

Publications

Dr Wiebke Kämper

<https://orcid.org/0000-0002-8646-4492>

Grower articles and outreach communication (last updated 21.01.2025)

15. Tschardt T, Ocampo-Ariza C, **Kämper W** (2025) Press release: Pollinators, pollen and varieties determine fruit quality. Georg-August-Universität Göttingen
14. *Functional Agrobiodiversity* representative at Science Goes City 2024. 'Bees and other flower visitors: Why are they so important?'. Science Goes City, Göttingen
13. **Kämper W**. (2023) Pollen limitation and pollen parentage determine crop production in a cultivated mass-flowering tree. *Talk at the 52nd GfÖ - Conference of the German Ecological Society*.
12. **Kämper W**, Nichols, J, Burwell, C, Trueman SJ. (2022) Mango pollination: levels of self-pollination and cross-pollination among Kensington Pride and Calypso fruit. *Mango Matters*. Edition: Winter 2022
11. **Kämper W**, Wallace, H, ..., Trueman SJ. (2022) Levels of self-pollination and cross-pollination among fruit on a Queensland strawberry farm. *Australian Berry Journal*. Edition: Winter 2022
10. Trueman S, De Silva, A, **Kämper W**, ..., Ogbourne, S (2022) Pollen parentage of nuts during premature nut drop: do self-pollinated nuts drop and cross-pollinated nuts remain? *Australian Macadamia Society Ltd News Bulletin*, Edition: Winter 2022
9. Bai, SH, **Kämper W**, ..., Khoshelham, K (2021) Predicting the ripening time of Hass and Shepard avocado fruit using machine vision technology. *Talking Avocados*, Edition: Spring 2021
8. **Kämper W**, Thorp G, ..., Trueman SJ. (2021) The advantages of self-fertile almonds. *In a Nutshell*. Edition: Winter 2021
7. **Kämper W**, Ogbourne S, Hawkes D, Trueman S (2021) The proportion of self-pollinated Hass fruit increase with increasing distance from another cultivar. *Talking Avocados*. Edition: Autumn 2021
6. Trueman S, De Silva, A, **Kämper W**, ..., Wallace H (2021) Cross-pollination versus self-pollination: effects on nut size and kernel recovery. *Australian Macadamia Society Ltd News Bulletin*, Edition: Spring 2021
5. **Kämper W**, Wallace HM, ..., Trueman SJ (2020) Dependence on cross-pollination in macadamia and challenges for orchard management. *Proceedings* 36, 76. DOI: 10.3390/proceedings2019036076; Active participation at the TropAg Conference
4. Trueman S, **Kämper W**, ..., Wallace H (2019) *Better cross-pollination increases whole tree yields*. *Australian Nutgrower*, Edition: Spring 2020
3. Trueman S, **Kämper W**, ..., Wallace H (2019) *The results are in: most nuts come from cross-pollination*. *Australian Macadamia Society Ltd News Bulletin*, Edition: Autumn 2019
2. Trueman S, **Kämper W**, ..., Wallace H (2019) *The latest results are in: whole-tree yields can be increased with better cross-pollination*. *Australian Macadamia Society Ltd News Bulletin*, Edition: Spring 2019
1. Trueman S, **Kämper W**, ..., Wallace H (2019) *Cross-pollination or self-pollination – that was the question*. *Nut Grower*, Edition: Spring 2019

International peer-reviewed publications (last updated 21.01.2025)

