

**Sharing Seeds of Wisdom: Decades of Agricultural Sciences
with Jose Cruz**

By

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Legacy Series

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Legacy

I was born and raised on Guam. My formative years of education were completed at San Vicente Catholic School in Barrigada and my freshman year of high school at Father Duenas Memorial School in Mangilao. Thereafter, I moved to Seattle, Washington, to live with my older sister where I attended Roosevelt High School for two years. Then, we moved to Massachusetts where I graduated from Weymouth High School. Shortly after, I obtained my Associate Degree in Mechanical Design Engineering from Wentworth Institute of Technology. While enrolled at Wentworth, I took additional courses in engineering and math at Boston University and Massachusetts Institute of Technology. After graduating from Wentworth Institute of Technology, I moved to Denver, Colorado, and attended Denver University for a year before moving to California and where I obtained an Associate Degree in Chemistry and Physics from Santa Ana College.

In the 1960s, I joined the Air Force and went to basic training in San Antonio, Texas, where my focus was on special weapons. During my second year in the Air Force, I was sent to Tainan, Taiwan, as a weapons inspector and then I volunteered to go to Vietnam and went to Camaron Bay as a weapons specialist. After I spent a year at Langley Airforce Base in Virginia, the oldest Air Force base in the United States, I convinced my colonel to relieve me of my military duty after serving my three years to pursue a doctoral degree in New York. Although I did not complete my doctorate, my engineering career began in New York and continued in California where I worked as a design engineer at ITC Engineer International in San Francisco. I was part of a team that was tasked with converting the manual calculator to a computerized calculator, which was an important innovation at the time.

After 12 years of traveling and working abroad, I returned home to obtain my Bachelor's Degree in Chemistry, General Science, and Mathematics at the University of Guam in 1974. Although I had many employment opportunities on Guam, I chose to work at UOG because I loved the environment. Many new initiatives and opportunities were underway. I availed of an opportunity to obtain my Master's Degree in Soil Science from Colorado State University in 1979. Because I received my master's degree, I was hired as the only qualified chemist to open the soil testing lab at the University of Guam's newest Agricultural Experimental Station. Eventually, I applied for a position as an Extension Agent and continued with that position at different levels.

While working at the Agricultural Experimental Station, I had three roles. Primarily, I was a researcher in soil science. At one point, the U.S. Navy contracted me to help with their equipment for soil and chemical testing when they opened their lab in Fena Dam in Santa Rita. I assisted them with providing information on how to test samples for the water, soil, and plants around the dam as they had a new instrument called Atomic Absorption.

My second role was as an educator on crop production. I communicated with farmers in the community about pesticides and the like and invited them to UOG for lectures. I also conducted soil testing workshops that entailed collecting soil samples from the farms and then taking the samples back to the lab for testing. Soil testing made it possible for farmers to find

out if their plants had enough nitrogen, phosphorus, and potassium (NPK). The plants needed these chemicals and farmers wanted to know how much was needed to raise their harvest to its maximum yield. Thus, I walked them through the entire soil testing process and explained what I observed, and gave recommendations.

Lastly, my third role at the University of Guam was as an instructor of Agriculture 101 (AG101) and related courses. I taught soil science, plant science, and animal science. I was one of the first professors to teach chemistry to nursing majors. Also, I was a part of a team-teaching group of professors that I appreciated because we all contributed our unique perspectives to the course content. The students expressed that they liked being exposed to our different teaching techniques, too. I loved teaching all of my courses. Teaching AG101 was one of my most memorable experiences because of the overwhelming student interest every semester. I lectured and took them out on the field and to the soil lab. I taught them about soil testing for NPK, taught them how to use the instrument, and conduct the analysis. They learned about the soil in the south being acidic and the soil in the north being basic. They saw how the chemical analysis of the soil affected how the farmers applied their fertilizers. Their enthusiasm for learning really inspired me.

I worked at UOG since the 1970s, and even after becoming an Emeritus Professor, I am still called to teach or be a guest speaker in a class. One of the things that I cherish most about my time at UOG is that the work always felt new and exciting. The students were enthusiastic. The people I worked with were supportive and encouraging. I traveled. I went out into the community. I brought the community onto our campus. What really kept me at UOG are all the different experiences and the great people I worked with, taught, and met along the way.

Publications and Reports

Bamba J., J.A. Cruz, O.H. Diambra and R. Muniappan. 1999. Head Cabbage Variety Study for Tipburn Resistance. Papua New Guinea Journal of Agriculture, Forestry, and Fisheries, Vol. 42 No. 1 & 2.

Cruz J. A., T.S. Lali and R. Muniappan. 1997. A Tipburn-Resistant Head Cabbage Variety for Guam. *Micronesica* 30 (2) pp. 435-437.

