

# Curriculum Vitae (as of June, 2024)



## Siva K Balasundram, PhD

Professor (Precision Agriculture) & Head

Department of Agriculture Technology  
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### ACADEMIC QUALIFICATIONS

(Degree | Thesis Title | Awarding Institution | Year)

- **Doctor of Philosophy** in Soil Science (Precision Agriculture) | Strategies for Precision Oil Palm Management in South Sumatera, Indonesia | University of Minnesota, USA | September, 2003
- **Master** of Agricultural Science (Soil Chemistry) | Use of Palm Oil Mill Effluent and Peat to Reduce Ammonia Volatilization from Fertilizer Urea | Universiti Putra Malaysia | May, 1997
- **Bachelor** of Agricultural Science (Agronomy) | Effect of Repeated Application of Selected Herbicides on the Growth and Physiology of Immature Oil Palm (*Elaeis guineensis*) | Universiti Putra Malaysia | July, 1994

### AREA OF EXPERTISE

(Field | Scope | Concentration)

Agricultural Science | Agricultural Information System and Technology | Precision Agriculture

### CURRENT APPOINTMENTS

(Designation | Institution | Year)

#### International

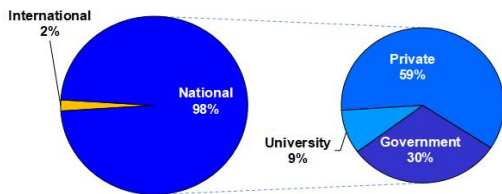
- **Country Representative** | International Society of Precision Agriculture (ISPA) | 2011-todate
- **Country Representative** | Asia-Pacific Economic Cooperation (APEC) Agricultural Data Union | 2018-todate
- **Member of the Executive Committee** | Asian Conference on Precision Agriculture (ACPA) Conference Series | 2019-todate

#### University

- **Head** | Department of Agriculture Technology, Faculty of Agriculture, Universiti Putra Malaysia | 2021-27
- **Research Associate** | Smart Farming Technology Research Center (SFTRC), Faculty of Engineering, Universiti Putra Malaysia | 2020-2025

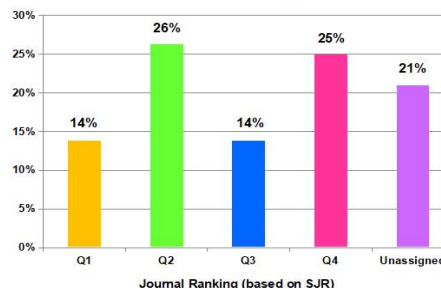
## Summary

#### Research Grant | n = 14



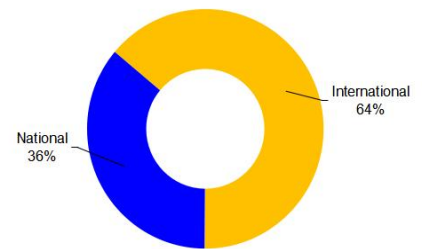
Total value: RM1,428,202

#### Journal Publication | n = 80

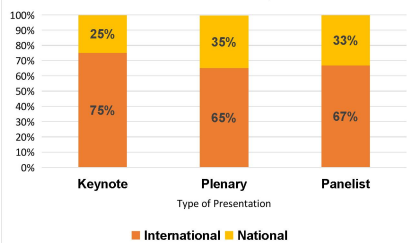


Journal Ranking (based on SJR)

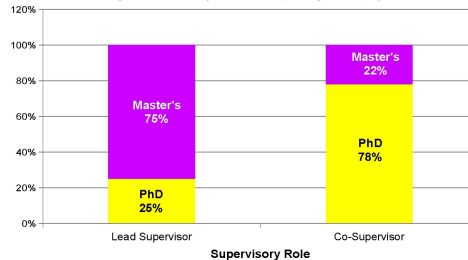
#### Conference/Seminar/Workshop Proceedings | n = 45



