



DAFTAR PUSTAKA

- Adagba, O., Walet Pierre, G., Kouamé François, G., Kouassi Badama Philomène, S., Louis Rois Nondenot, A., Romain, A., & Ismael, K. (2015). Inventory of the mealybug species associated to the cocoa tree (*Theobroma cacao L.*) in four producing areas infected with the swollen shoot disease in Côte d'Ivoire. ~ 312 ~ *Journal of Entomology and Zoology Studies*, 3(4), 312–316.
- Aimone, C. D., Hoyer, J. S., Dye, A. E., Deppong, D. O., Duffy, S., Carbone, I., & Hanley-Bowdoin, L. (2022). An experimental strategy for preparing circular ssDNA virus genomes for next-generation sequencing. *Journal of Virological Methods*, 300. <https://doi.org/10.1016/j.jviromet.2021.114405>
- Alif, T., Hartono, S., & Sulandari, S. (2018). Karakterisasi Virus Penyebab Penyakit Belang pada Tanaman Lada (*Piper nigrum L.*). *Jurnal Perlindungan Tanaman Indonesia*, 22(1), 115. <https://doi.org/10.22146/jpti.30354>
- Ameyaw, G. A., Chingandu, N., Domfeh, O., Dzahini-Obiatey, H. K., Gutierrez, O. A., & Brown, J. K. (2017). Variable detection of Cacao swollen shoots disease-associated badnaviruses by PCR amplification. *International Symposium of Cocoa Research (ISCR)*, 13–17.
- Ameyaw, G. A., Domfeh, O., Armooh, B., Boakye, A. Y., & Arjarquah, A. (2022). Inconsistent PCR detection of Cacao swollen shoot virus (CSV) is linked to the occurrence of different variants across the cocoa regions of Ghana. *Journal of Virological Methods*, 300. <https://doi.org/10.1016/j.jviromet.2021.114400>
- Ariningsih, E., Pakpahan, A., Sinuraya, J. F., Purba, H. J., Suharyono, S., & Septanti, K. S. (2020). Increasing added value of superior agricultural products. In *Agro-Socioeconomic Newsletter* (Vol. 13, Issue 3, pp. 1–3).
- Asrul, L., Yulianti, A., Musa, Y., & Trisnaputri, A. C. (2021). The Development Strategies of Cocoa Cultivation (*Theobroma cacao L.*) in Soppeng District. *IOP Conference Series: Earth and Environmental Science*, 921(1). <https://doi.org/10.1088/1755-1315/921/1/012050>
- Badan Pusat Statistik. (2022). *Statistik Kakao Indonesia 2021*. Jakarta
- Bhat, A. I., Hohn, T., & Selvarajan, R. (2016). Badnaviruses: The current global scenario. In *Viruses* (Vol. 8, Issue 6). MDPI AG. <https://doi.org/10.3390/v8060177>
- Bhattacharjee, R., & Akoroda, M. (2018). *Taxonomy and classification of cacao* (pp. 3–18). <https://doi.org/10.19103/as.2017.0021.01>
- Bryceson, S. R., Morgan, J. W., McMahon, P. J., & Keane, P. J. (2023). A sudden and widespread change in symptoms and incidence of vascular streak dieback of cocoa (*Theobroma cacao*) linked to environmental change in Sulawesi, Indonesia. *Agriculture, Ecosystems and Environment*, 350. <https://doi.org/10.1016/j.agee.2023.108466>



CABI. (2019a). *Penyakit kakao : Panduan Foto dan Hama Penyakit dari CABI*. CABI-Plantwise. <https://cabidigitallibrary.org/>

CABI. (2019b). *Theobroma cacao*. <https://www.cabidigitallibrary.org/>. Diakses pada 02 Januari 2021

Campbell, C. A. M. (1983). The assessment of mealybugs (Pseudococcidae) and other Homoptera on mature cocoa trees in Ghana. *Bulletin of Entomological Research*, 73(1), 137–151. <https://doi.org/10.1017/S0007485300013870>

Cenis, J. L., Perez, P., & Fereres, A. (1993). Identification of Aphid (Homoptera: Aphididae) Species and Clones by Random Amplified Polymorphic DNA. *Annals of the Entomological Society of America*, 86(5), 545–550. <https://doi.org/10.1093/aesa/86.5.545>

