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Alafua Campus Open Day 2017



*Minister of Education, Sports and Culture,
Hon. Loau Keneti Sio*

The School of Agriculture and Food Technology (SAFT) of The University of South Pacific Alafua Campus, Samoa, celebrated the Annual Open Day on July 28, 2017, by inviting high school, college students and the general public to visit the university. A USP alumnus, Dr. Sipiliano Faka’ota, offered the invocation and Open Day Committee Chairman, Mr. Sia Matalavea, gave the welcome speech.

The keynote address was delivered by the Minister of Education, Sports and Culture, Hon. Loau Keneti Sio. The keynote focus was on the all-important function of the Alafua-based SAFT as a potential solution for some pressing global problems such as hunger, poverty and food security. The need for more agricultural scientists was stressed and cited as the impetus for the annual co-sponsorship by USP and the Government of Samoa since 2013 of 20

Bachelor of Agriculture scholarships. The Head of the School of Agriculture, Assoc. Prof. Mohammed Umar, also spoke on the great importance of Agriculture in the Pacific Island Countries.

After the Opening Program, the tour by students to all booths followed. In relation to this, the units under the School of Agriculture and Food Technology showcased some exhibits and other activities to introduce to the students various curricular offerings and activities.

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SAFT Open Day Displays

Crop Protection Unit

The Crop Protection Unit put up an array of pests affecting agricultural crops in Samoa. Housed in a tent in front of the Crop Protection Building, the visitors, which were mostly high school students, were briefed by Prof. Manuel K. Palomar, Consultant, on the groups of pests of economic importance in the Pacific Island Countries especially in Samoa. Assisted by students taking AG363(Pest and Disease Management) and Beverly Taumaloto (Lab Assistant), visitors were shown posters of the 5 graduate researches conducted in the unit, mounted collection of hundreds of various insects (both harmful and beneficial), and a laminated herbarium collection of weeds and plant diseases.



They were amazed by the appearance of plant pathogens such as fungi and nematodes under the compound microscope and were interested on the set-up of how nematodes are collected from the soil or even from leaves. They were very curious about the caged live snails and how they are controlled and generally asked a lot of questions on how pests are studied in USP-SAFT. The visit was capped by garden demonstration plots on how to manage the various pests in the garden through biological control, intercropping, mulching and other cultural practices that are environmentally friendly.



Crop Production Unit

Various varieties of seedlings and past masters student research presented on the open day at the Crop Production Section Booth. People were very thrilled to discover for the first time the fruits of black peppers. Seedlings like Chinese cabbages, tomatoes (head master), round cabbages, black pepper and capsicum were on display. Moreover, students were eager to know more by asking numerous questions regarding the application of fertilizers on each vegetable and other cultural practice. Additionally the past research done by masters' students and posters prepared by the Mr. Falaniko Amosa, were well presented and caught everyone's interest and attention.



The most interesting part was seeing a number of people and students willing to ask and learn more about crop production and seeing them off with a smile on their faces. This was supervised by Mr. Falaniko Amosa with the assistances of P/G and U/G students.



SAFT Open Day Displays

Agribusiness

Likewise under the Agribusiness Section, information was showcased on the Role of Integrated Organic Farming, Importance of Forest-Based Farming Activities in Addressing the Nutritional and Food Security in the context of Pacific Island Situation and on different steps to be followed in the Efficient Management of Natural Resources, etc.



To organize this process, the services of Kalti, Mr. Carlos and Mr. Pen (Post Graduate students) were used under the supervision of Dr. Jagdish Bhati, Dr. Nandakumar M Desai and Dr. Sonny Lameta.



Food Technology

Food Technology is the most recent innovation of SAFT through SAFT Head of School, Assoc. Prof. Mohammed Umar, to complete its academic mandate. For the Open Day, its main purpose was to enlighten the public that food technology adds value to the produce through appropriate food processing, quality control, packaging and labeling.



Put on display were posters and food products, especially prepared from cassava, breadfruit, local spices and taro. The visitors from FAO, private companies, local media, SAFT staff and students from several participating schools were given the opportunity to look and taste products from cassava and the 3 in 1 juice made of local ingredients, tentatively called Quench.



Inquiries were directed mainly to the Food Technology Consultant, Prof. Lutgarda S. Palomar, who was assisted by her Lab. Assistant, Victoria Muavae and former undergraduate research students. The food technology display was one of the major attractions at the Open Day and many questions were asked by the visitors to learn how some of the displayed products could be

made. Students were very impressed and thankful for the information that made them aware of the great career and employment opportunities that USP-SAFT and IRETA had to offer in relation to food technology.

