a supply of fresh fish to families living in the area, as access to the sea is difficult. Most families rely on canned fish as their protein source.

Raposi said the work on the farm started in 2012 with Robolui clearing an area that was full of swamp taro, also known as kakake.

A total of eight tilapia fish ponds were constructed with the assistance of relatives and were decorated with colourful plants.

Roboliu says his future plan is to expand the size of the fish pond and also set up a food bar near the ponds. He



The tilapia ponds.

also intends to build two houses as home-stay options for visitors.



MAL targets feed solution for poultry farmers

The Ministry of Agriculture and Livestock is assisting Local farmers though have been unable to match the poultry farmers to reduce their production cost through a joint project with NARI to develop local feed.

Currently Solomon Islands farmers spend the bulk of their production costs on expensive, overseas imported poultry feed.

With local farmers facing major competition from an influx of cheap imported chicken, MAL Minister Hon. David Tome says the outcome of the project can assist poultry farmers to be more viable.

Over the past eight months the price of imported chicken has dropped from \$90 for 2 kg chicken wings in January to \$45 in August. The Government attributed the price drop to an oversupply of chicken, as there are now increased numbers of importers, combined with improved shipping schedules.

price.

Minister of Agriculture and Livestock Hon. David Tome told Parliament in September the key to helping farmers is to reduce their costs on chicken feed, so they can be more competitive.

"MAL in partnership with NARI (PNG National Agricultural Research Institute) has been conducting trials to produce local feed using imported high concentrated feed combined with potato and cassava."

"Initial trials conducted with farmers at Aruligo in West Guadalcanal have been positive while further test are yet to be carried out at project sites in Western Province and Malaita Province."

"The project once successful will supplement the high cost of chicken feed in the country," said Hon. Tome.

Makira's first cocoa man

In August, MAL farewelled one of its longest serving staff, Victor Kaihou after 37 years of service.

The former Deputy Director of Extension said the highlight of his three decades in the Ministry was the introduction of cocoa to Makira in

The impact of the first plot of cocoa at Kanasugu, he says is evident with Makira the country's third highest cocoa producer.

"At the time a cyclone hit Makira, wiping out coconut plantations in Ulawa, Ugi and the mainland. The Ministry asked what to do, so we looked at various alternatives such as chilli and cocoa.

"Although chilli would take less time to harvest, we went with cocoa and it has spread."

Kaihou was farewelled in a dinner at Jina's Restaurant where Acting Prime Minister Manasseh Maelanga, MAL Minister Hon. David Tome and MAL Permanent Secretary Frank Wickham paid tribute to Kaihou's contribution to the sector.

"Victor's commitment to agriculture is second to none. One of his biggest contributions can be seen in the current stock of agriculture officers who have been trained and mentored by Victor over the years," said Wickham.

Kaihou joined the Ministry of Agriculture in 1976 with his first posting in Makira.

"Life was a bit tough," he said reflecting back to his first posting. "All I had was a Seagull outboard motor engine which wasn't much use in rough weather."

To move around Makira and visit communities, Kaihou and his team had to walk, with Kaihou walking around the Makira mainland six times during his time there.

"We didn't have any sophisticated equipment all I had was a calculator. Not like computers today or GPS equipment and vehicles."

At the end of his time in Makira he was posted in Honiara where for six years he looked after training.

After those six years he returned to Makira for a further four years, before going for further studies at Wolverhampton and Reading in

He took some time off on his return to go back to his home village. At this time he was asked to take up posting to Afio in South Malaita before moving to Auki in 1995 to assist the Chief Field Officer. This was to be followed by his appointment as Malaita's Chief Field Officer.

In 2011, he was moved to Honiara where he was Deputy Director of



Extension before finishing in 2012.

After finishing up with MAL he took up contract work with the Food and Agriculture Organization of the United Nations to look after the rice programme in Solomon Islands.

In June, Kaihou, was selected for the Queen's Birthday honours (British Empire Medal) in recognition for his services to agriculture.

Leaving MAL behind, Kaihou urged MAL's extension officials to spend more time with farmers and interact with them to take agriculture forward.

"During our time we had to spend at least 22 days of the month out in the field. I think it is something where we have to return to.

"Now we have a good transport system, with vehicles and transport so there is no excuse."