Charles, J. G. (2011). Using parasitoids to infer a native range for the obscure mealybug, *Pseudococcus viburni*, in South America. *BioControl*, 56, 155–161. <https://doi.org/10.1007/s10526-010-9322-x>

Chingandu, N., Dongo, L., Gutierrez, O. A., & Brown, J. K. (2019). The previously unidentified, divergent badnavirus species cacao red vein-banding virus is associated with cacao swollen shoot disease in Nigeria. *Plant Disease*, 103(6), 1302–1308. <https://doi.org/10.1094/PDIS-09-18-1561-RE>

Chingandu, N., Kouakou, K., Aka, R., Ameyaw, G., Gutierrez, O. A., Herrmann, H. W., & Brown, J. K. (2017). The proposed new species, cacao red vein virus, and three previously recognized badnavirus species are associated with cacao swollen shoot disease. *Virology Journal*, 14(1). <https://doi.org/10.1186/s12985-017-0866-6>

Chingandu, N., Zia-ur-rehman, M., Sreenivasan, T. N., Surjdeo-Maharaj, S., Umaharan, P., Gutierrez, O. A., & Brown, J. K. (2017). Molecular characterization of previously elusive badnaviruses associated with symptomatic cacao in the New World. *Archives of Virology*, 162(5), 1363–1371. <https://doi.org/10.1007/s00705-017-3235-2>

DAFF Australia. (2019). *Final group pest risk analysis for mealybugs and the viruses they transmit on fresh fruit, vegetable, cut-flower and foliage imports*. Australia.

de Tomás, C., & Vicient, C. M. (2022). Genome-wide identification of Reverse Transcriptase domains of recently inserted endogenous plant pararetrovirus (Caulimoviridae). *Frontiers in Plant Science*, 13. <https://doi.org/10.3389/fpls.2022.1011565>

Dewi Hs, E. S., Yudono, P., Putra, E. T. S., & Purwanto, B. H. (2020). Physiological and biochemical activities of cherelle wilt on three cocoa clones (*Theobroma cacao*) under two levels of soil fertilities. *Biodiversitas*, 21(1), 187–194. <https://doi.org/10.13057/biodiv/d210124>

Ding, S. W., Mackenzie, A., Torronen, M., & Gibbs, A. (1990). Nucleotide sequence of the virion protein gene of cacao yellow mosaic tymovirus. *Nucleic Acids Research*, 18(19), 5886. <https://doi.org/10.1093/nar/18.19.5886>

Dzahini-Obiatey, H., Domfeh, O., & Amouah, F. M. (2010). Over seventy years of a viral disease of cocoa in Ghana: From researchers' perspective. In *African Journal of*



Agricultural Research (Vol. 5, Issue 7).
<https://www.researchgate.net/publication/267683769>

Effendy, Fardhal Pratama, M., Rauf, R. A., Antara, M., Basir-Cyio, M., Mahfudz, & Muhardi. (2019). Factors influencing the efficiency of cocoa farms: A study to increase income in rural Indonesia. *PLoS ONE*, 14(4). <https://doi.org/10.1371/JOURNAL.PONE.0214569>

End, M. J., Daymond, A. J., & Hadley, P. (2021). *Technical Guidelines for the Safe Movement of Cacao Germplasm*. Global Cacao Genetic Resources Network (CacaoNet), Bioversity International (CacaoNet). www.cacaonet.org

FAOSTAT. (2020). FAOSTAT: Cocoa Bean Production. <https://data.un.org/Data.aspx?d=FAO&f=itemCode%3A661>. Diakses pada 2 Januari 2021

Folmer, O., Black, M., Hoeh, W., Lutz, R., & Vrijenhoek, R. (1994). DNA primers for amplification of mitochondrial cytochrome c oxidase subunit I from diverse metazoan invertebrates. In *Molecular Marine Biology and Biotechnology* (Vol. 3, Issue 5).

Furuya, N., Suastika, G., & Natsuaki, K. T. (2012). First Report and Molecular Characterization of Exogenous Banana Steak Mysore Virus from Banana in Indonesia. *Asian Journal of Plant Pathology*, 6(2), 41–47.

