



รายงานกิจกรรมความร่วมมือ ระหว่าง

World Vegetable Center และศูนย์วิจัยและพัฒนาพืชผักเขตร้อน (TVRC) ภาควิชาพืชสวน คณะเกษตร กำแพงแสน มหาวิทยาลัยเกษตรศาสตร์

ผู้รายงาน: อ.ดร.ชัชมาศ กาญจนอุดมการ หัวหน้าศูนย์วิจัยและพัฒนาพืชผักเขตร้อน

รอบการรายงาน: พฤศจิกายน 2565 - กันยายน 2567

สรุปกิจกรรม

1. กิจกรรมการฝึกอบรม

ฝึกอบรมเชิงปฏิบัติการ เรื่องการจัดการเมล็ดพันธุ์ จากเมล็ดสู่เมล็ด ภายใต้โครงการเมล็ดคืนถิ่น จัดขึ้น
 เมื่อวันที่ 16 พฤศจิกายน 2566 มีผู้เข้าร่วมฝึกอบรม 56 คน (เอกสารแนบ 1)



• ฝึกอบรมการจัดการข้อมูลสำหรับหน่วยเชื้อพันธุกรรม ภายใต้โครงการเมล็ดคืนถิ่น จัดขึ้นเมื่อวันที่ 20 กันยายน 2567 มีผู้เข้าร่วมฝึกอบรม 23 คน โดยได้รับความอนุเคราะห์ผู้เชี่ยวชาญจาก WorldVeg มาให้การฝึกอบรม







2. กิจกรรมการประชาสัมพันธ์หน่วยงานในมหาวิทยาลัย

• KU-WorldVeg Scientist Day จัดขึ้น ณ อาคารศูนย์มหาวิทยาลัยเกษตรศาสตร์ วิทยาเขตกำแพงแสน วันที่ 7 พฤศจิกายน 2565 ประกอบด้วยนักวิจัยจาก 19 ประเทศ จำนวน 111 คน จาก WorldVeg และ อาจารย์ และนักวิจัย 53 คน จากมหาวิทยาลัยเกษตรศาสตร์ จากหลากหลายหน่วยงาน เพื่อเป็นการแลกเปลี่ยนความรู้ และสร้างเครือข่ายงานวิจัยให้กับนักวิจัยและอาจารย์ทั้งสองหน่วยงาน



• อ.ดร.ชัชมาศ กาญจนอุดมการ, หัวหน้าศูนย์วิจัยและพัฒนาพืชผักเขตร้อน เป็นตัวแทนจาก มหาวิทยาลัยเกษตรศาสตร์ ร่วมเป็นวิทยากร งาน Vegetable Science Day ในเวทีเสวนาเรื่อง Rescuing





biodiversity to boost nutrition ad climate resilience จัดขึ้น ณ WorldVeg Headquarter ประเทศ ไต้หวัน วันที่ 2 พฤศจิกายน 2566 โดยทาง WorldVeg ให้การสนับสนุนค่าเดินทางและที่พัก



• KU-WorldVeg Bulletin (เอกสารแนบ 2, 3) ทีมงานมหาวิทยาลัยเกษตรศาสตร์ ร่วมกับ WorldVeg จัดทำ bulltin เพื่อเผยแพร่ความสัมพันธ์ระหว่าง 2 หน่วยงาน และประชาสัมพันธ์กิจกรรมความร่วมมือที่เกิดขึ้น โดยได้จัดทำ Bulletin ฉบับแรก เดือนพฤศจิกายน 2565 (เอกสารแนบ 2) และฉบับที่ 2 เดือน ตุลาคม 2566 (เอกสารแนบ 3) คาดว่าฉบับที่ 3 จะออกเผยแพร่เดือน พฤศจิกายน 2567





นิทรรศการ "กำแพงแสนแดนอนุรักษ์ สร้างพันธุ์ผัก รับภาวะโลกรวน" ของศูนย์วิจัยและพัฒนาพืชผักเขตร้อน (TVRC) ร่วมกับศูนย์พืชผักโลก (World Veg) ในงานเกษตรกำแพงแสน 1-11 ธันวาคม 2566 ครั้งที่ 26 WorldVeg สาธิตและให้ฝึกปฏิบัติการเปลี่ยนยอดผักสำหรับผู้ที่สนใจ และงานด้าน Integrated Pest Management โดยใช้พืชกับดัก และการทำกับดักแมลง