6 AgrikalsaNius August 2013

Vanuatu endorses Solomon Islands' cattle industry

Vanuatu has given its endorsement for Solomon Islands to continue to import cattle, following a successful mission to Port Vila led by Agriculture and Livestock Minister Hon. David Tome in August.

The assurance from Vanuatu's Agriculture Minister came as livestock and quarantine officials from the two countries completed formalities on the shipment of 450 head of cattle.

Director of Livestock Barnabas Keqa says SBD\$1.2 million was paid to the supplier on Santo.

"The cattle we viewed were healthy and aged around 9–10 months."

The shipment is expected in the country by the end of October and is destined for West Kwaio as part of the Government's policy to revive cattle in Solomon Islands.

MAL's Livestock Director Barnabas Keqa says after a period of observation the cattle will be used to breed stock that will be distributed to farmers around Malaita.

Hon. Tome's Vanuatu mission also included a reconciliation ceremony to settle concerns that were raised in Vanuatu over the Solomon Islands 2011 import that was arranged with private buyers.

Under-Secretary (Technical) Jimi Saelea says the trip was successful with the Vanuatu Agriculture Minister giving his assurance that the export of cattle to Solomon Islands would continue unabated with the endorsement of the Government.

"It was important that we set up the channel and ensure that the cattle trade between the two countries would



Vanuatu imported cattle at Tenavatu Farm.

continue."

Vanuatu has an international reputation for its premium beef industry that Solomon Islands is attempting to tap into in order to revive the national cattle industry. The Solomon Islands cattle industry was affected during the ethnic tension when fighting led to the shutting down of the country's main cattle stations around Guadalcanal.

In 2011, 400 head of cattle were imported from Vanuatu and were held for observations at Tenavatu in North East Guadalcanal.

The Livestock Department says the cattle will soon be distributed to smallholder farmers towards the end of the year once farmers have facilities in place to look after the cattle. •

Process of Organisational Development for MAL

By Malcolm Bell, HR Advisor

In the last issue of this newsletter, it was reported that as well as structural change for MAL there are a number of systems currently under consideration for review/design/redesign. The process of structural and system assessment and design is continuing.

Commenting on the process so far, Malcolm Bell noted that various management and provincial consultations have been followed up with progressive phases of design and feedback based on information gained. During July, a number of meetings with individual Directors were conducted, and ideas were sought for the emerging ideas on the design of structural options. A number of ideas were taken on board and structural options under consideration went through a number of iterations.

The Acting Permanent Secretary Jimi Saelea reported on a senior management meeting held on 10 September. The proposed new structure was formally presented by the design team and Directors were given the opportunity to raise queries and concerns. Some issues discussed included the need for change, the timing and manner of change introduction, whether loss of focus may be at risk, appropriate classification levels, and how much change to existing jobs may be envisaged. Discussion was wideranging, and clarifications were provided. In particular it was noted that many jobs need not change as a result of the structure. It was reported that the Corporate Services structure proposal is near completion. It was also noted that jobs will be designed using job analysis and by writing job descriptions, and that these may often vary slightly from the standard structure model. For example each province will have different numbers of jobs, different specialty roles, and different geographical considerations. Directors were invited to discuss the formal proposals with their senior officers and to report back to the design team their thoughts and suggestions. This should happen soon to allow for documenting the final approved structure and for presenting this to Cabinet this year.

Bell also presented to the meeting a number of recommended principles for the filling of jobs once the new structure if finalised. These include:

- The intent of the restructuring is to allow for and initiate improved MAL operations, not to reduce staff numbers or salaries. All staff should be reassured that no staff member would be identified or processed for termination of employment or reduction in salary as a direct consequence of restructuring.
- 2. Existing positions do not need to be declared vacant nor do all jobs need to be advertised, as there are many jobs that are largely unchanged in the new structure. Many staff will remain in their existing positions, while some other positions will be filled by a variety of standard processes.
- 3. It is the assessment of MAL management that the number of people and jobs within MAL should be increased, eg new jobs in Biosecurity in support of the new Act, however the MPS has advised that no increase to the MAL establishment is possible at the moment as there are many vacant positions that should be filled before this can be considered. Hence vacant positions will be filled as a matter of urgency.



MAL staff at a workshop organised by the Ministry of Public Service.