Garcia-Morales, M., Denno, D. B., Miller, D. R., Miller, G. L., Ben-Dov, Y., & Hardy, N. B. (2016, February 9). *ScaleNet: a literature-based model of scale insect biology and systematics*. Database. <https://doi.org/10.1093/database/bav118>

Gayral, P., Noa-Carrazana, J.-C., Lescot, M., Lheureux, F., Lockhart, B. E. L., Matsumoto, T., Piffanelli, P., & Iskra-Caruana, M.-L. (2008). A Single Banana Streak Virus Integration Event in the Banana Genome as the Origin of Infectious Endogenous Pararetrovirus . *Journal of Virology*, 82(13), 6697–6710. <https://doi.org/10.1128/jvi.00212-08>

Geering, A. D. W., Scharaschkin, T., & Teycheney, P. Y. (2010). The classification and nomenclature of endogenous viruses of the family Caulimoviridae. *Archives of Virology*, 155(1), 123–131. <https://doi.org/10.1007/s00705-009-0488-4>

Guenoune-Gelbart, D., Sufrin-Ringwald, T., Capobianco, H., Gaba, V., Polston, J. E., & Lapidot, M. (2010). Inoculation of plants with begomoviruses by particle bombardment without cloning: Using rolling circle amplification of total DNA from infected plants and whiteflies. *Journal of Virological Methods*, 168(1–2), 87–93. <https://doi.org/10.1016/j.jviromet.2010.04.022>

Guest, D., & Keane, P. (2007). Vascular-streak dieback: A new encounter disease of cacao in Papua New Guinea and Southeast Asia caused by the obligate basidiomycete *Oncobasidium theobromae*. *Phytopathology*, 97(12), 1654–1657. <https://doi.org/10.1094/PHYTO-97-12-1654>

Gyamera, E. A., Domfeh, O., & Ameyaw, G. A. (2023). Cacao Swollen Shoot Viruses in Ghana. *Plant Disease*, 107(5), 1261–1278. <https://doi.org/10.1094/PDIS-10-22-2412-FE>



- Harper, G., Hull, R., Lockhart, B., & Olszewski, N. (2002). Viral sequences integrated into plant genomes. In *Annual Review of Phytopathology* (Vol. 40, pp. 119–136). <https://doi.org/10.1146/annurev.phyto.40.120301.105642>
- Hohn, T., & Rothnie, H. (2013). Plant pararetroviruses: Replication and expression. In *Current Opinion in Virology* (Vol. 3, Issue 6, pp. 621–628). Elsevier B.V. <https://doi.org/10.1016/j.coviro.2013.08.013>
- Hull, R. (2001). Classifying reverse transcribing elements: a proposal and a challenge to the ICTV. In *Arch Virol* (Vol. 146). Virology Division News.
- Jahn, G. C., Beardsley, J. W., & González-Hernández, H. (2003). A Review of the Association of Ants with Mealybug Wilt Disease of Pineapple. *Proc. Hawaiian Entomol. Soc.*, 7777(2), 9–28.
- Jumanto, & Sumardiyono, Y. B. (1976). Beberapa pengamatan gejala mosaik pada daun coklat (*Theobroma cacao L.*) di kebun Beji dan Jatirunggo. *Kongres Nasional PFI Ke IV, Bandung, 20-21 Desember 1976*.
- Kandito, A., Hartono, S., Trisyono, Y. A., & Somowiyarjo, S. (2022). First report of Cacao mild mosaic virus associated with cacao mosaic disease in Indonesia. In *New Disease Reports* (Vol. 45, Issue 2). John Wiley and Sons Inc. <https://doi.org/10.1002/ndr2.12071>
- Kementerian Pertanian. (2020). *Statistik Pertanian 2019*. Jakarta
- Kenten, R. H., & Woods, R. O. (1976). A virus of the cocoa swollen shoot group infecting cocoa in north sumatra. *PANS*, 22(4), 488–490. <https://doi.org/10.1080/09670877609414338>
- Kouakou, K., Kébé, B. I., Kouassi, N., Aké, S., Cilas, C., & Muller, E. (2012). Geographical distribution of Cacao swollen shoot virus molecular variability in Côte d'Ivoire. *Plant Disease*, 96(10), 1445–1450. <https://doi.org/10.1094/PDIS-09-11-0749-RE>
- Kumar, S., Stecher, G., & Tamura, K. (2016). MEGA7: Molecular Evolutionary Genetics Analysis Version 7.0 for Bigger Datasets. *Molecular Biology and Evolution*, 33(7), 1870–1874. <https://doi.org/10.1093/molbev/msw054>
- Kuriyama, K., Tabara, M., Moriyama, H., Kanazawa, A., Koiwa, H., Takahashi, H., & Fukuhara, T. (2020). Disturbance of floral colour pattern by activation of an endogenous pararetrovirus, petunia vein clearing virus, in aged petunia plants. *Plant Journal*, 103(2), 497–511. <https://doi.org/10.1111/tpj.14728>
- Legg, J. T. (1977). *Cocoa Swollen Shoot Disease-Know Your Enemy*. Cocoa Research Institute of Ghana. Taifo, Ghana
- Marelli, J. P., Guest, D. I., Bailey, B. A., Evans, H. C., Brown, J. K., Junaid, M., Barreto, R. W., Lisboa, D. O., & Puig, A. S. (2019). Chocolate under threat from old and new cacao diseases. In *Phytopathology* (Vol. 109, Issue 8, pp. 1331–1343). American Phytopathological Society. <https://doi.org/10.1094/PHYTO-12-18-0477-RVW>
- Martel, N., Gomes, S. A., Chemin, I., Trépo, C., & Kay, A. (2013). Improved rolling circle amplification (RCA) of hepatitis B virus (HBV) relaxed-circular serum DNA (RC-DNA).