#### Technical Presentation | n = 48

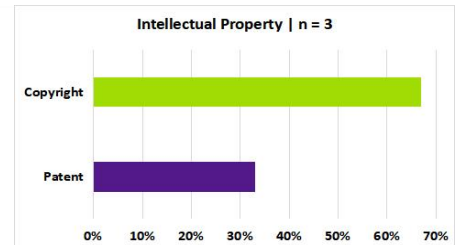


#### Postgraduate Supervision (completed) | n = 25



Supervisory Role

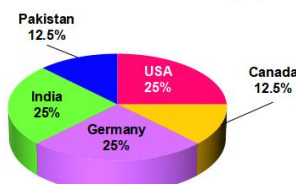
#### Intellectual Property | n = 3



#### Consultancy | n = 11



#### International Collaboration & Linkage | n = 8



#### Industry Outreach | n = 15



## RESEARCH GRANT (recent 5 years)

(Project Title | Role | Funding Agency | Amount | Year | Status)

1. Assessment of nutrient use efficiency and water use efficiency in durian using data-driven approaches | **Principal Investigator** | Top Fruits Sdn. Bhd. | RM180,000 | 2022-2025 | Ongoing
2. Enhancement of durian growth and management of *Phytophthora palmivora* diseases by lead microorganism characterized from soil and root microbiome **Co-Principal Investigator** | Top Fruits Sdn. Bhd. | RM180,000 | 2022-2025 | Ongoing
3. Crop and soil sensing in rice using a precision agriculture approach | **Principal Investigator** | Collaborative Research in Engineering, Science and Technology (CREST) | RM160,000 | 2020-2023 | Completed
4. Enhancing oil palm stress detection and monitoring capability using drone technology | **Principal Investigator** | Saffron Systems Pte. Ltd., Singapore | S\$10,000 (equiv. RM30,406) | 2020-2021 | Completed
5. Development of non-invasive assessment protocol for orange spotting disease in oil palm using remote sensing and artificial neural network | **Principal Investigator** | Universiti Putra Malaysia | RM42,300 | 2018-2019 | Completed