• งานเกษตร บางเขน 2567 TVRC ร่วมแสดงนิทรรศการแสดงความหลากหลายของพืชผักเขตร้อน







• พิธีต้อนรับเมล็ดพันธุ์ กิจกรรมภายใต้โครงการเมล็ดคืนถิ่น เพื่อเพิ่มความตระหนักถึงการอนุรักษ์ เชื้อพันธุกรรมผัก การนำมาใช้ให้เกิดประโยชน์ และเพิ่มความหลากหลายทางพันธุกรรมของ พืชผักเขตร้อน



- 3. กิจกรรมเสริมสร้างศักยภาพบุคลากรและองค์กร
 - บุคลากร (อ.ดร.ชัชมาศ กาญจนอุดมการ, หัวหน้าศูนย์วิจัยและพัฒนาพืชผักเขตร้อน) ร่วมฝึกอบรม
 International training course to enhance the conservation and sustainable use of Asian vegetable biodiversity ระหว่างวันที่ 8-12 เมษายน 2567 ณ ประเทศไต้หวัน โดยค่าใช้จ่ายทั้งหมดทาง
 WorldVeg เป็นผู้ให้การสนับสนุน











ร่วมกิจกรรม training on biodiversity and agriculture global policy frameworks จัดโดย The Global Crop Diversity Trust (Crop Trust) and the FAO Secretariat of the International Treaty on Plant Genetic Resources for Food and Agriculture (FAO International Treaty) วันที่ 19-21 มิถุนายน 2567 ณ โรงแรมสุโกศล กรุงเทพ และเยี่ยมชม genebank กรมวิชาการเกษตร เพื่อสร้างเครือข่ายความร่วมมือด้านการอนุรักษ์พันธุ์พืชในอนาคต



- 4. กิจกรรมวิจัยและพัฒนาวิชาการ
 - โครงการเมล็ดคืนถิ่น ได้รับเงินสนับสนุนจาก WorldVeg USD35,000 คาดว่าจะเป็นโครงการ ต่อเนื่องเพื่อสนับสนุนงานด้านการอนุรักษ์เมล็ดพันธุ์









Summary report on Germplasm Management Workshop from Seed to Seed

Workshop Objectives:

- 1. To provide participants with an in-depth understanding of plant germplasm management principles and practices.
- 2. To equip participants with practical skills and tools for effective germplasm collection, preservation, and utilization.
- 3. To facilitate knowledge sharing and networking among participants interested in plant germplasm management.

Staff:

 Dr Chutchamas Kanchana-udomkan 	Project leader
2. Assist Prof Dr Surapong Dumrongkittikul	Instructor
3. Mr Akrachai Somkul	Instructor
4. Miss Wasita Rodpoom	Coordinator
5. Miss Boonnada Srikumpueng	Staff
6. Miss Waraporn Sinsatapornpong	Staff
7. Miss Wannisa Pooldech	Staff
8. Mr Anuchai Wongpraneekul	Staff
9. Mr Tassanai Chaipeth	Staff
10.Miss Punyapa Tantong	Staff
11. Miss Papapin Prasertsilp	Staff

Venue: TVRC, Kasetsart University, Kamphaeng Saen, Nakhon Pathom

Date: 16 November 2023

Time: 08.00 - 17.00









Program:

. rogium		
Time	Activity	Key person
08:00 - 08:30	Registration	Miss Wasita Rodpoom, KU
08:30 - 08:40	Welcome and introduction TAsVI project	Dr Chutchamas Kanchana-udomkan, KU
08.40 - 08.45	Opening remarks	Mr Chang Chun-fu, TECO
08.45 - 09.00	Opening remarks	Ms Delphine Larrouse, WorldVeg
08:45 - 09:15	Introduction to Plant Germplasm Management: collection, conservation and utilisation.	Assist Prof Dr Surapong Dumrongkittikul, KU
09:15 - 10:30	Germplasm Collection Strategies and Techniques from seed to seed	Mr Akrachai Somkul, TVRC
10:30 - 11:00	Refreshment Break	
11:00 - 12:30	Germplasm Preservation and Storage	Mr Akrachai Somkul
12:30 - 13:30	Lunch break	
13:30 - 15:00	Workshop: Seed purity, moisture content and germination test.	Mr Akrachai Somkul, Assist Prof Dr Surapong Dumrongkittikul and the team
15:00 - 15:30	Refreshment Break	
15:30 - 16:30	Continue Workshop: Seed purity, moisture content and germination test.	Mr Akrachai Somkul, Assist Prof Dr Surapong Dumrongkittikul and the team
16:30 - 17:00	Conclusion and Certification	Dr Chutchamas Kanchana-udomkan





