

DAFTAR PUSTAKA

- Amari, K., C. Huang, and M. Heinlein. 2021. Potential impact of global warming on virus propagation in infected plants and agricultural productivity. *Frontiers in Plant Science* 12.
- Annisaa, N., P. Hidayat, G. Hidayat, S. Hidayat, and S. Lee. 2021. Multiple infections of begomovirus on its host plants. *IOP Conference Series: Earth and Environmental Science* 694.
- Bisi. 2023. Benih semangka bali flower. <<https://bisi.co.id/Sustainability-Report-BISI-2022>>, Diakses 4 Maret 2026.
- Bornacini, V.A., J. M. Irazoqul, C. R. Flores, C.G.V Medina, A.F. Amadio, Lambertini, P.M.L. 2020. Reconstruction and Characterization of Full-Length virus and Alphasatellite Genomes Infecting Pepper through Metagenomics. *Viruses* 2020 12(2): 202.
- BPS. 2024. Produksi Tanaman Sayuran dan Buah-Buahan Semusim Menurut Provinsi dan Jenis Tanaman. <<https://www.bps.go.id/assets/statistics-table/3/ZUhFd1JtZzJWVpqpWTJsV05XTllhVmhhRSZFoNFFUMDkjMw==/produksi-tanaman-sayuran-dan-buah-buahan-semusim-menurut-provinsi-dan-jenis-tanaman---2024.html?year=2024>>, Diakses 17 november 2025.
- Brown, J. 2000. Molecular markers for the identification and global tracking of whitefly vector-begomovirus complexes. *Virus Research* 71(1-2): 233-260.
- Brown, J., A. Idris, I. Torres-Jerez, G. Banks, and S. Wyatt. 2001. The core region of the coat protein gene is highly useful for establishing the provisional identification and classification of begomoviruses. *Archives of Virology* 146: 1581-1598.
- Castro, R., L. Moreira, M. Rojas, R. Gilbertson, E. Hernández, F. Mora, and P. Ramírez. 2013. Occurrence of *Squash yellow mild mottle virus* and *Pepper golden mosaic virus* in potential new hosts in Costa Rica. *The Plant Pathology Journal* 29: 285–293.
- Damayanti, T., M. Rahmatilah, L. Hidayat, S. Hidayat, and S. Wiyono. 2021. Cucurbitaceae *aphid*-borne yellows virus (CABYV) infecting melon and bitter gourd in Java, Indonesia. *IOP Conference Series: Earth and Environmental Science* 948.
- Daryono, B., S. Somowiyarjo, and K. Natsuaki. 2005. Biological and molecular characterization of melon-infecting *Kyuri green mottle mosaic virus* in Indonesia. *Journal of Phytopathology* 153: 588-595.
- Desbiez, C. 2020. The neverending story of *cucurbitaceae*s and viruses. *Acta Horticulturae* 1294: 173–192.
- Destiana, and M. Ali. 2025. Identifikasi hama pada tanaman buah semangka sistem tumpang sari di Desa Nusa Tenggara. *Simbiosis: Jurnal Sains Pertanian* 2(2): 114–120.

- Escalante, C., A. Sanz-Saez, A. Jacobson, K. Otulak-Kozieł, E. Kozieł, K. Balkcom, C. Zhao, and K. Conner. 2024. Plant virus transmission during seed development and implications to plant defense system. *Frontiers in Plant Science* 15.
- Fall, M., D. Xu, P. Lemoyne, G. Clément, P. Moffett, and C. Ritzenthaler. 2025. An innovative binding-protein-based dsRNA extraction method: comparison of cost-effectiveness of virus detection methods using high-throughput sequencing. *Molecular Ecology Resources* 25.
- Fiallo-Olivé, E., J. Lett, D. P. Martin, P. Roumagnac, A. Varsani, F. M. Zerbini, and J. Navas-Castillo. 2021. ICTV virus taxonomy profile: Geminiviridae. *Journal of General Virology* 102(12): 001696.
- Fidan, H., S. Çelik, and G. Koç. 2024. Virus diseases limiting greenhouses and open field production of cucurbitaceae in Antalya province. *Mediterranean Agricultural Sciences* 37(2): 57–65.
- Fondong, V. 2025. DNA satellites impact begomovirus diseases in a virus-specific manner. *International Journal of Molecular Sciences* 26.
- Gaafar, Y., and H. Ziebell. 2020. Comparative study on three viral enrichment approaches based on RNA extraction for plant virus/viroid detection using high-throughput sequencing. *PLoS ONE* 15.