Journal of Virological Methods, 193(2), 653–659.
<https://doi.org/10.1016/j.jviromet.2013.07.045>

Menteri Pertanian Republik Indonesia. (2020). Peraturan Menteri Pertanian no 25 tentang Organisme Penganggu Tumbuhan Karantina.

Mette, M. F., Kanno, T., Aufsatz, W., Jakowitsch, J., van der Winden, J., Matzke, M. A., & Matzke, A. J. M. (2002). Endogenous viral sequences and their potential contribution to heritable virus resistance in plants. *The EMBO Journal*, 21(3), 461–469.

Motamayor, J. C., Lachenaud, P., da Silva e Mota, J. W., Loor, R., Kuhn, D. N., Brown, J. S., & Schnell, R. J. (2008). Geographic and genetic population differentiation of the Amazonian chocolate tree (*Theobroma cacao* L.). *PLoS ONE*, 3(10). <https://doi.org/10.1371/journal.pone.0003311>

Muhardi, Rahim, A., Effendy, Antara, M., Rauf, R. A., Lamusa, A., Christoporus, Hadayani, Safitri, D., & Mulyo, J. H. (2020). Sustainability of cocoa production in Indonesia. *Australian Journal of Crop Science*, 14(6), 997–1003. <https://doi.org/10.21475/ajcs.20.14.06.p2510>

Muhire, B. M., Varsani, A., & Martin, D. P. (2014). SDT: A virus classification tool based on pairwise sequence alignment and identity calculation. *PLoS ONE*, 9(9). <https://doi.org/10.1371/journal.pone.0108277>

Mujiono, T., & Samuji. (2005). Dampak Pengendalian Hama Terpadu Kakao terhadap Serangan Pengerek Buah Kakao (<i>Conopomorpha cramerella</i> (Sn.))(Lepidoptera : Gracillariidae) dan <i>Helopeltis</i> sp. (Hemiptera : Miridae). *Jurnal Entomologi Indonesia*, 2(1), 34–42.

Muller, E. (2016). Cacao swollen shoot virus (CSSV): History, biology, and genome. In *Cacao Diseases: A History of Old Enemies and New Encounters* (pp. 337–358). Springer International Publishing. https://doi.org/10.1007/978-3-319-24789-2_10

Muller, E., Ravel, S., Agret, C., Abrokwah, F., Dzahini-Obiatey, H., Galyon, I., Kouakou, K., Jeyaseelan, E. C., Allainguillaume, J., & Wetten, A. (2018a). Next generation sequencing elucidates cacao badnavirus diversity and reveals the existence of more than ten viral species. *Virus Research*, 244, 235–251. <https://doi.org/10.1016/j.virusres.2017.11.019>