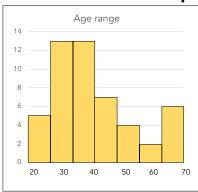


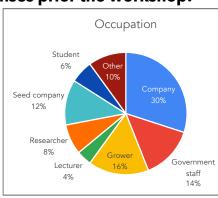


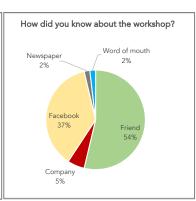
Number of registered people: 61 people

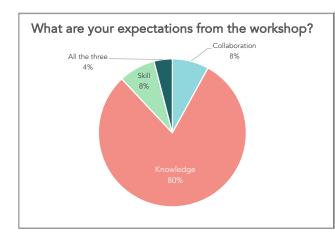
Number of participants: 56 people (27 female, 29 male)

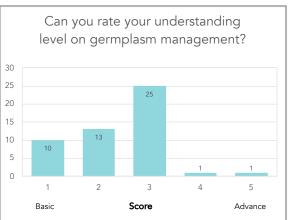
Questionnaires and responses prior the workshop:















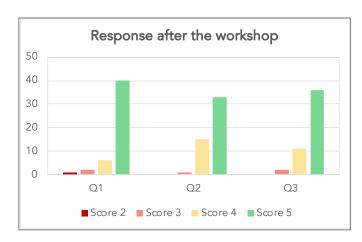


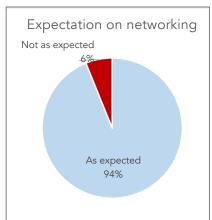


Questionnaires and responses after the workshop:

List	Details	Mean score (out of 5)
Q1	How would you rate the important of biodiversity and germplasm collection?	4.73
Q2	How would you rate your understanding on the laboratory protocol of seed management?	4.65
Q3	How would you rate your knowledge and skill on seed management after the workshop?	4.69
Q4	Did you meet your expectation on network development?	94% Yes 6% No ^{1/}

^{1/} the participants who were not satisfied with the network development, provided comments on the duration of the workshop, and suggested to organise a loner and more advanced one.









KU-WORLDVEG Bulletin



From left to right: Pepijn Schreinemachers, Delphine Larrousse, Chongrak Wachrinrat, Marco Wopereis, Buncha Chinnasri

Over four decades of collaboration between Kasetsart University and the World Vegetable Center

IN THIS ISSUE

KU - WorldVeg History

Our Facilities

Our Responsibilities

Our Shared Vision



Kasetsart University (KU), Thailand's first institution of higher education in agriculture was established in 1943. The University's main campus is located in Bangkhen, Bangkok. To support and expand the education in agriculture, science and engineering: KU founded other campuses in four more provinces: Kamphaeng Saen Campus in Nakhon Pathom (1978); Chalermphrakiat Sakhon Nakhon Campus in Sakhon Nakhon (1996); Suphan Buri Campus in Suphan Buri (1996); and Sriracha Campus in Chonburi (1999).

The World Vegetable Center (previously known as the Asian Vegetable Research and Development Center - AVRDC) was established in 1971 with headquarters in Taiwan. It is now the world's leading international non-profit institute for vegetable research and development founded by several governments, including the Royal Thai Government. Today the work of the World Vegetable Center (WorldVeg) spans the globe.

November 2022







Signature of the first MOA between KU and WorldVeg on November 10, 1992 by Professor Dr Kamphol Adulavidhaya and Dr Emil Q. Javier

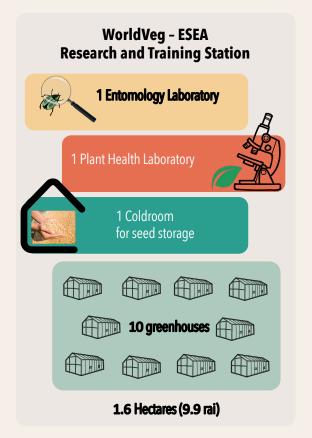
In 1980, KU was delegated the authority to represent Thailand's membership in the World Vegetable Center. Two years later, the Royal Thai Cabinet approved the Thailand Outreach Program (TOP) with the cooperation of three parties: the Thai government, Asian Development Bank (ADB) and the World Vegetable Center. The University's President also serves on the Center's Board of Directors.