- Gadhav, K., S. Gautam, D. Rasmussen, and R. Srinivasan. 2020. *Aphid* transmission of potyvirus: the largest plant-infecting RNA virus genus. *Viruses* 12.
- Gariyban, L. and N. Avashia. 2013. Research Techniques Made Simple: Polymerase Chain Reaction (PCR). *Journal Invest Dermatol*, 133(3): 1-8.
- Ghelani, M., B. Kabaria, Y. Ghelani, K. Shah, & M. Acharya. 2020. Biology of whitefly, *Bemisia tabaci* (Gennadius) on tomato. *Journal of Entomology and Zoology Studies*, 8(4): 1596-1599.
- Ghosh, S., and M. Ghanim. 2021. Factors determining transmission of persistent viruses by *Bemisia tabaci* and emergence of new virus–vector relationships. *Viruses* 13(9): 1808.
- Gibbs, A. J., M. Hajizadeh, K. Ohshima, and R. A. Jones. 2020. The potyviruses: an evolutionary synthesis is emerging. *Viruses* 12(2): 132.
- Giovanni, A. C., S. Hartono, S. Sulandari, dan S. Somowiyarjo. 2020. Molecular identification of begomovirus infecting angled luffa. *Jurnal Perlindungan Tanaman Indonesia* 24(2): 147-153.
- Hadi, R., S. Hartono, and B. S. Daryono. 2024. Begomovirus infection patterns in melons of Indonesian lowlands: growth trends among ecosystems and genotypes. *Hayati Journal of Biosciences* 31(3): 498–506.
- Hamza, E., A. Al-Naggar, H. El-Shabrawi, and I. Tolba. 2022. Characteristics of *Cucumber mosaic virus* isolates infecting *cucurbitaceae* in Egypt. *Al-Azhar Journal of Agricultural Research* 47(1): 172-184

- Helina, S., H. M. Akin, S. R. Dirmawati, Y. Fitriana, T. Maryono, R. Suharjo, dan C. Ginting. 2025. Begomovirus: Potensi ancaman pertanian hortikultura lampung. *Jurnal Proteksi Agrikultura* 2(2): 9-22.
- Inoue-Nagata, A. K., R. Jordan, J. Kreuze, F. Li, J. J. López-Moya, K. Mäkinen, and ICTV Report Consortium. 2022. ICTV virus taxonomy profile: Potyviridae 2022. *Journal of General Virology* 103(5): 001738.
- Integrated Taxonomic Information System-Report. 2016. <https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=22364#null>, Diakses 18 November 2025
- Jailani, A. A. K., and M. L. Paret. 2023. Development of a multiplex RT-RPA assay for simultaneous detection of three viruses in *cucurbitaceae*. *Molecular Plant Pathology* 24(11): 1443-1450.
- Jiang, T., and T. Zhou. 2023. Unraveling the mechanisms of virus-induced symptom development in plants. *Plants* 12(15): 2830.
- Kandito, A., S. Hartono, S. Sulandari, and S. Somowiyarjo. 2019. Molecular characterization of betasatellite associated with begomovirus on *Ageratum conyzoides* in Magelang, Central Java. *Jurnal Perlindungan Tanaman Indonesia* 23(2): 88-96.
- Kandito, A., S. Hartono, S. Sulandari, and S. Somowiyarjo. 2021. A recombinant DNA-satellite associated with *Pepper yellow leaf curl* Indonesia virus in highland area. *Indonesian Journal of Biotechnology* 26(2): 82-90.
- Karimil, K., Reswita, and Irnad. 2021. Analisis kelayakan usahatani melon (*Cucumis melo* L.) di Kota Bengkulu. *Buletin Agritek* 2(2): 11–24.
- Kon, T., K. Kuwabara, S. H. Hidayat, and M. Ikegami. 2007. A begomovirus associated with *Ageratum* yellow vein disease in Indonesia: evidence for natural recombination between *Tomato leaf curl Java virus* and *Ageratum yellow vein virus*-[Java]. *Archives of Virology* 152: 1147-1157.
- Kumar, R., S. R. Palicherla, B. Mandal, and S. Kadiri. 2018. PCR based detection of betasatellite associated with the begomoviruses using improved universal primers. *Australasian Plant Pathology* 47(1): 115-118.
- Kumari, S., N. Krishnan, V. Dubey, B. Das, K. K. Pandey, and J. Singh. 2021. Investigations on annual spreading of viruses infecting cucurbitaceae crops in Uttar Pradesh State, India. *Scientific Reports* 11(1): 17883.