Muller, E., Ravel, S., Agret, C., Abrokwah, F., Dzahini-Obiatey, H., Galyon, I., Kouakou, K., Jeyaseelan, E. C., Allainguillaume, J., & Wetten, A. (2018b). Next generation sequencing elucidates cacao badnavirus diversity and reveals the existence of more than ten viral species. *Virus Research*, 244, 235–251. <https://doi.org/10.1016/j.virusres.2017.11.019>

Muller, E., Ullah, I., Dunwell, J. M., Daymond, A. J., Richardson, M., Allainguillaume, J., & Wetten, A. (2021). Identification and distribution of novel badnaviral sequences integrated in the genome of cacao (*Theobroma cacao*). *Scientific Reports*, 11(1). <https://doi.org/10.1038/s41598-021-87690-1>

Neilson, J., Dwartama, A., Fold, N., & Permadi, D. (2020). Resource-based industrial policy in an era of global production networks: Strategic coupling in the Indonesian



cocoa sector. *World Development*, 135.
<https://doi.org/10.1016/j.worlddev.2020.105045>

Obok, E., Wetten, A., & Allainguillaume, J. (2018). Molecular Evidence of Cacao Swollen Shoot Virus Acquisition and Retention by Planococcus Citri (Risso) and Pseudococcus Longispinus (Targioni-Tozzetti) and Pseudococcus Viburni (Signoret) Mealybugs (Hemiptera: Pseudococcidae). *International Journal of Scientific and Research Publications (IJSRP)*, 8(3). <https://doi.org/10.29322/ijrsp.8.3.2018.p7507>

Opoku, I. Y., Dakwa, J. T., & Ollennu, L. (2005). The development of Phytophthora canker on different cocoa genotypes infected and uninfected with cocoa swollen shoot virus. *Tropical Science*, 45(1), 50–53.

Oro, F., Mississo, E., Okassa, M., Guilhaumon, C., Fenouillet, C., Cilas, C., & Muller, E. (2012). Geographical differentiation of the molecular diversity of cacao swollen shoot virus in Togo. *Archives of Virology*, 157(3), 509–514. <https://doi.org/10.1007/s00705-011-1158-x>

Padi, F. K., Domfeh, O., Takrama, J., & Opoku, S. Y. (2013). An evaluation of gains in breeding for resistance to the cocoa swollen shoot virus disease in Ghana. *Crop Protection*, 51, 24–31. <https://doi.org/10.1016/j.cropro.2013.04.007>

Pancaningtyas, S., & Wahyu Susilo, A. (2022). Analysis of Cocoa Clonal Seedlings Purity Through Deoxyribonucleic Acid (DNA) Barcoding and Random Amplification of Polymorphic DNA (RAPD) Fingerprinting. *Pelita Perkebunan (a Coffee and Cocoa Research Journal)*, 38(1), 20–28. <https://doi.org/10.22302/iccri.jur.pelitaperkebunan.v38i1.490>

Park, D.-S., Leem, Y. J., Hahn, K.-W., Suh, S.-J., Hong, K.-J., & Oh, H.-W. (2010). Molecular Identification of Mealybugs (Hemiptera: Pseudococcidae) Found on Korean Pears. *J. Econ. Entomol.*, 103(1), 25–33. <https://doi.org/10.1603/EC09144>

Parnata, Y. (1976). Beberapa Catatan Mengenai Penyakit Virus Tanaman Coklat di Sumatra Utara. *Buletin BPP Medan*, 7, 5–13.

Passricha, N., Saifi, S., Khatodia, S., & Tuteja, N. (2016). Assessing zygosity in progeny of transgenic plants: current methods and perspectives. *Journal of Biological Methods*, 3(3), e46. <https://doi.org/10.14440/jbm.2016.114>

Pooggin, M. M. (2013). How can plant DNA viruses evade siRNA-directed DNA methylation and silencing? In *International Journal of Molecular Sciences* (Vol. 14, Issue 8, pp. 15233–15259). <https://doi.org/10.3390/ijms140815233>

Prawoto, & Martini. (2014). *Pedoman Budi Daya Kakao pada Kebun Campur*. Pusat Penelitian Kopi dan Kakao.