- 4. New recruits who have just or are about to complete their Certificate in Tropical Agriculture should fill some of the vacant positions in the current establishment. MAL HR should work with SINU to achieve this by the end of 2013.
- 5. The aim of the MAL restructuring has been to improve efficiency of operations and communications, to make more effective the work of individual staff and managers, and to strengthen and broaden the Ministry's compliance with Government requirements and client (particularly smallholder) services. Hence the aim is to use restructuring as a means to improve,

- strengthen and broaden what MAL does and how MAL does it. This will require new job descriptions and many new or revised systems.
- 6. The majority of MAL staff will continue in their current roles, with no or little change to their duties, and these staff need only be confirmed in their jobs with updated job descriptions. New Job descriptions should be prepared for these staff using information gained from consultations, and approved under the authority of the Permanent Secretary.
- 7. Some jobs will be changed or new to MAL as a consequence of the restructure, and where possible appropriate MAL staff to fill these positions will be identified through discussions with existing Directors and other relevant supervisors. Identified staff will be allocated to their new jobs with new Job Descriptions, under the authority of the Permanent Secretary.
- 8. In general, principles 6 and 7 will be managed so that the staff continue with an unchanged classification, however where appropriate some jobs may need to be filled at a higher classification because of the inherent complexities of the changed or new job and its required competencies and training. To fill these, some individual staff may be recommended for promotion into a job relevant to their existing role and capability, and for which they are assessed as meeting the relevant selection criteria, where that job is classified higher than their current classification. Papers for such promotions will be submitted to MPS under the authority of the Permanent Secretary.
- 9. Other positions will be denoted as "key" and "senior", eg "Director" positions, and these will be advertised internally in MAL using standard recruitment and selection procedures. With the cooperation of MPS, internal advertisements and Public Service Board appointments will be completed before the end of the year.
- 10. Training for those staff undertaking new and unfamiliar responsibilities will be planned for 2014 and following years, to ensure a smooth transition. It is hoped that this will be supported by MAL and RDP funds, but it will also be the case that much skills development will be managed in-house.

The filling of positions in the new structure should support smooth and speedy implementation without causing staff to be concerned about their employment security, salary and prospects or unnecessarily delaying positive change.

Processes for formal consultation by RDP in support of the organisational development for MAL have nearly been completed. If you haven't had the opportunity to input your ideas yet, you may request Gabriele Hiele (Phone: 21467 Mobile: 7755326 Email: ghiele@sirdp.org.sb) for a copy of a questionnaire designed to gather ideas and attitudes to structural issues.

8 AgrikalsaNius August 2013

Taro Leaf fact sheet

By Australian Centre for International Agriculture Research

Botanical name: Colocasia esculenta; Xanthosoma sagittifolium (Araceae)

Location specific common names: *C. esculenta*: true taro, talo, dalo, dasheen

X. sagittifolium:tannia, taro palagi, Singapore taro, malanga, cocoyam, eddoe Plant characteristics: All taros are edible aroids, with large, broad leaves on stems growing from a corm or enlarged starchy stem with numerous roots. The main difference between X. sagittifolium and C. esculenta is in the leaf shape; Xanthosoma spp have sagittate (arrowshaped leaves) whereas the leaves of Colocasia spp are peltate (rounded/shield shaped). Most taros are known as a starchy vegetable but in many countries leaves, stems, and runners are important and nutritious foods. Plants range from 1 to 3 m in height. The sap from these plants can irritate the skin.

Uses: The younger full leaves are best to eat. They are often used as edible wraps for food parcels but must be well cooked (preferably boiled) to reduce the itchiness caused by calcium oxalate crystals in the leaf tissue. For example in Tonga the leaves of *C. esculenta* are used to produce lupulu (corned beef wrapped in taro leaf then baked), and in Samoa for palusami which is onion and

coconut cream (sometimes with meat/fish included) wrapped in taro leaf and baked. Shredded leaves can be added to other ingredients and cooked by steaming, boiling, frying or baking.

Availability: Leaves of both taros are available all year in most tropical locations.

Propagation methods: New plants can be produced from tops of the main corm, suckers or in some cases, runners. Tissue cultured plants are recommended for

introducing new varieties into a country or in some cases, between different islands and areas within a country, to ensure disease free mother plant material

and to prevent the spread of diseases.

