UNIVERSITAS
GADJAH MADA
**Karakterisasi Molekuler dan Biologi cucumber mosaic virus pada Tanaman dan Gulma Fabaceae di Daerah
Istimewa Yogyakarta dan Jawa Tengah**
Rossa Wulandari, Dr. Adyatma Irawan Santosa, S.P., M.Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

Agrios, G.N. 1936. Plant Pathology. 5th ed. Elsevier Academic Press Publication, New York.

Alam, S. B., and D. Rochon. 2016. Evidence that Hsc70 is associated with cucumber necrosis virus particles and plays a role in particle disassembly. Journal of Virology 91(2): e0155516.

Andayanic, W. R. 2012. Diagnosis penyakit mosaic (*Soybean mosaic virus*) terbawa benih kedelai. Jurnal HPT Tropika 12(2): 185-191.

Arinaitwe, W., A. Guyon, T. D. Tungadi, N. J. Cunniffe, S. J. Rhee, A. Khalaf, N. M. Mhlanga, A. E. Pate, A. M. Murphy, and J. P. Carr. 2022. The effects of *cucumber mosaic virus* and its 2a and 2b proteins on interactions of tomato plants with the aphid vectors *Myzus persicae* and *Macrosiphum euphorbiae*. Viruses 14: 1703.

Arogundade, O., O. S. O. S. Balogun, and K. T. Kareem. 2012. Occurrence and distribution of pepper veinal mottle virus and *cucumber mosaic virus* in pepper in Ibadan, Nigeria. Virology Journal 9(79): 1-4.

Azizi, A., and Shams-Bakhsh. 2014. Impact of *cucumber mosaic virus* infection on the varietal traits of common bean cultivars in Iran. Virus Disease 25(4): 447-454.

Azuma, H., A. M. Murphy, N. J. Cunniffe, A. G. Berlinger, and J. P. Carr. 2026. Viral manipulation of vector behaviour: *cucumber mosaic virus* has differential effects on specialist versus generalist aphids infesting *Arabidopsis thaliana*. Virology Journal 23: 42.

Badan Perencanaan Pembangunan, Riset, dan Inovasi Daerah DIY. 2025. Statistik pertanian. Diakses pada hari Senin, 20 Oktober 2025, pukul 17.00 WIB. <https://bapperida.jogjaprov.go.id/dataku/data_dasar/cetak/168-pertanian?id_skpd=251>

Badan Pusat Statistik Provindi Jawa Tengah. 2019. Luas panen, produksi, dan produktivitas kacang tanah dan kacang hijau menurut kabupa ten/kota di Provinsi Jawa Tengah, 2018. Diakses pada hari Senin, 20 Oktober 2025, pukul 17.15 WIB. <https://jateng.bps.go.id/id/statistics-table/1/MTczOSMx/luas-panen-produksi-dan-produktivitas-kacang-tanah-menurut-kabupaten-kota-di-provinsi-jawa-tengah-2018.html>

Badan Pusat Statistik Provindi Jawa Tengah. 2021. Luas panen, produksi, dan produktivitas kacang tanah dan kacang hijau menurut kabupaten/kota di Provinsi Jawa Tengah, 2019. Diakses pada hari Senin, 20 Oktober 2025, pukul 17.10 WIB. <https://jateng.bps.go.id/id/statistics-table/1/MjQ1MiMx/luas-panen--produksi--dan-produktivitas-kacang-tanah-dan-kacang-hijau-menurut-kabupaten-kota-di-provinsi-jawa-tengah--2019.html>

Bhoi, T.K., I. Samal, P. K. Majhi, J. Komal, D. K. Mahanta, A.K. Pradhan, V. Saini, M. N. Raj, M. A. Ahmad, P. P. Behera, and M. Ashwini. 2022. Insight into aphid mediated potato virus Y transmission: a molecular to bioinformatics prospective. Frontiers in Microbiology 13: 1001454.

Bin, Y., Xu, J., Duan, Y., Ma, Z., Zhang, Q., Wang, C., Su, Y., Jiang, Q., Zhen, S., and Zhou, C. 2022. The titer of citrus yellow vein clearing virus is positively associated with the severity of symptoms in infected citrus seedlings. Plant Disease 106(3): 828-835.

Biswas, K. M., A. Patil, and G. Sunkad. 2023. Enhancing legume cultivars through agronomy, breeding, and genetics. Agronomy 13(4): 1035.

UNIVERSITAS
GADJAH MADA
**Karakterisasi Molekuler dan Biologi cucumber mosaic virus pada Tanaman dan Gulma Fabaceae di Daerah
Istimewa Yogyakarta dan Jawa Tengah**
Rossa Wulandari, Dr. Adyatma Irawan Santosa, S.P., M.Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Brault, V., M. Uzest, B. Monsion, E. Jacquot, and S. Blanc. 2010. Aphids as transport devices for plant viruses. Comptes Rendus Biologies 333(6-7): 524-538.

Bujarski, J., D. Gallitelli, F. Garcia-Arenal, V. Pallas, P. Palukaitis, M. K. Reddy, A. Wang, and ICTV Report Consortium. 2019. ICTV virus taxonomy profile: *Bromoviridae.* Journal of General Virology: 1-2.

Castañeda, V., M. De La Peña, L. Azcárate, I. Aranjuelo, & E. M. Gonzalez. 2018. Functional analysis of the taproot and fibrous roots of *Medicago truncatula*: sucrose and proline catabolism primary response to water deficit. Agricultural Water Management 216(1): 473–483.

Chen, R., S. Meng, A. Wang, F. Jiang, L. Yuan, L. Lei, H. Wang, and W. Fan. 2024. The genomes of seven economic Caesalpinioideae trees provide insights into polyploidization history and secondary metabolite biosynthesis. Plant Communications, 5(9): 100944.