Probowati, W., Somowiyarjo, S., & Hartono, S. (2019). Molecular characterization of mosaic virus from the cocoa trees showing mosaic symptoms in yogyakarta, Indonesia. *Biodiversitas*, 20(12), 3698–3704. <https://doi.org/10.13057/biodiv/d201232>

Puig, A. S. (2021a). Detection of cacao mild mosaic virus (CaMMV) using nested PCR and evidence of uneven distribution in leaf tissue. *Agronomy*, 11(9). <https://doi.org/10.3390/agronomy11091842>



- Puig, A. S. (2021b). Seed Transmission of a Cacao Virus From the Americas and the Implication on Crop Cultivation and Movement of Germplasm. *Plant Health Conference*. <https://doi.org/10.13140/RG.2.2.19587.43045>
- Puig, A. S., Ramos-Sobrinho, R., Keith, C., Kitchen, N., Gutierrez, O., Goenaga, R., & Brown, J. K. (2020). First report of cacao mild mosaic virus associated with symptomatic commercial cacao (*theobroma cacao*) trees in puerto rico. In *Plant Disease* (Vol. 104, Issue 11, p. 3089). American Phytopathological Society. <https://doi.org/10.1094/PDIS-04-20-0745-PDN>
- Puig, A. S., Wurzel, S., Suarez, S., Marelli, J. P., & Niogret, J. (2021). Mealybug (Hemiptera: Pseudococcidae) species associated with cacao mild mosaic virus and evidence of virus acquisition. *Insects*, 12(11). <https://doi.org/10.3390/insects12110994>
- Pusat Penelitian Kopi dan Kakao. (2015). *Pedoman Teknis Budidaya Tanaman Kakao*. Jember.
- Quainoo, A. K., Wetten, A. C., & Allainguillaume, J. (2008a). The effectiveness of somatic embryogenesis in eliminating the cocoa swollen shoot virus from infected cocoa trees. *Journal of Virological Methods*, 149(1), 91–96. <https://doi.org/10.1016/j.jviromet.2008.01.007>
- Quainoo, A. K., Wetten, A. C., & Allainguillaume, J. (2008b). Transmission of cocoa swollen shoot virus by seeds. *Journal of Virological Methods*, 150(1–2), 45–49. <https://doi.org/10.1016/j.jviromet.2008.03.009>
- Ramos-Sobrinho, R., Chingandu, N., Gutierrez, O. A., Marelli, J. P., & Brown, J. K. (2020). A complex of badnavirus species infecting cacao reveals mixed infections, extensive genomic variability, and interspecific recombination. *Viruses*, 12(4). <https://doi.org/10.3390/v12040443>
- Ramos-Sobrinho, R., Ferro, M. M. M., Nagata, T., Puig, A. S., Keith, C. von, Britto, D. S., Gutierrez, O. A., Marelli, J.-P., & Brown, J. K. (2021). Complete genome sequences of three newly discovered cacao mild mosaic virus isolates from *Theobroma cacao* L. in Brazil and Puerto Rico and evidence for recombination. *Archives of Virology*, 166(7), 2027–2031. <https://doi.org/10.1007/s00705-021-05063-5>
- Richert-Poggeler, K. R., & Minarovits, J. (2014). Diversity of latent plant–virus interactions and their impact on the virosphere. *Plant Virus-Host Interaction: Molecular Approaches and Viral Evolution*, 263–275. <https://doi.org/10.1016/B978-0-12-411584-2.00014-7>
- Richert-Poggeler, K. R., Noreen, F., Schwarzacher, T., Harper, G., & Hohn, T. (2003). Induction of infectious petunia vein clearing (pararetro) virus from endogenous provirus in petunia. *The EMBO Journal*, 22(18), 4836–4845.
- Sartiami, D., Saptyanti, N., Syahputra, E., & Puji Mardiasih, W. (2020). Mealybugs (Hemiptera: Pseudococcidae) Associated with Dragon Fruit in Indonesia. In *Advances in Biological Sciences Research* (Vol. 8).