As KU has always aspired to accelerate progress in vegetable technology and to expand activities including collaboration with both local and international scientists, the Tropical Vegetable Research Center (TVRC) was established at Kamphaeng Saen in 1992. TVRC has worked closely with the World Vegetable Center. TVRC is responsible for tropical vegetable germplasm collection, characterization, conservation, research, development of new varieties, technology of vegetable and seed production especially in Thailand.

The Thailand Outreach Program steadily expanded and evolved into a larger, region-wide program called the Regional Training Program (RTP). The combined programs were upgraded to a regional center status which was renamed AVRDC - Asian Regional Center (ARC) based on the first Memorandum of Agreement (MOA) between KU and WorldVeg (then still called AVRDC) signed on November 10, 1992, three decades ago.

On a geographically strategic area at KU Kamphaeng Saen campus, WorldVeg Research and Training station for East and Southeast Asia (ESEA) includes office buildings, laboratories and a cold room storage for vegetable germplasm conservation. The facilities were constructed next to TVRC with the financial support from the Swiss government, with later additions constructed with the support from the Taiwan government. Meanwhile, the WorldVeg regional administration office is situated at KU Bangkhen Campus in Bangkok. As a regional center, it has the mandate to conduct programs and activities in Asia, particularly in Southeast Asia.









The name "AVRDC - Asian Regional Center (ARC)" was changed to "World Vegetable Center - East and Southeast Asia (ESEA)" in 2009.

Later on February 15, 2016 the Memorandum of Understanding (MOU) between KU and WorldVeg was renewed for another 25 years. The fruitful working partnership has been attested by numerous significant research and development projects together with partners in Thailand and the region that contribute to the global society.



Members of the KU-WorldVeg working group with WorldVeg Director General Marco Wopereis and KU President Chongrak Wachrinrat in the middle

The responsibilities and areas of collaboration stated in the MOU signed in 2016 include:

- 1. Deploy scientific staff from a multi-disciplinary team to address specific needs of the vegetable sector in Thailand and the region
- 2. Conduct research on vegetable crops of unique interest to the region
- 3. Conduct research and develop technologies to ensure vegetable production systems are efficient and resilient to changes such as climate or market demands
- 4. Conduct research and develop technologies to ensure vegetable value chains are sustained, that they guarantee profits and environmental integrity

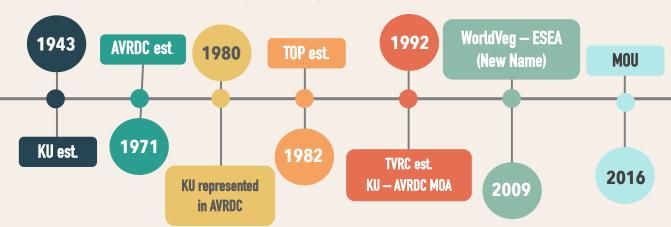
- Report evidence-based results in scientifically respected outlets and through targeted media channels
- Build international experience of KU research staff through engagement in international R&D projects, and organize training courses, seminars and workshops on topics of interest in the region
- 7. Facilitate the exchange of improved and unique germplasm, information vegetable and technologies among the countries in the region
- Create measurable impact by increasing nutrition and incomes derived from flourishing vegetable sector

^{*}this is a summary of the full list of responsibilities and areas of collaboration mentioned in the MOU





A Long History of Collaboration



A shared vision

KU is "a university for learning and research to create global innovations for sustainable development based on the Knowledge of the Land" (KU vision for 2027). The Faculty of Agriculture in particular aims to engage in agricultural research that contributes to the development of a sustainable economy and benefits the nation and society in general.

WorldVeg aims to "promote healthier lives and more resilient livelihoods through greater diversity in what we grow and eat" (WorldVeg mission). The Center conducts research, builds networks, and carries out training and promotion activities to unleash the nutritional and economic potential of vegetables in low- and middle-income countries, inclusively and sustainably.

Heading in the same direction, both have demonstrated commitment to collaborate in implementing a number of programs to meet the growing agricultural, economical, and nutritional needs of Thailand and the region.



SPOTLIGHT

Delphine Larrousse

Regional Director for East and Southeast Asia (ESEA)



Delphine represents WorldVeg in Thailand on behalf of the Director General, supporting WorldVeg's vision and mission. In this capacity, she seeks to nurture and expand the successful collaboration between WorldVeg and Kasetsart University, a very unique partnership for several decades.

- Strategic communications
- Project design and management
- Partnership development
- Intercultural management.