How to grow: Both aroids are not difficult to grow providing the soil is rich in organic matter; however C. esculenta is more demanding of water than X.

sagittifolium. Both species can be grown in full sun but preferably with some afternoon shade. Ideally the plants should be well mulched, keeping the soil moist and the area around the plants free of grass and other weeds.

Threats: *C. esculenta* is more susceptible to pests and diseases than *X. sagittifolium*. Taro leaf blight, a fungal disease, is a serious problem in some countries, for example, Samoa and therefore resistant varieties must

be grown. Leaf eating insects like the hornworm (hawk moth) and armyworm caterpillars can also cause significant leaf damage, if not controlled. Selecting

healthy planting material and providing good growing conditions can reduce the occurrence and impact of these pests.





• True Taro leaves

• Tannia leaves

Harvesting: Suitable leaves (younger) can be harvested daily. They should be neatly picked, kept cool and moist and rolled into small bundles. Harvesting in the coole part of the day prevents wilting. Unless being grown solely for leaves, plants should grow 2-3 new leaves after harvesting; this allows the plant to maintain its vigour and produce a reasonable corm.

Post harvest and storage: Leaves should be used fresh after washing carefully with water of drinking quality or clean seawater. They can be loosely bundled, wrapped in damp paper and kept in a cool location. If covered with a clean plastic bag, and kept cool, they should store for a day or two.

Project findings/nutritional value: Samples of taro leaves for analysis were collected from north Queensland, Torres Strait Islands, Tonga, Solomon Islands and Samoa. Around 100 grams of fresh leaf (about 3 handfuls) per person for a meal serving will provide useful nutrition. Taro leaves are good sources of the carotenoids, lutein and betacarotene, protein and certain minerals

Carotenoids: Lutein is important for eye health (e.g. reducing risk of cataracts), and beta-carotene (provitamin A) is important for vision, immunity and bone health.

Protein: This is important in forming muscle, cell membranes, enzymes, blood components antibodies, DNA and RNA. The nitrogen analysis here indicates a protein content of around 18%.

Iron: Important for healthy blood and energy.

Zinc: Important for immunity, growth, carbohydrate metabolism, and DNA and protein formation. Humans have around 600 different Zn-containing enzymes/proteins.

Potassium: Controls body water balance through its interactions with sodium and chloride ions, and is involved in electrical stimulation of nerves and muscles. Its deficiency can cause muscle weakness, cramps and irregular heartbeat.

Recipe: Coconut cake

Ingredients

- 2 coconuts grated. Reserve 1 cup for topping, squeeze rest for coconut milk
- ¾ cup brown sugar
- 1 ½ cup self raising flour
- 1 cup plain flour
- 2 eggs
- 3 table spoons margarine

topping

- 2 tbs brown sugar extra
- 1 cup grated white flesh reserved for topping

Method

- 1. Combine self raising and plain flour.
- 2. Cream sugar and margarine until mixture is creamy and pale in color.
- 3. Add eggs one by one beating in well between each.
- 4. Alternating coconut milk and combined flour mix, add rest of ingredients.
- 5. Mix together well by folding action.
- 6. Pour into prepared pan.
- 7. Mix grated coconut with 2 table spoons of brown sugar.
- 8. Rub coconut and sugar over the cake mix in pan.
- 9. Bake in oven until cake is cooked (40mins at 150 degrees).

notes

Before squeezing grated coconut, mix well with ½ cup water.



For more information on stories in this newsletter or agriculture enquiries contact the Agriculture Information Unit within the Ministry of Agriculture and Livestock.

Ph: 22143/22144 **Email:** mal.agrikalsanius@gmail.com For the latest agriculture news and stories catch Famas Kona every week on the national broadcaster SIBC at 8.30pm on Monday and 7.30pm on Wednesday.

The Agriculture Information Unit is the public relations arm of the Ministry of Agriculture & Livestock. Its role is to disseminate agriculture information to the public and farming communities using radio, newspapers, television, online and print media.

Library

The Solomon Islands National Agriculture Information Centre is now open.

The library has a major collection of books and information on Solomon Islands agriculture. Members of the public and students are encouraged to visit the library for information on agriculture in the Solomon Islands and around the world.

Opening hours Monday & Wednesday Friday

1:30pm - 4:00pm 9:00am - 11:30am