- Sartiami, D., & Watson, G. W. (2017). *A taxonomic update of takahashi's historic collection of mealybugs (Hemiptera: Pseudococcidae) from Malaysia And Singapore.* <https://www.researchgate.net/publication/323186203>
- Saunders, J. A., Mischke, S., Leamy, E. A., & Hemeida, A. A. (2004). Selection of international molecular standards for DNA fingerprinting of *Theobroma cacao*. *Theoretical and Applied Genetics*, 110(1), 41–47. <https://doi.org/10.1007/s00122-004-1762-1>
- Semangun, H. (1961). Gedjala-gedjala mosaik kakao. *Universitas Gadjah Mada*. Yogyakarta
- Sether, D. M., Ullman, D. E., & Hu, J. S. (1998). Transmission of Pineapple Mealybug Wilt-Associated Virus by Two Species of Mealybug (*Dysmicoccus spp.*). *Virology* 86(11) 1224-1230
- Silva, V. C. P. da, Nondillo, A., Galzer, E. C. W., Garcia, M. S., & Botton, M. (2017). Effect of Host Plants on the Development, Survivorship, and Reproduction of *Pseudococcus viburni* (Hemiptera: *Pseudococcidae*). *Florida Entomologist*, 100(4), 718–724. <https://doi.org/10.1653/024.100.0418>
- Somowiyarjo, S., Sulandari, S., Hartono, S., Paradisa, Y. B., & Aji, T. M. (2014). Etiology of Shoot Twig Malformation on Cocoa at Kulon Progo, Special Province of Yogyakarta And Segayung, Central Java. *Jurnal Perlindungan Tanaman Indonesia*, 18(2), 95–102.
- Somowiyarjo, S., Sulandari, S., Hartono, S., Paradisa, Y. B., Tri, &, & Aji, M. (2014). *Etiology of Shoot Twig Malformation on Cocoa at Kulon Progo, Special Province of Yogyakarta And Segayung, Central Java.*
- Staginnus, C., Gregor, W., Mette, M. F., Chee, H. T., Borroto-Fernández, E. G., Da Câmara Machado, M. L., Matzke, M., & Schwarzacher, T. (2007). Endogenous pararetroviral sequences in tomato (*Solanum lycopersicum*) and related species 24. *BMC Plant Biology*, 7. <https://doi.org/10.1186/1471-2229-7-24>
- Staginnus, C., & Richert-Pöggeler, K. R. (2006). Endogenous pararetroviruses: two-faced travelers in the plant genome. In *Trends in Plant Science* (Vol. 11, Issue 10, pp. 485–491). <https://doi.org/10.1016/j.tplants.2006.08.008>
- Sukal, A. C., Kidanemariam, D. B., Dale, J. L., Harding, R. M., & James, A. P. (2019). Assessment and optimization of rolling circle amplification protocols for the detection and characterization of badnaviruses. *Virology*, 529, 73–80. <https://doi.org/10.1016/j.virol.2019.01.013>
- Syauqi, A., Dadang, D., Harahap, I. S., & Indarwatmi, M. (2021). Gamma irradiation against mealybug *Dysmicoccus lepelleyi* (Betrem) (Hemiptera: Pseudococcidae) on mangosteen fruit (*Garcinia mangostana* L.) as a quarantine treatment. *Radiation Physics and Chemistry*, 179. <https://doi.org/10.1016/j.radphyschem.2020.108954>
- Takahashi, H., Fukuhara, T., Kitazawa, H., & Kormelink, R. (2019). Virus Latency and the Impact on Plants. In *Frontiers in Microbiology* (Vol. 10). Frontiers Media S.A. <https://doi.org/10.3389/fmicb.2019.02764>