Her expertise is founded on 15 years of experience in designing and managing food and agriculture projects with a large network of research institutions, governments, NGOs, in Asia, Africa and Latin America. Her interests and efforts focus on the transformation towards more resilient, sustainable and inclusive food systems.

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KU-WORLDVEG Bulletin

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Homecoming seed - TAsVI project

Upcoming event

Spotlight

Message from the Regional Director

The year 2023 holds special significance for both Kasetsart University (KU) and the World Vegetable Center (WorldVeg) as we celebrate the 80th and 50th anniversaries of our respective organizations. It is indeed an honor to have participated in KU's celebration earlier this year, alongside other academic partners, at the KU Academic Forum.

This is a moment for us to reflect upon and collaborative efforts acknowledge the and achievements of our institutions. Over the past decades, KU and WorldVeg have engaged in joint research activities spanning the entire value chain of several primary and staple crops in Thailand and the region, including legumes (mungbean, soybean), cucurbits (pumpkin, loofah, bitter gourd), and solanaceous vegetables (tomato, pepper, eggplant). These endeavors have encompassed breeding, variety trials, the selection of improved lines, seed production, plant protection, and biotechnological research. Additionally, our collaboration has extended to policy analysis, impact assessments, and studies related to the food environment and healthy diets.



Sowing seeds, meeting needs



It was a source of great satisfaction for us to coorganize several global events last year, such as the KU-WorldVeg Scientists Day, which gathered over 100 participants from Africa and Asia, as well as the International Vegetable Training Course (IVTC) on postharvest management.

This year, WorldVeg, in partnership with the Tropical Vegetable Research Center (TVRC), KU are working closely on the new Taiwan-Asia Vegetable Initiative (TAsVI), highlighted in this bulletin. We are extremely pleased that KU executives will be joining the 50th Anniversary celebrations at the WorldVeg Headquarters in Taiwan in November this year and KU experts will be attending the international workshop on germplasm management in 2024.

The enduring relationship between KU and WorldVeg has consistently yielded mutual benefits for both institutions and the wider community. We eagerly anticipate the continuation of this fruitful collaboration.

Delphine LarrousseDirector - Global Engagement,
Regional Director East andSouth East Asia,
World Vetetable Center











KU Academic Forum: In Celebration of the 80th Anniversary of Kasetsart University on February 2, 2023

Id Vegetable Center Scientists Day t Undersoy, Jamohaling Den Jamies

The Kasetsart University (KU)-WorldVeg Scientists Day, November 7, 2022.



39th International Vegetable Course (IVTC) on postharvest management, November 21-25, 2022

Microplastics uptake in vegetables



This year, Dr. Weerasin Sonjaroon, School of Integrated Science, KU and his team are conducting a study for WorldVeg on the absorption of microplastics in vegetables grown in or near Bangkok to better understand their accumulation in vegetables, which will be carried out at the Artificial Light Building of Kasetsart Agricultural and Agro-Industrial Product Improvement Institute (KAPI).

Funded by CGIAR, the study is part of the Resilient Cities Project, managed by Dr. Pepijn Schreinemachers, WorldVeg Flagship Leader for Enabling Impact and Healthy Diets. The study seeks to investigate the safety of food produced in urban environments.

It is expected that by 2050, more than two in three people on the planet will live in an urban environment, including over 5.5 billion in low- and middle-income countries. The agrifood sector will thus play a central role in humanity's transition to an urbanized world. Local and global agrifood systems need to adapt to feed and nourish expanding urban populations, mitigate human and environmental health risks, and create economic opportunities for the urban poor. Securing productive, green, and healthy cities with thriving populations has since become a global priority.

Presently, there is limited research on microplastics in plants in Thailand. The insights into the physiology of vegetable absorption of microplastics will be the first essential step towards mitigating the microplastic issue within urban agrisystems.

October 2023









In March 2023, Dr. Maarten van Zonneveld, Genebank Manager and Ms. Somchit Pruangwitayakun, Vegetable Research and Training Officer, WorldVeg – ESEA met with Dr. Choochart Wattanawan, Director of Horticulture Research Institute, Department of Agriculture (DOA), Director Kunyaporn Pipithsangchan of the DOA Genebank and Dr. Surapong Dumrongkittikule, TVRC Director and Dr. Chutchamas Kanchana-udomkan, Project Leader, *TAsVI* - *Thailand, to introduce the project for the first time.*

With support from the Taiwan Ministry of Foreign Affairs, WorldVeg has launched "Taiwan-Asia Vegetable Initiative" (TAsVI) to assist Southeast Asian countries in rescuing, safeguarding, and conserving vegetable biodiversity.