- Kurnia, T. D., A. Purwantoro, S. Sulandari, P. Basunanda, A. B. Setiawan, Y. Fatmawati, and I. P. Andika. 2022. Molecular and morpho-physiological identification of yellow leaf curl disease of cucumber in Salatiga, Indonesia. *Biodiversitas Journal of Biological Diversity* 23(3): 1466-1474
- Laili, N. U., and T. A. Damayanti. 2019. Deteksi virus pada tanaman mentimun di Jawa Barat. *Agrovigor* 12(1): 8–15.
- Lavanya, R., and V. J. S. R. Arun. 2021. Detection of begomovirus in chilli and tomato plants using functionalized gold nanoparticles. *Scientific Reports* 11(1): 14203.

- Listihani, L., N. P. Pandawani, T. A. Damayanti, M. Sutrawati, D. G. W. Selangga, K. A. Yuliadhi, and G. N. A. S. Wiryana. 2022. Distribution and molecular characterization of *Squash mosaic virus* on cucumber in Gianyar, Bali. *Jurnal Hama dan Penyakit Tumbuhan Tropika* 22(1): 48-54.
- Listihani, L., T. Damayanti, S. Hidayat, and S. Wiyono. 2019. Molecular characterization of begomovirus on cucumber in Java. *Jurnal Perlindungan Tanaman Indonesia* 23(2): 197-204.
- Listihani, L., T. Damayanti, S. Hidayat, and S. Wiyono. 2020. First report of cucurbitaceae *aphid*-borne yellows virus on cucumber in Java, Indonesia. *Journal of General Plant Pathology* 86: 219-223.
- Liu, X., X. Chen, S. Liu, K. Du, P. Wang, T. Jiang, M. Cao, X. Li, Z. Fan, and T. Zhou. 2021. A new potyvirus isolated from *Pennisetum alopecuroides* with the potential to infect cereal crops. *Phytopathology Research* 3: 1-10.
- Lozano, G., H. P. Trenado, E. Fiallo-Olivé, D. Chirinos, F. Geraud-Pouey, R. Briddon, and J. Navas-Castillo. 2016. Characterization of non-coding DNA satellites associated with sweepoviruses: definition of a distinct class of begomovirus-associated satellites. *Frontiers in Microbiology* 7: 162.
- Luigi, M., A. Manglli, C. Corrado, A. Tiberini, E. Costantini, L. Ferretti, L. Tomassoli, and S. Bertin. 2023. Development, validation, and application of reverse transcription real-time and droplet digital PCR assays for the detection of the potyviruses watermelon mosaic virus and zucchini yellow mosaic virus in *cucurbitaceae*. *Plants* 12.
- Mandal, B., S. Mandal, S. Sohrab, K. Pun, and A. Varma. 2004. A new yellow mosaic disease of chayote in India. *Plant Pathology* 53(6): 797.
- Marie-Jeanne, V., R. Ioos, J. Peyre, B. Alliot, and P. Signoret. 2000. Differentiation of Poaceae potyviruses by reverse transcription-polymerase chain reaction and restriction analysis. *Journal of Phytopathology* 148(3): 141-151.
- Moreno, A. B., and J. J. López-Moya. 2020. When viruses play team sports: mixed infections in plants. *Phytopathology* 110(1): 29-48.
- Mosharaf, N., S. Tabein, S. Behjatnia, and A. Safi. 2020. Role of betasatellites in interaction of viruses with plants. *Plant Pathology Science*.
- Moya-Ruiz D., C., P. Rabadán, M. Juárez, and P. Gómez. 2021. Assessment of the current status of potyviruses in watermelon and pumpkin crops in Spain: epidemiological impact of cultivated plants and mixed infections. *Plants* 10(1): 138.
- Moya-Ruiz, C. D., I. Ferriol, and P. Gómez. 2024. The temporal order of mixed viral infections matters: common events that are neglected in plant viral diseases. *Viruses* 16(12): 1954.
- Moya-Ruiz, D., C., P. Gómez, and M. Juárez. 2023. Occurrence, distribution, and management of *aphid*-transmitted viruses in *cucurbitaceae* in Spain. *Pathogens* 12.

- Mudjoko, T., N. Farida, Y. Wuryandari, and P. Suryaminarsih. 2025. Study and biological manage of the plant virus diseases. Prosiding pada International Seminar of Research Month 2024. Surabaya, 2025.
- Naik, S. O., V. Venkataravanappa, A. K. Chakravarthy, C. L. Reddy, and M. Krishnareddy. 2022. Survey, host range and characterization of begomovirus infecting bitter gourd and its vector whitefly cryptic species. *Indian Phytopathology* 75(4): 1111-1127.