## JOURNAL PUBLICATION (recent 5 years)

1. RAD, A.K., R.R. SHAMSHIRI, A. NAGHIPOUR, S.O. RAZMI, M. SHARIATI, F. GOLKAR and **S.K. BALASUNDRAM**. 2022. Machine learning for determining interactions between air pollutants and environmental parameters in three cities of Iran. *Sustainability*, 14(13): 8027. [Q2]
2. AHAMED, M.S., M. SULTAN, R.R. SHAMSHIRI, M.M. RAHMAN, M. ALEEM and **S.K. BALASUNDRAM**. 2022. Present status and challenges of fodder production in controlled environments: A review. *Smart Agricultural Technology*, 3:100080.
3. AZIZ, M., M. KHAN, N. ANJUM, M. SULTAN, R.R. SHAMSHIRI, S.M. IBRAHIM, **S.K. BALASUNDRAM** and M. ALEEM. 2022. Scientific irrigation scheduling for sustainable production in olive groves. *Agriculture (Switzerland)*, 12(4): 564. [Q2]
4. RAD, A.K., **S.K. BALASUNDRAM**, S. AZIZI, Y. AFSHARYZAD, M. ZAREI, H. ETESAMI and R.R. SHAMSHIRI. 2022. An overview of antibiotic resistance and abiotic stresses affecting antimicrobial resistance in agricultural soils. *International Journal of Environmental Research and Public Health*, 19(8): 4666. [Q2]
5. JAMAL, S.A., **S.K. BALASUNDRAM**, M.H.A. HUSNI and C.B.S. TEH. Response of potential indicators of soil quality to land-use and land-cover change under a mediterranean climate in the region of Al-Jabal Al-Akhdar, Libya. 2021. *Sustainability*, 14(1): 162. [Q2]
6. BALANAGOUDA, P., S. SRIDHARA, S. SHIL, V. HEGDE, M.K. NAIK, H. NARAYANASWAMY and **S.K. BALASUNDRAM**. 2021. Assessment of the spatial distribution and risk associated with fruit rot disease in *Areca catechu* L. *Journal of Fungi*, 7(10): 197. [Q1]
7. RAD, A.K. R.R. SHAMSHIRI, H. AZARM, **S.K. BALASUNDRAM** and M. SULTAN. 2021. Effects of the COVID-19 pandemic on food security and agriculture in Iran: A survey. *Sustainability*, 13: 10103. [Q2]
8. **BALASUNDRAM, S.K.** and Y.M. CHONG. 2021. Use of selected spectral ratios to assess the response of pineapple to potassium nutrition. *Journal of Smart Science and Technology (UiTM)*, 1(1): 16-22.
9. NASER, A.G., **S.K. BALASUNDRAM**, N.M. NAWI, M.K. UDDIN and M.I. SARIPAN. 2021. Remote sensing agricultural applications in integrated pest management in Malaysia: A literature review. *Design Engineering (Toronto)*, 2021(04): 1730-1737. [Q4]
10. REZVANI, S.M., H.Z. ABYANEH, R.R. SHAMSHIRI, **S.K. BALASUNDRAM**, V. DWORAK, M. GOODARZI, M. SULTAN and B. MAHNS. 2020. IoT-based sensor data fusion for determining optimality degrees of microclimate parameters in commercial greenhouse production of tomato. *Sensors*, 20(22), 6474. [Q2]
11. JAMAL, S.A., **S.K. BALASUNDRAM**, M.H.A. HUSNI and C.B.S. TEH. 2020. Detecting and analyzing land use and land cover changes in the region of Al-Jabal Al-Akhdar, Libya using time-series Landsat data from 1985 to 2017. *Sustainability*, 12: 4990. [Q2]
12. YADEGARI, M., R.R. SHAMSHIRI, A.R.M. SHARIFF, **S.K. BALASUNDRAM** and B. MAHNS. 2020. Using SPOT-7 for nitrogen fertilizer management in oil palm. *Agriculture (Switzerland)*, 10(4): 10040133. [Q2]
13. SHAMSHIRI, R.R., E. VAN HENTEN, I. BOJIC, **S.K. BALASUNDRAM**, V. DWORAK and C. WELTZIEN. 2020. Model-based evaluation of greenhouse microclimate using IoT-sensor data fusion for energy efficient crop production. *Journal of Cleaner Production*, 263: 121303. [Q1]
14. SHAMSHIRI, R. R., B. IBRAHIM, **S.K. BALASUNDRAM**, S. TAHERI and C. WELTZIEN. 2019. Evaluating system of rice intensification using a modified transplanter: A smart farming solution toward sustainability of paddy fields in Malaysia. *International Journal of Agricultural and Biological Engineering*, 12(2): 54-67. [Q1]
15. GOLHANI, K., **S.K. BALASUNDRAM**, G. VADAMALAI and B. PRADHAN. 2019. Estimating chlorophyll content at leaf scale in viroid-inoculated oil palm seedlings (*Elaeis guineensis* Jacq.) using reflectance spectra (400-1050 nm). *International Journal of Remote Sensing*, 40(19): 7647-7662. [Q1]
16. GOLHANI, K., **S.K. BALASUNDRAM**, G. VADAMALAI and B. PRADHAN. 2019. Selection of a spectral index for detection of orange spotting disease in oil palm (*Elaeis guineensis* Jacq.) using red edge and neural network techniques. *Journal of the Indian Society of Remote Sensing*, 47(4): 639-646. [Q2]
17. TEE, Y.K., **S.K. BALASUNDRAM**, P. DING, M.H.A. HUSNI and K. BARIAH. 2019. Determination of optimum harvest maturity and non-destructive evaluation of pod development and maturity in cacao (*Theobroma cacao* L.) using a multiparametric fluorescence sensor. *Journal of the Science of Food and Agriculture*, 99: 1700-1708. [Q1]

H-index (Scopus): 21 | H-index (Google Scholar): 31