TAsVI is a three-year project that intends to improve international cooperation in order to rescue and protect Asia's vegetable biodiversity while boosting climate resilience, human health, and nutrition for both the present and the future generations.

"TAsVI plans to strengthen capacity and knowledge sharing among national genebanks, starting in Southeast Asia, to improve the collection, conservation, and utilization of vegetable biodiversity," said Dr. Maarten van Zonneveld, WorldVeg Genebank Manager. "Establishing a collaborative platform among national genebanks in Southeast Asia, Taiwan, WorldVeg, and the Global Crop Diversity Trust will be a good start."

These seeds were collected in the 1990s and 2000s by WorldVeg and its partners from 14 countries in Asia: Vietnam, Indonesia, the Philippines, Thailand, Malaysia, Myanmar, Lao, Cambodia, Pakistan, India, Bangladesh, Sri Lanka, Nepal, and Bhutan.

"WorldVeg has global responsibility for the collection, evaluation, conservation, and distribution of vegetable germplasm. These precious resources are maintained for the benefit of farmers and agricultural research throughout the world as international public goods," said Dr. Marco Wopereis, WorldVeg Director General.

Now, TAsVI has clearly taken root in Thailand as WorldVeg along with KU firmly started the project. TVRC of KU will be the leader in receiving the seeds as well as promoting the use.

A workshop for germplasm management as well as a homecoming seed ceremony are in preparation in Thailand.

Taiwan-Asia Vegetable Initiative (TAsVI)







Mungbean - an increasingly important crop for better health and more climate resilient cropping systems in the tropics

International Mungbean Congress

Kasetsart University, Kamphaeng Saen, Thailand 12th - 14th March 2024



and rapidly spreading to other parts of the world. Owing to its short duration nature (55-60 days maturity) it is an ideal rotation crop in cereal based cropping systems. Mungbean seeds are rich in protein, fiber, antioxidants, and phytonutrients.

Topics to be covered:

- Mungbean vision 2030
- Farming systems intensification in Asia and sub Saharan Africa
- Updates on: genetics and breeding; physiology, nitrogen fixation
- Nutrition, new food products, lessons to learn from South Asia food industries, Agribusiness opportunities
- Mungbean value chain, challenges and opportunities
- Workshop on mapping future research priorities









Email: ramakrishnan.nair@worldveg.org

When talking about an increasingly important crop for better health and more climate-resilient cropping systems in the tropics, what comes to your mind? Mungbean for WorldVeg! We're excited to share that the 2024 International Mungbean Congress has been scheduled in Thailand from March 12-14. 2024

Be sure to mark your calendars and save these dates for what promises to be a significant event!

For more information, please contact

Dr. Ramakrishnan M. Nair WorldVeg Global Plant Breeder - Legumes ramakrishnan.nair@worldveg.org

Associate. Prof. Dr. Prakit Somta Department of Agronomy, Faculty of Agriculture at Kamphaeng Saen, KU Prakit so@ku ac th







New cultivars of cherry tomatoes and chilli developed by TVRC

SPOTLIGHT





Tropical Vegetable Research Center (TVRC) Department of Horticulture, Faculty of Agriculture at Kamphaeng Saen Kasetsart University, Kamphaeng Saen Campus, Nakhon Pathom

Akarachai is truly a master of tropical vegetables and herbs. When it comes to planting, genetic improvement, harvesting, and seed storage management, he has a class of his own. He received a distinguished civil servant award for academic support (professional, administrative, and specialized groups) from Kasetsart University in 2020. Over the impressive 30 years of his career as a trainer, countless or tens of thousands of farmers, students, agriculturists, and educational institutes on vegetable production technology honed their skills from him.

Tomato Resistant to Tomato Yellow Leaf Curl Virus (TYLCV)

- Seeda-Thip #5, #6, KUKPS #1-KUKPS #20
- Hybrid Tomato Cherry Thip KUKPS #1 and #2

Chilli Pepper

Pepper TVRC 365, Hot Pepper TVRC 758, Hybrid Hot Pepper Daeng Akara KUKPS #1-KUKPS #3 resistant to anthracnose disease

As he will retire this year, Archarn Akarachai will be deeply missed by WorldVeg Team and so many aspiring students and will always be remembered for his long and immense contribution and dedication to educating everyone.

Connect with Akarachai: Akarachai@gmail.com



Connect with the World Vegetable Center East and Southeast Asia:



www.worldveg.org





WorldVegThailand



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Connect with Kasetsart University



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