- Ning, J., J. Liebich, M. Kästner, J. Zhou, A. Schäffer, and P. Burauel. 2009. Different influences of DNA purity indices and quantity on PCR-based DGGE and functional gene microarray in soil microbial community study. *Applied Microbiology and Biotechnology* 82: 983-993.
- Okada, R., E. Kiyota, H. Moriyama, T. Fukuhara, and T. Natsuaki. 2015. A simple and rapid method to purify viral dsRNA from plant and fungal tissue. *Journal of General Plant Pathology*. 81(2): 103–107.
- Pallás, V., J. Sánchez-Navarro, and D. James. 2018. Recent advances on the multiplex molecular detection of plant viruses and viroids. *Frontiers in Microbiology* 9.
- Rabadán, M. P., M. Juárez, C. De Moya-Ruiz, and P. Gómez. 2021. *Aphid*-borne viruses infecting cultivated watermelon and squash in Spain: characterization of a variant of cucurbitaceae *aphid*-borne yellows virus (CABYV). *Plant Pathology* 70(6): 1476–1485
- Rakhman, R., S. Nurulita, and S. Hidayat. 2025. Use of several primers for detection of potyviruses by RT-PCR technique. *IOP Conference Series: Earth and Environmental Science* 1550.
- Regassa, B. 2021. Plant viruses detection and diagnosis based on polymerase chain reaction techniques: review. *Advances in Life Science and Technology* 86 (1):1-7
- Revill, P. A., C. V. Ha, S. C. Porchun, M. T. Vu, and J. L. Dale. 2003. The complete nucleotide sequence of two distinct geminiviruses infecting cucurbitaceas in Vietnam. *Archives of Virology* 148(8): 1523-1541.
- Ridho, M. A., Martinius, Fadli, Y. Liswarni, L. Najmi, and J. Trisno. 2023. The first occurrence of *Zucchini yellow mosaic virus* infecting cucumber in Padang, West Sumatra. *Jurnal Fitopatologi Indonesia* 19(5): 183–187.
- Riska, Budiyaniti, T., Jumjunidang, and E. D. Husada. 2023. Host range of three isolates of papaya ringspot virus (PRSV) found in North Sumatera and West Java. *IOP Conference Series: Earth and Environmental Science* 1255(1): 012010.
- Rivai, F. 2014. *Epidemiologi Penyakit Tumbuhan Edisi 2*. Graha Ilmu, Yogyakarta.
- Sandra, N., and B. Mandal. 2024. Emerging evidence of seed transmission of begomoviruses: implications in global circulation and disease outbreak. *Frontiers in Plant Science* (15): 1376284.

- Sangeeta, R. Kumar, B. Yadav, B. Bhatt, R. Krishna, N. Krishnan, S. Karkute, S. Kumar, B. Singh, and A. Singh. 2023. Diverse begomovirus-betasatellite complexes cause tomato leaf curl disease in western India. *Virus Research* 328.
- Sangeetha, B., V. Malathi, D. Alice, M. Suganthi, and P. Renukadevi. 2018. A distinct seed-transmissible strain of *Tomato leaf curl New Delhi virus* infecting chayote in India. *Virus Research* 258: 81-91.
- Sarikaya, P., K. Yildiz, G. Firat, and H. Fidan. 2023. Research on drawing attention to overlooked viruses in plant viruses causing yellowing-type symptoms in *Cucurbitaceae*. *International Journal of Innovative Approaches in Agricultural Research*.
- Saunders, K., R. W. Briddon, and J. Stanley. 2008. Replication promiscuity of DNA β satellites associated with monopartite begomoviruses: deletion mutagenesis of the *Ageratum yellow vein virus* DNA β satellite localises sequences involved in replication. *Journal of General Virology* 89: 3165-3172.
- Selangga, D., I. Temaja, G. Wirya, I. Sudiarta, and L. Listihani. 2022. First report of papaya ringspot virus-watermelon strain on melon (*Cucumis melo* L.) in Bali, Indonesia. *Indian Phytopathology* 75: 911-914.
- Selangga, D., I. Widnyana, and L. Listihani. 2021. The existence of papaya ringspot virus-papaya strain on cucumber in Gianyar, Bali. *Jurnal Perlindungan Tanaman Indonesia* 25(1): 48-55.
- Sharma, A., S. Sharma, I. Khan, S. Kaur, and S. Kaur. 2021. Comparative study on detection efficacy of universal potyviruses primers. *Vegetos* 34: 745-749.
- Sharma, N. K., S. Singh, and L. P. Awasthi. 2017. Prevention and control of viral diseases in watermelon through botanical biopesticides. *Virology Research Review* 1(3): 1-8.