Marutani, M., R. Muniappan, E. Piclop, J. Cruz, J. Mafnas, B. Alokoa, C. Frear and P. Vander Zaag. 1990. Field Performance of Various Potato (*Solanum* spp.) Cultivars on Guam and Saipan During 1982-1988. Agricultural Experiment Station Technical Report no. 85, College of Agriculture and Life Sciences, University of Guam.

Marutani, M., and J.A. Cruz. 1990. Evaluation of Storage Methods on Storability and Subsequent Field Performance of Potatoes (*Solanum tuberosum* L.) in Guam. *Asian Potato Journal*.

Cruz, J.A. 1989. Yield Response of Head Cabbage Plants to Varying Nitrogen and Potassium Levels. Agricultural Experiment Station Annual Report, College of Agriculture and Life Sciences, University of Guam.

Marutani, M., J.A. Cruz and P. Vander Zaag. 1988. Field Performance of Various Potato (*Solanum* spp.) Cultivars in the Tropics, *HortiScience*, 23: p 721. (Abstract).

Cruz, J.A., 1988. Yield Response of Pole Bean Plants to Varied Nitrogen Levels. Agricultural Experiment Station Annual Report. College of Agriculture and Life Sciences, University of Guam.

Cruz, J.A., 1987. Yield Response of Head Cabbage to Varied Nitrogen Rates. Agricultural Experiment Station Annual Report. College of Agriculture and Life Sciences, University of Guam.

Artero, V.T., J.D. Barcinas, F.J. Cruz, J.A. Cruz, and v, M. Santos. 1986. Guam Planting Calendar. Cooperative Extension Service, Circular No. 3 College of Agriculture and Life Sciences, University of Guam.

Marutani, M., and J.A. Cruz. 1985. Evaluation of Three Potato Cultivars and Evaluation of Seed Potato Storage Methods. Agricultural Experiment Station Annual Report. College of Agriculture and Life Sciences, University of Guam.

Saruwatari, C.A., C.T. Lee and J.A. Cruz, 1985. Adoption and Adaptation of Trickle Irrigation on Guam. Drip/Trickle Irrigation in Action. American Society of Agricultural Engineer Publication 10-85, Volume 1: p. 406.

Cruz, J.A., 1984. Potato Cultivars Selection for Fresh Market Production in Guam. Agricultural Experiment Station Annual Report, College of Agriculture and Life Sciences, University of Guam.

Cruz, J.A., 1984. Yield Response of Sweet Corn to Varied Plant Density. Agricultural Experiment Station Annual Report, College of Agriculture and Life Sciences, University of Guam.

Westfall, D.G., J.A. Cruz, E.E. Rothman, T.J. Doherty, C.M. Richardson, and H.M. Golus. 1981. Soil Testing Laboratory Fertilizer Recommendation Comparisons. Experiment Station Annual Progress Report No. 12, Colorado State University.

Lee, C.T., S. Buzdugan, and J.A. Cruz. 1979. Insect Pests of Cucurbitaceous Crops and Their Control on Guam. Agricultural Experiment Station Technical Report No. 6, College of Agriculture and Life Sciences, University of Guam.

Major Accomplishments in Public and University Endeavors

Member

- UOG Search Committee for Dean of Student Affairs – 1986
The committee elected a chairperson and a secretary and have been meeting weekly.
- UOG Library Committee for RFK Library – 1984/86
- CALS Academic Affairs Committee – 1979
- CALS Master Plan Committee – 1985/86
- CALS Library Committee – 1982/86
The library is a functional branch of UOG RFK Library located at CALS.
- CALS Subcommittee of Ad-hoc Extension Committee for Promotion and Tenure – 1984
The committee proposed changes on the criteria for promotion and tenure for extension agent.
- CALS/CES – Agriculture and Natural Resource (ANR) Advisory Council Committee – 1981
- CALS/AES, CSRS Review Team for Entomology Program – March 23-30, 1984
- CALS/AES, CSRS Review Team for Soil Program – May 7-10, 1986
- CALS/AES, CSRS Review Team for Horticulture Program – February 19-22, 1985

- CALS Search Committee
 1. Plant Pathologist AES - 1985
 2. Entomologist W-84 AES - 1985
 3. Ornamental Horticulturist AES - 1984
 4. Pomologist AES - 1982
 5. Agriculture Engineer AES - 1981
 6. Research Assistant AES - 1981/86
 7. Extension Agent – Marketing CES - 1984
 8. Extension Agent – Crop CES - 1984
 9. Secretary – ANR CES - 1981
 10. 2 Extension Agents – Crop CES - 1979

- CALS/CES Teletip Review Committee for ANR
- CALS/AES Weather Station Maintenance Team – 1985 – present
The team is responsible in the operation of the Weather Station at the Inarajan Research Station.
- CALS/AES Land Use Planning Committee – 1986
The committee makes recommendations on the uses of experiment station land in Ija, Barrigada and Dededo.