SAFT Open Day Displays

Agricultural Engineering

Hundreds of students visited the Agricultural Engineering Display during Open Day and seemed genuinely interested to find out that the use of machines and their implements in agriculture was primarily responsible for the development of modern societies in developed countries. They were told that because machines, such as the tractor, provided so much more power than that available to the human, only a few people were required to produce the food and fibre required by a country's population thus freeing up the majority to develop other sectors of the economy as is the case for USA, Japan and Australia.

The students were shown the tractor and range of associated implements available on campus which were used to teach the engineering course AG134: Agricultural Mechanization. And it was timely because right next to the exhibit was an entire field of green, full of student practical on all manner of crops, part of the AG266 class where the tractor and implements were used two weeks earlier. The students were thus convinced of the importance of agricultural engineering. They were also shown levelling equipment used for slope determination, sprayers and sample engines used for student practical.



Soil Laboratory

The department of Soil Science showcased some exhibits and other activities to introduce the various curricular offerings by the department to school students. The Department of Soil Science under the leadership of Dr. M A Kader welcomed the students in their laboratories and screen house by introducing to them the wonderful world of Soil Science through their poster presentations, live displays of different nutrient deficiency symptoms on maize plants, short lectures and etc.

There were demonstrations on collection and preparation of soil and plant samples for laboratory analysis, live deficiency symptoms of nitrogen, phosphorus and potassium on maize plant grown in sand culture, analysis on various physico-chemical properties of the soil and, displayed and described pot trials on Chinese cabbage production through organic amendments (compost) by Master student. The Department were able to entertain hundreds of students from various high schools and colleges in Samoa. It was indeed a fun filled, entertaining and encouraging educational activity.



SAFT Open Day Displays

IRETA Farm

Students and guests visited the Animal Section that showed chickens, pigs, cattle, sheep and goats. Students also visited the IRETA Farm where they observed different crops such as cabbages, tomatoes, cucumbers and watermelons and many other crops grown for the purpose of student projects and the Open Day.



Students were drawn to the farm displays and were very interested to find out what USP had to offer. They also enjoyed a very lively informative and humorous presentation by the Lecturers, P/G students and IRETA staff at the Livestock and the Crops Farm.



Pest Museum at SAFT

The Crop Protection Unit of the School of Agriculture has established a PEST MUSEUM to cater to the needs of researchers, students, extension workers and farmers in Samoa. Housed in an air-conditioned room (that used to be a storage room in the unit) is a collection of different groups of pests that affect agricultural crops to aid in the correct identification of specific pests as a pre-requisite for their proper management. The groups of pests include arthropods (insects and mites), plant pathogens (fungi, bacteria, viruses and nematodes), weeds, vertebrates (rats, birds and bats) and molluscs (snails and slugs).

At present, the collection consists of hundreds of preserved insects that are both harmful and beneficial representing various types and sizes. It also includes a number of laminated specimens of weeds and plant diseases commonly found in the locality. It should be noted that this collection is just the beginning of the long-term goal of getting a comprehensive representation of pests that are found not only in Samoa but in the whole Pacific Island Countries as well. The Pest Museum would welcome donation of this kind of specimens from private collectors and institutions.

The Pest Museum was realized through the initiative of Prof. Manuel K. Palomar, Consultant in Crop Protection, and the strong support of Assoc. Prof. Mohammed Umar, Head of School at the School of Agriculture and Food Science in USP-Alafua.

School Visit in Savaii

In preparation for the Savaii Centre Careers Expo 2017, a Team of presenters led by the Head of School of Agriculture and Food Technology, Associate Professor Mohammed Umar, IT Manager, Lemamea Sia Matalavea, Student Administrative Services Coordinator, Ms. SeulGee Samuelu, Biology Lecturer, Dr. Sunil Singh and Student Learning Support Specialist, Ms. Niseta Buatava from the Alafua



Campus visited the further west Colleges on the island, to present on what USP is all about, emphasizing that we at USP can definitely SHAPE THEIR FUTURE! This decision was made given their remoteness and unavailability to attend the Career Expo Day.