- Sharma, S., S. S. Kang, and A. Sharma. 2015. First report of mixed infection of *Zucchini yellow mosaic virus* and *Tomato leaf curl New Delhi virus* in bittergourd in India. *Journal of Plant Pathology* 97(2): 1125-4653.
- Shevchenko, O., T. Shevchenko, H. Snihur, and I. Budzanivska. 2021. Epidemiological patterns, prevalence and seasonal dynamics of different viruses in susceptible cucurbitaceae crops. *Agriculture and Forestry* 67.
- Subiastuti, A., M. Huda, and B. Daryono. 2024. Evaluation of three *Cucurbitaceae* cultivars resistant against begomoviruses based on morphological symptoms and molecular analysis. *Jurnal Perlindungan Tanaman Indonesia* 28(2): 88-95.
- Subiastuti, A., S. Hartono, and B. Daryono. 2019. Detection and identification of begomovirus infecting *Cucurbitaceae* and *Solanaceae* in Yogyakarta, Indonesia. *Biodiversitas Journal of Biological Diversity* 20(3):738-744.
- Supriyanta, B., D. B. Praseyo, E. B. Irawati, D. Wicaksono, and A. N. Huda. 2025. Resistance of eight premium melon varieties to viral diseases in a commercial greenhouse in Central Kalimantan. *Conference Proceeding Series: Engineering and Technology* 4(1): 1-8.

- Supyani, S. A. Chandra, F. Rochman, D. N. Septariani, and S. Widadi. 2017. Occurrence and distribution of cucumber mosaic virus in cucurbitaceae in Karanganyar, Central Java, Indonesia. *African Journal of Agricultural Research* 12(18): 1593-1601.
- Sutrawati, M., H. Bustamam, S. B. Ginting, R. N. Pradita, E. Mustika, and E. Aulia. 2025. First detection of major viruses causing mixed infections in melon (*Cucumis melo* L.) in Bengkulu Province, Indonesia. *Jurnal Proteksi Tanaman* 9(2): 108–118.
- Sutrawati, M., S. Sipriyadi, Y. Sihotang, C. Hutasoit, P. Parwito, and E. Aulia. 2022. *Tomato leaf curl New Delhi virus* associated with yellow mosaic disease of cucumber (*Cucumis sativus*) in Bengkulu, Indonesia. *Advances in Biological Sciences Research* 22(1):1-4
- Tatineni, S., J. Alexander, and F. Qu. 2022. Differential synergistic interactions among four different wheat-infecting viruses. *Frontiers in Microbiology* 12.
- Temaja, I., I. Sudiarta, G. Wirya, D. Selangga, L. Listihani, I. Ambarawati, N. Kasim, P. Sapanca, and N. Pandawani. 2025. Begomovirus diversity and distribution on melon plants in Bali, Indonesia. *Biodiversitas Journal of Biological Diversity* 26(2): 572-582
- Wadas, I., and I. Domingues. 2025. Systematic review of phylogenetic analysis techniques for RNA viruses using bioinformatics. *International Journal of Molecular Sciences* 26.
- Wardani, T., S. Hartono, S. Sulandari, and S. Somowiyarjo. 2021. Double infections of *Rehmannia mosaic virus* and *Potato virus Y* on tobacco plants in Central Java and Special Region of Yogyakarta. *Jurnal Perlindungan Tanaman Indonesia* 25(2): 133-140.
- Wilisiani, F., S. Somowiyarjo, dan S. Hartono. 2014. Identifikasi molekuler virus penyebab daun keriting isolat Bantul pada melon. *Jurnal Perlindungan Tanaman Indonesia* 18(1): 47-54.
- Wu, Y. J., Y. Liu, H. Li, S. S. Liu, and L. Pan. 2023. Temporal dynamic of the ratio between monopartite begomoviruses and their associated betasatellites in plants, and its modulation by the viral gene β C1. *Viruses* 15: 800.
- Yamamoto, H., Y. Wakita, T. Kitaoka, T. Fujishiro, E. Kesumawati, and S. Koeda. 2021. Southeast Asian isolate of the tomato leaf curl New Delhi virus shows higher pathogenicity against tomato and cucurbitaceae crops compared to that of the Mediterranean isolate. *The Horticulture Journal* 90(3): 1-12.
- Yoon, J., I. Choi, S. Jang, S. Park, and S. Choi. 2017. First report of *Zucchini yellow mosaic virus* in chayote (*Sechium edule*) in Korea. *Plant Disease* 102(6), 1179.
- Yuenleni, Y. 2019. Langkah-langkah optimasi PCR. *Indonesian Journal of Laboratory* 1(3): 51-56.