- CALS/AES Manuscript Review Committee
 1. “Anatomy of the Parasitic Structure of *Balanophoro indica* and The Interface with The Host Tissue” by Dr. V. Russo – 1984
 2. “Common Weed of Guam” by Dr. C. Lee – 1984
 3. “Analysis on Increasing Crop Production on Guam” by Dr. T. Khamoui – 1984
 4. “Some Chemical and Physical Properties of The Agricultured Soils of Guam” by Dr. J. Demeterio – 1986
 5. “Control of Leafminers and Pod Borers on Yardlong Beans” by Dr. C. Bjork – 1983
 6. “Use of Keipin for Eradication of Bunchy Top Disease in Banana Plantation” by G. Beaver – 1981
 7. “Studies of the Utilization of Cassava as Food and Feed in the Tropics” by A. Palafox -1981
 8. “Guam Soil Test Summary” by Dr. J. Demeterio – 1986

- CALS/AES Research Proposal Review Committee
 1. “Effect of Exogenous Growth Regulators on Growth, Yield, and Quality of Solonaceous and Cucurbit Crops by C. Lee – 1984
 2. “The Effect of Varied Nitrogen, Phosphorus and Potassium Fertilization on the Yield of Selected Vegetables Grown on the Agricultural Soil of Micronesia” by J. Demeterio – 1982
 3. “Promote Flowering and Dwarfing of Winged Bean with Plant Growth Regulators by Dr. C. Lee – 1984
 4. “Evaluation and Breeding Papaya Cultivars for Guam and Other Micronesian Island” by Dr. R. Rajandaran – 1986
 5. “Potential of Potato in Guam, Saipan, and other Micronesia” by J.A. Cruz – 1983
 6. “Effect of Cultural Production Practices on Diseases Incidence and Severity in Bell Pepper” by Dr. V. Russo – 1982

- CALS/CES Review Committee for Extension Flyers – 1986
 1. “Fruit Piercing Moth”
 2. “Flame Tree Looper”
 3. “Tangantangan Psylid”
 4. “Spiraling Whitefly”

- Planned Action New Introduction Committee (PANIC) – 1984 – present
The Committee makes recommendation on action to be taken whenever an introduction of new pest established on the island.
- United State Department of Interior (USDI) – Bureau of Reclamation (USDI) Water Resources Development Study Team – 1983/85

- Environmental Protection Agency (EPA)
Reviewed document on *Soil Erosion and Sediment Control Regulations and Erosion and Sediment Control Guide*. Prepared by Geo-Engineering and Testing for the Guam EPA. – 1984
- Department of Agriculture (DOA)
Reviewed document on Regulations for *Importing Plants and Plants Products into the territory of Guam* – 1985.
- United State Department of Agriculture (USDA), Guam Soil Conservation Service (SCS) – 1984-present
- Public Market “Y Mahen Y Islas” project – 1983
- CETA – HRD – 1981
Agricultural Training
- Rehabilitation Center – 1981
Vegetable Garden
- Department of Correction – 1983
Vegetable Farm
- Farm Cooperative – 1981-present
- Navy PACDIV Entomologist – 1979
Assisted the navy entomologist with coconut beetle damaging royal palm at COMNAVMAR Headquarter “Flag Circle.”

Agriculture Materials Display

- Farm Tour – 1982
- UOG Charter Day – 1983/84/85/86
- World Food Day – 1982/85
- Malojloj Agricultural Fair – 1983/85
- Agricultural State Fair, Fiestan Guam – 1986
- Home Economic Christmas Display (fruit and vegetables) – 1985/86

Judge

- Senior Citizen Cultural Fair - 1983
- Agricultural State Fair, Fiestan Guam - 1986
- Island Wide Science Fair – 1982/83

Collaborator

- NifTAL Project – International Network of Legume Inoculation Trials *INLIT) – 1982
Project Leader – Dr. B. Davis, Maui, Hawaii
Collected and sent soil samples to Dr. Davis in Maui, Hawaii.

- International Benchmark Sites Network for Agrotechnology Transfer (IBSNAT) – 1984
Project Leader – Dr. G. Uehara, University of Hawaii
Contributed on the revision of the second approximation of the manual “Experimental Design and Collecting the Minimum Data Set for Agrotechnology Transfer” procedures for IBSNAT collaborator, at the Maui meeting.

- International Potato Center (CIP) Region VII – 1983/84/85
Project Leader – Dr. Peter Vander Zaag, (Southeast Asia) Manila, Philippines
Cooperated in conducting research study on the “Response of Potatoes to Hot Environments of the Pacific” and provided CIP scientists with raw data for analysis.