It was a fun-filled morning and students were very keen to learn more about USP during the three visits. The first visit was to Palauli Sisifo College in Salailua, where the Team met with the Principal, staff and students. The principal commented that they seldom have such visits and it was important that all students not only the senior students have the opportunity to be part of the presentations. The Team spoke to the schools about the School of Agriculture, outlining the three programs and services, highlighting PacTafe, IT support services, the newly established Student Learning Support Services and registration. The Savaii Sisifo College embraced the new found knowledge during the question and answer sessions and it was very pleasing to see some of the STAP graduates who were staff members at this college.

When the Team reached Asau College, the school welcomed them with songs and words of appreciation even though the school was about to finish for the day. The students thoroughly enjoyed the presentations and more so during the Q&A parts whereby they were given incentives by winning monetary prizes donated by the Team for correct answers.

The visit was a very participatory effort and hopefully the students have learned much from the Team as the Team also from them.



Advanced Research in Soil Science Laboratory

A Tuvaluan PhD student (Taniela Kepa Siose) and two Masters students- one from Papua New Guinea, Charlie Suruban, and another from Samoa, Tanya Seiuli Lesa, are currently completing or conducting their thesis research in the Soil Science Laboratory under the supervision of Dr. M. A. Kader.

Taniela Kepa looked at the adaptability of improved sweet potato cultivars in different Samoan soils with improved management techniques. He assessed three sweet potato cultivars (IB/PR/12, IB/PR/13 and IB/PH/03), first with a set of four soil types (calcareous sandy, acidic clay and two silty clay soils) under pot culture, then with different organic and inorganic nutrient management at field condition to find out the best cultivars suitable for Samoan soil and agro-environmental condition with appropriate nutrient management protocol. The first two sweet potato cultivars originated from Peru (PR) while the last one was from the Philippines (PH). It was observed that the Philippine cultivar (IB/PH/03) is a dwarf type cultivar having shorter vine length with frequent branching, but produced the highest storage root yield, indicating its adaptability to Samoa. It was also observed that sweet potato grows well with a promising yield in soils that were abandoned due to decline in taro yield. Another noticeable result from this study was that phosphorus was found to be the most limiting factor for sweet potato cultivation in Samoan soil but can be corrected with application of TSP/SSP fertilizer.



Charlie Suruban looked at the fertilizer value of locally available plant biomass through composting and their rates of application on soil productivity using Chinese cabbage as test crop. He used grass (lawn grasses), velvet bean (*Mucuna pruriens*), leaves and petioles of giant taro (*Colocasia esculenta*), Gliricidia (*Gliricidia sepium*) and coral tree (*Erythrina variegata*) for preparation of compost.



Tanya Lesa is trying to develop an irrigation schedule of Drip Irrigation for a high value crop, lettuce, in different soil types under the tunnel house.

Soil and Plant Sampling Analysis in Laboratory

The function of the Soil Science Central Lab is centred mainly on the analyses of soil, plant, and feed samples for assessments of their nutrient contents which are fundamental for management of sustainable food production. Disseminating this role to the public audiences particularly to the young enthusiastic high school students, members of the Soil Science Department took part in showcasing the general operational works that are routinely done.

It began with showcasing soil sampling using a soil auger. The actual soil sampling was done prior to the occasion due to limited time but the practicality of how to correctly collect soil samples was emphasised. From the field, soil composite sample is collected and air-dried in room temperature for at least 4-7 days, followed by grinding and sieving (< 2 mm or 0.25 mm) before the laboratory analysis. With regards to plants and feed samples, the fresh samples are oven-dried to a constant weight at 65 °C, followed by grinding. Once finely ground, the samples are ready for chemical analyses. Chemical analyses include testing for macro nutrients (OC, N, P, K, Ca, S, and Mg) and micro nutrients (B, Cu, Fe, Mn, Mo, Ni, and Zn) and pH. Additional analyses of protein, ash, crude fibre and fat, and energy are also carried out in feed samples, while physical properties of soil, e.g. texture, bulk density etc., can also be done.

Implications

Soil nutrients are depleting rapidly from over-cropping to feed the increasing population besides social and economic aspirations. Analyses of soil will help to develop a strategy to counteract this problem. One of the setbacks to farmers in this aspect is fertilisers sold at shops are too expensive. But even so, many farmers do not apply fertilisers at all. So students are encouraged to take actions in replenishing soil nutrient by means of locally available organic resources which are mostly underutilised. Through chemical analyses, the fertilising potential of these organic fertilisers can be revealed and farmers could be advised accordingly.