- Teycheney, P. Y., Geering, A. D. W., Dasgupta, I., Hull, R., Kreuze, J. F., Lockhart, B., Muller, E., Olszewski, N., Pappu, H., Pooggin, M. M., Richert-Poggeler, K. R., Schoelz, J. E., Seal, S., Stavolone, L., & Umber, M. (2020). ICTV Virus taxonomy profile: Caulimoviridae. In *Journal of General Virology* (Vol. 101, Issue 10, pp. 1025–1026). Microbiology Society. <https://doi.org/10.1099/jgv.0.001497>
- Thorburn, C. (2015). The rise and demise of integrated pest management in rice in Indonesia. *Insects*, 6(2), 381–408. <https://doi.org/10.3390/insects6020381>
- Tomonaga, K., Suzuki, N., & Berkhout, B. (2019). “Integration of viral sequences into eukaryotic host genomes: legacy of ancient infections.” In *Virus Research* (Vol. 262, p. 1). Elsevier B.V. <https://doi.org/10.1016/j.virusres.2018.12.012>
- Triharso, Sumardiyono, Y. B., Jumanto, & Soemanto. (1981). Studies on mosaic disease on cocoa in Indonesia. *International Conference on Tropical Crop Protection*.
- Tyasningswi, R. W., Witjaksono, W., & Indarti, S. (2019). Analysis of Volatile Compound at Different Age of Corn Crops Used as Bemisia tabaci Repellent. *Jurnal Perlindungan Tanaman Indonesia*, 23(1), 142. <https://doi.org/10.22146/jpti.35954>
- Ullah, I., Daymond, A. J., Hadley, P., End, M. J., Umaharan, P., & Dunwell, J. M. (2021). Identification of cacao mild mosaic virus (Cammv) and cacao yellow vein-banding virus (cyvbv) in cocoa (*theobroma cacao*) germplasm. *Viruses*, 13(11). <https://doi.org/10.3390/v13112152>
- Ullah, I., & Dunwell, J. M. (2023). Bioinformatic, genetic and molecular analysis of several badnavirus sequences integrated in the genomes of diverse cocoa (*Theobroma cacao* L.) germplasm. *Saudi Journal of Biological Sciences*, 103648. <https://doi.org/10.1016/j.sjbs.2023.103648>
- Ullah, I., Kamran, M., & Dunwell, J. M. (2023). Identification of a Novel Polerovirus in Cocoa (*Theobroma cacao*) Germplasm and Development of Molecular Methods for Use in Diagnostics. *Pathogens*, 12(11), 1284. <https://doi.org/10.3390/pathogens12111284>
- Umber, M., Pressat, G., Fort, G., Plaisir Pineau, K., Guiougiou, C., Lambert, F., Farinas, B., Pichaut, J. P., Janzac, B., Delos, J. M., Salmon, F., Dubois, C., & Teycheney, P. Y. (2022). Risk Assessment of Infectious Endogenous Banana Streak Viruses in Guadeloupe. *Frontiers in Plant Science*, 13. <https://doi.org/10.3389/fpls.2022.951285>
- Untung, K. (2000). Pelembagaan Konsep Pengendalian Hama Terpadu di Indonesia. *Jurnal Perlindungan Tanaman Indonesia*, 6(1), 1–8.
- Veglia, A. J., Bistolas, K. S. I., Voolstra, C. R., Hume, B. C. C., Ruscheweyh, H. J., Planes, S., Allemand, D., Boissin, E., Wincker, P., Poulain, J., Moulin, C., Bourdin, G., Iwankow, G., Romac, S., Agostini, S., Banaigs, B., Boss, E., Bowler, C., de Vargas, C., Vega Thurber, R. L. (2023). Endogenous viral elements reveal associations between a non-retroviral RNA virus and symbiotic dinoflagellate genomes. *Communications Biology*, 6(1). <https://doi.org/10.1038/s42003-023-04917-9>
- Voora, V., Bermudez, S., & Larrea, C. (2019). *Global Market Report: Cocoa*. <https://iisd.org/ssi/>. Diakses pada 02 Januari 2021
- Waterworth, R. A., Wright, I. M., & Millar, J. G. (2011). Reproductive Biology of Three Cosmopolitan Mealybug (Hemiptera: Pseudococcidae) Species, *Pseudococcus*



longispinus, Pseudococcus viburni, and Planococcus ficus. *Ann. Entomol. Soc. Am.*, 104(2), 249–260. <https://doi.org/10.1603/AN10139>

Yu, H., Wang, X., Lu, Z., Xu, Y., Deng, X., & Xu, Q. (2019). Endogenous pararetrovirus sequences are widely present in Citrinae genomes. *Virus Research*, 262, 48–53. <https://doi.org/10.1016/j.virusres.2018.05.018>

Zarkani, A., Apriyanto, D., Turanli, F., Ercan, C., & Kaydan, M. B. (2021). A checklist of Indonesian scale insects (Hemiptera: Coccoidea). *Zootaxa*, 5016(2), 151–195. <https://doi.org/10.11646/zootaxa.5016.2.1>

Zarkani, A., Fauzi, A., Apriyanto, D., & Kaydan, M. B. (2023). Mealybugs (Hemiptera, Coccoidea, Pseudococcidae) on parasitic plants (Loranthaceae) in Indonesia with description of a new species and a new country record. *ZooKeys*, 1167, 199–210. <https://doi.org/10.3897/zookeys.1167.106012>