31. Tschardt T, Ocampo-Ariza C, **Kämper W** (in press) Pollinator, pollen, and cultivar identity drive crop quality. *Trends in Plant Science*; DOI: 10.1016/j.tplants.2024.10.004; Significance: Pollination effects on crop quality have been overlooked
30. De Silva AL, **Kämper W**, ... , Trueman SJ, 2024. MassARRAY and SABER analyses of SNPs in embryo DNA reveal the abscission of self-fertilised progeny during fruit development of macadamia (*Macadamia integrifolia* Maiden & Betche). *International Journal of Molecular Sciences* 25, 12. DOI: 10.3390/ijms25126419; Significance: The highly selective abscission of self-fertilised fruitlets and lower nut quality of self-fertilised fruit highlight the critical importance of cross-pollination for macadamia productivity.
29. Hapuarachchi NS, **Kämper W**, ... , Trueman SJ, 2024. Selective retention of cross-fertilised fruitlets during premature fruit drop of Hass avocado. *Horticulturae* 10, 591. DOI: 10.3390/horticulturae10060591; Significance: Growers can increase fruit size and yield by improving the opportunities for cross-pollination.
28. Trueman SJ, Penter MG, ..., **Kämper W** (2024) High outcrossing levels among global macadamia cultivars: implications for nut quality, orchard designs and pollinator management. *Horticulturae* 10, 203. DOI: 10.3390/horticulturae10030203; Significance: Growers should consider closely interplanting cultivars and distributing bee hives throughout the orchard.
27. Bai SH, ..., **Kämper W**, ... , Trueman SJ (2024) Predicting carbohydrate concentrations in avocado and macadamia leaves using hyperspectral imaging with partial least squares regressions and artificial neural networks. *Remote Sensing* 16, 3389. DOI: 10.3390/rs16183389; Significance: Demonstration that PLSR and ANN models perform well in predicting carbohydrate concentrations in evergreen tree-crop leaves.
26. **Kämper W**, Nichols J, ... , Trueman SJ (2023) Flower visitors, levels of cross-fertilisation, and pollen-parent effects on fruit quality in mango orchards. *Agronomy* 13: 2568. DOI: 10.3390/agronomy13102568; Significance: Higher-than-expected levels of cross-fertilisation suggest strategies are in place that circumvent inbreeding depression.
25. Hapuarachchi NS, ... , **Kämper W**, ... , Bai SH (2023) Hyperspectral imaging of adaxial and abaxial leaf surfaces for rapid assessment of foliar nutrient concentrations in Hass avocado. *Remote Sensing* 15: 3100. DOI: 10.3390/rs15123100; Significance: Rapidly optimising crop productivity through precise fertiliser inputs.
24. Davur YD, Kämper W, ... , Bai SH (2023) Estimating the ripeness of Hass avocado fruit using deep learning with hyperspectral imaging. *Horticulturae* 9: 599 DOI: 10.3390/horticulturae9050599; Significance: Predicting the ripeness stage of fruit to reduce food waste along the supply chain.
23. Han Y, Bai SH, ... , **Kämper W** (2023) Predicting the ripening time of 'Hass' and 'Shepard' avocado fruit by hyperspectral imaging. *Precision Agriculture* 00(0): 00 DOI: 10.1007/s11119-023-10022-y; Significance: Hyperspectral imaging presents a tool to sort freshly harvested fruit to reduce food waste.
22. De Silva AL, ... , **Kämper W**, ... , Trueman SJ (2023) Hyperspectral imaging of adaxial and abaxial leaf surfaces as a predictor of macadamia crop nutrition. *Plants* 12(3): 558. DOI: 10.3390/plants12030558; Significance: Rapid nutrient assessment presents an opportunity for optimising crop productivity through precise fertiliser inputs.
21. **Kämper W**, Dung CD, ... , Trueman SJ (2022) High self-paternity levels and effects of fertilised-seed number on size of strawberry fruit. *PLOS ONE* 17(9): e0273457. DOI: 10.1371/journal.pone.0273457; Significance: Deposition and amount of self-pollen determines strawberry size.
20. Trueman SJ, **Kämper W**, ... , Wallace HM (2022) Pollen limitation and xenia effects in a cultivated mass-flowering tree, *Macadamia integrifolia* (Proteaceae). *Annals of Botany* 129: 135-146. DOI:

- 10.1093/aob/mcab112; Significance: First study to demonstrate pollen limitation in a mass-flowering tree.
19. De Silva AL, **Kämper W**, ..., Trueman SJ (2022) Boron effects on fruit set, yield, quality and paternity of macadamia. *Agronomy*. 12: 684. DOI: 10.3390/agronomy12030684; Significance: High B concentration in flowers increased initial fruit set but not yield.
 18. Bai SH, ..., **Kämper W**, ..., van Zwieten, L (2022) Combined effects of biochar and fertilizer applications on yield: a review and meta-analysis. *Science of the Total Environment*. 808: 152073. DOI: 10.1016/j.scitotenv.2021.152073; Significance: Biochar plus inorganic fertiliser increased yield by 35%.
 17. Hapuarachchi NS, **Kämper W**, ..., Trueman SJ (2022) Boron effects on fruit set, yield, quality and paternity of Hass avocado. *Agronomy*. 12: 1479. DOI: 10.3390/agronomy12061479; Significance: Applying the recommended amount of boron is significant to receiving a good yield of high-quality avocado fruit.
 16. Cannizzaro C, ..., **Kämper W**, ..., Wallace HW (2022) Forest landscapes increase diversity of honeybee diets in the tropics. *Forest Ecology and Management*. 504: 119869. DOI 10.1016/j.foreco.2021.119869; Significance: Importance of trees for bee bread diversity in the tropics.
 15. **Kämper W**, Ogbourne SM, Hawkes D, Trueman SJ (2021) SNP markers reveal relationships between fruit paternity, fruit quality and distance from a cross-pollen source in avocado orchards. *Scientific Reports*. 11: 20043. DOI: 10.21203/rs.3.rs-123913/v1; Significance: Development of novel SNP markers superior to existing microsatellite markers.
 14. **Kämper W**, Trueman SJ, Ogbourne SM, Wallace HM (2021) Pollination services in a macadamia cultivar depend on across-orchard transport of cross pollen. *Journal of Applied Ecology* 58: 2529-2539. DOI: 10.1111/1365-2664.14002; Significance: Orchard design determines transfer of cross pollen and yield.
 13. **Kämper W**, Trueman SJ, ..., Ogbourne SM (2021) Single-nucleotide polymorphisms that uniquely identify cultivars of avocado (*Persea americana*). *Applications in Plant Sciences* 9(6): e11440. DOI: 10.1002/aps3.11440; Significance: ddRADseq is a useful tool to identify SNPs between genetically very similar genotypes.
 12. **Kämper W**, Thorp G, ..., Trueman SJ (2021) Pollen paternity can affect kernel size and nutritional composition of self-incompatible and new self-compatible almond cultivars. *Agronomy* 11, 326. DOI: 10.3390/agronomy11020326; Significance: Not all self-fertile genotypes are good candidates for establishing monovarietal orchards.
 11. Ambarli D, ..., **Kämper W**, ..., Blüthgen N (2021) Animal-mediated ecosystem process rates in forests and grasslands are affected by climatic conditions and land-use intensity. *Ecosystems* 24, 467–483. DOI: 10.1007/s10021-020-00530-7; Significance: Climate change and land use present risks for ecosystem processes.
 10. **Kämper W**, Trueman SJ, ..., Bai SH (2020) Rapid determination of nutrient concentrations in Hass avocado fruit by Vis/NIR hyperspectral imaging of flesh or skin. *Remote Sensing* 12, 3409. DOI: 10.3390/rs12203409; Significance: Food waste can be reduced by sorting avocados based on their postharvest properties.
 9. Richards TE, **Kämper W**, ..., Bai SH (2020) Relationships between nut size, kernel quality, nutritional composition and levels of outcrossing in three macadamia cultivars. *Plants* 9:228. DOI: 10.3390/plants9020228; Significance: Nut size is not a determining factor for nutritional value.
 8. Elliot B, ..., **Kämper W**, Wallace HM (2020) Pollen diets and niche overlap of honey bees and native bees in protected areas. *Basic and Applied Ecology* 50, 169-180. DOI: 10.1016/j.baae.2020.12.002; Significance: Importance of sufficient floral resources to sustain floral resources for native pollinators, despite competing with honey bees.

7. Bottrill D, ..., **Kämper W**, Bai SH (2020) Short-term application of mulch, roundup and organic herbicides did not affect soil microbial biomass or bacterial and fungal diversity. *Chemosphere* 244:125436. DOI: 10.1016/j.chemosphere.2019.125436; Significance: Importance of herbicides choice for weed control in riparian zone revegetation
6. **Kämper W**, Kaluza BF, ..., Leonhardt SD (2019) Habitats shape the cuticular chemical profiles of stingless bees. *Chemoecology* 29:125–133. DOI: 10.1007/s00049-019-00282-4; Significance: Importance of a diverse environment in providing resin sources for defence against antagonists.
5. **Kämper W**, Blüthgen N, Eltz T (2017) Bumblebee footprints on bird's-foot trefoil uncover increasing flower visitation with land-use intensity. *Agriculture, Ecosystems & Environment* 240:77–83. DOI: 10.1016/j.agee.2017.02.013; Significance: Bumblebee footprints are a useful tool to analyse bumblebee-flower interactions of otherwise difficult to monitor plants.
4. **Kämper W**, Weiner C, ..., Blüthgen N (2017) Evaluating the effects of floral resource specialization and of nitrogen regulation on the vulnerability of social bees in agricultural landscapes. *Apidologie* 48:371–383. DOI: 10.1007/s13592-016-0480-4; Significance: Resource use does not determine the land-use response of social bees.
3. **Kämper W**, Werner PK, ..., Leonhardt SD (2016) How landscape, pollen intake and pollen quality affect colony growth in *Bombus terrestris*. *Landscape Ecology* 31(10):2245–2258. DOI: 10.1007/s10980-016-0395-5; Significance: Woody plants need to be protected to provide a stable food supply for bumblebees throughout the season.
2. ter Haar SM, **Kämper W**, ..., ten Cate C (2014) The interplay of within-species perceptual predispositions and experience during song ontogeny in zebra finches (*Taeniopygia guttata*). *Proceedings of the Royal Society B: Biological Sciences* 281(1796):20141860. DOI: 10.1098/rspb.2014.1860; Significance: Songbirds as a model emphasise the importance of perceptual preferences and plasticity in acquiring speech.
1. **Kämper W**, Webb JK, ..., Shine R (2012) Behaviour and survivorship of a dasyurid predator (*Antechinus flavipes*) in response to encounters with the toxic and invasive cane toad (*Rhinella marina*). *Australian Mammalogy* 25(2):136. DOI: 10.1071/AM12025; Significance: Aversive learning can be used to prepare native mammals from spreading, toxic cane toads.