One of the soil fertility assessments we showcased is the nutrient-omission technique, where a crop (sweet corn) is subjected to soil treated with complete NPK and in soil with subsequent omission of each nutrient element. Pots were displayed for visual comparison in plant height, as deficiency symptoms are yet to develop. Students are convinced that complete nutrient supply is required for a healthy plant growth after noticing the tallest plant grown from the complete NPK treatment.

Staff/Student Profile

Full name: Sunil Singh

Post: Lecturer in Biology



Future career: Senior lecturer

Background: Sunil hails from Sigatoka, Fiji and is youngest of five siblings. He grew up on a sugarcane farm and from a young age developed a keen interest in studying diseases of plants. He studied plant parasitic nematodes (microscopic roundworms) for his MSc at USP (Fiji) and PhD at Charles Sturt University (Australia). He has been based at the USP Alafua campus for the past three years teaching Biology. In his spare time he likes gardening, sightseeing and listening to music.

Message: Hard work and humility are two good ingredients for success in Life.

Name: Taniela Kepa Siose

Area of Study: Soil Science

Future career/Goals: Keen to engage in soil-related researches/projects in the region.

Background: Kepa is a Tuvaluan. He was born and lived his teen years in Fiji, but now resides in Tuvalu. He is married with 3 children currently a PhD student at USP Alafua. Besides from studying, he enjoys playing rugby touch.



Message: Work hard. There is no substitute to hard work. Proverbs 25:2 "It is the glory of God to conceal a matter; to search out a matter is the glory of kings."

Tribute Extravaganza

On Friday 7th July 2017 at the USP Alafua main Fale and Malae, the university held a Tribute Extravaganza for Seiuli Tuilagi Allan Alo Alapati Va'ai, to honor his life's work.

Over 1000 people of all ages and races, religious denominations, educational background, socio-political affiliations, economic and cultural orientation came together in celebration of the life and works of Seiuli Tuilagi Allan Alo Alapati Va'ai. The tribute

was a hands on event, designed to inspire participants to creatively celebrate Allan's life through singing, dancing, choreography, poetry, photography, while wearing rainbow colors reflecting the vibrancy of Allan's life and personality.

Contributors to the event range from professors and business owners to politicians and unemployed youth whose only forte is dancing—all of whom were embraced by Allan without prejudice. Co-organized by USP, the Samoa Arts Council, and friends of Allan, the event held at the USP-Alafua main Fale and Malae, featured highlights from Allan's illustrious career, poetic ruminations on Allan's life and artistic contributions to the Pacific and the World. Also was featured performances choreographed by Allan himself, and brought to life by his expressive arts students from Samoa and from the USP-Laucala-based Oceania Dance Theatre group, the latter group being led by the world-renowned dancer and choreographer Peter Espiritu. All musical numbers were performed by the EFKS Vini-Fou Choir, and members of the Pasifika Voices under the guidance of Igelese-Ete, a world class musician whose work featured in big screen favorites including *The Lord of the Rings* and *Moana*. Ete was also the conductor for the America's Cup opening ceremony in 2002 and conductor/composer for the South Pacific Games in Samoa (2007). His most recent work featured in the 3D computer-animated musical fantasy *Moana* (2017).

Allan's life traversed the entire Pacific and a good part of the world, and wherever he went, he was loved and admired for his courage. He leaves behind a global network of friends and colleagues, which he had nurtured over the years. His contributions to the Oceania, the Pacific and USP were monumental, making him a true son of the Pasifika. Ultimately, those who witnessed the tribute walked away from it, richer and with deeper appreciation of the essence of Allan—and hopefully recognize the need to continue his legacy in exactly the same manner as he has lived it.





Journal of South Pacific Agriculture

CALL FOR PAPERS

The Journal of the South Pacific Agriculture (JOSPA) is a peer reviewed agricultural journal which publishes research articles, critical reviews, general papers and short communications in tropical agriculture. It has highly qualified editors and a transparent peer review system which normally takes about 6 to 8 weeks from submission of manuscript to the decision with reviewers' comments. We are inviting contributions relevant to agriculture in the tropics for JOSPA's Volume 20.

Please send manuscripts as email attachments to the editor at sunil.singh@samoa.usp.ac.fj

Deadline for submission has been extended to 31 October 2017. Guide for authors will be provided upon request. Refer to section on Submission of Manuscripts for additional information required on submission.

For technical enquiries, please contact the Managing Editor:

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