Chen, Y. K., R. Goldbach, and M. Prins. 2002. Inter-and intramolecular recombinations in the *cucumber mosaic virus* genome related to adaptation to alstroemeria. Journal of Virology 76(8): 1-5.

Choi, G. S., J. H. Kim, J. S. Kim, and J. K. Choi. 2004. Characterization of *cucumber mosaic virus* isolated from water chickweed (*Stellaria aquatic*). Plant Pathology Journal 20(2): 131-134.

Colque-Little, C., D. B. Amby, and C. Andreasen. 2021. A review of *Chenopodium quinoa* (Willd.) disease-an updated perspective. Plants 10(6): 1228.

Damayanti T. A., dan S. Wiyono. 2015. Genetic diversity of *cucumber mosaic virus* strain soybean from several areas. Microbiol. Indonesia 9(1):44- 49.

Damayanti, T. A., D. Susilo, S. Nurlaelah, D. Sartiami, T. Okuno, dan K. Mise. 2008. First report of bean common mosaic virus in yam bean (*Pachyrhizus erosus* (L.) Urban) in Indonesia. Journal of General Plant Pathology 74: 438-442.

Damayanti, T. A., dan R. Kartika. 2015. Deteksi virus-virus pada kentang di Jawa Barat dengan menggunakan teknik molekuler. Jurnal Hortikultura 25: 171–179.

Damayanti, T. A., O. J. Alabi, A. Rauf, dan R. A. Naidu. 2010. The occurrence of *Bean common mosaic virus* (BCMV) and *cucumber mosaic virus* (CMV) in yardlong beans in Indonesia. Plant Disease 94(4): 478.

Damayanti, T. A., O. J. Alabi, R. A. Naidu, and A. Rauf. 2009. Severe outbreak of a yellow mosaic disease on the yard long bean in Bogor, West Java. Hayati Journal of Biosciences 16(2): 78-82.

Davis, T. W., and A. N. Thompson. 2024. Begomoviruses associated with okra yellow vein mosaic disease (OYVMD): diversity, transmission mechanism, and management strategies. Molecular Horticulture 4(36): 1-16.

De Blas, C., M. J. Borja, M. Saiz, and J. Romero. 1994. Broad spectrum detection of *Cucumber mosaic virus* (CMV) using the polymerase chain reaction. Journal of Phytopathol 141(3), 323–329.

Deloko, D. C. T., N.G. Chofong, I. M. Ali, I. G. Kachiwouo, F. O. Songolo, A. R. N. Manock, M. Kamgaing, T. Fonkou, and A. P. Njukeng. 2022. Detection of *cucumber mosaic virus* on *Solanum lycopersicum* L. and *Capsicum annuum* L. in the western region on Cameroon. Journal of Agriculture and Food Research 8: 100294.

Dos Santos, I. C., R. D. S. De Souza, I. Toistoy, L. S. Oliveira, and A. Gruber. 2025. Integrating sequence- and structure-based similarity metrics for the demarcation of multiple viral taxonomic level. Viruses 17(5): 642.

UNIVERSITAS
GADJAH MADA
**Karakterisasi Molekuler dan Biologi cucumber mosaic virus pada Tanaman dan Gulma Fabaceae di Daerah
Istimewa Yogyakarta dan Jawa Tengah**
Rossa Wulandari, Dr. Adyatma Irawan Santosa, S.P., M.Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Escalante, C., A. Sanz-Saez, A. Jacobson, K. Otulak-Koziet, E. Koziet, K. S. Balkcom, C. Zhao, and K. Conner. 2024. Plant virus transmission during seed development and implications to plant defense system. Frontiers in Plant Science 15: 1385456.

Escriu, F., K. L. Perry, and F. Garcia-Arenal. 2000. Transmissibility of *cucumber mosaic virus* by *Aphis gossypii* correlates with viral accumulation and is affected by the presence of its satellite RNA. The American Phytopathology Society 90(10): 1068-1072.

Estrada-Castillon, E., J. A. Villarreal-Quintanilla, G. Cuéllar-Rodríguez, L. Torres-Colín, J. A. Encina-Domínguez, J. Sánchez-Salas, G. Muro-Pérez, D. A. González-Cuéllar, O. M. Galván-García, L. G. Rubio-Pequeño, and A. Mora-Olivo. 2024. The *Fabaceae* in Northeastern Mexico (subfamilies Caesalpinioideae (excluding tribe Mimoseae), Cercidoideae, and Detarioideae). Plants 13(17): 2477.

Farzadfar, S., M. Al-Waeli, and R. Pourrahim. 2025. Biological and molecular characterization of recombinant *cucumber mosaic virus* (*Cucumovirus* CMV) isolates from rapeseed in Southern-Eurasia Iraq. Journal of Plant Pathology 107: 1245-1253.

Favara, G. M., V. H. Bello, F. F. Oliveira, C. G. Ferro, H. D. Kraide, E. Y. N. Carmo, E. W. Kitajima, and J. A. M. Rezende. 2023. First report of bean common mosaic virus infecting showy rattlepod and phasey bean plants in Brazil. Journal of Plant Pathology 106(1): 241-244.

Gao, D., X. Wang, S. Fu, and J. Zhao. 2017. Legume plants enhance the resistance of soil to ecosystem disturbance. Frontiers in Plant Science 8: 1295.

Guo, H., L. Gu, F. Liu, F. Chen, F. Ge, and Y. Sun. 2018. Aphid-borne viral spread is enhanced by virus-induced accumulation of plant reactive oxygen species. Plant Physiology 179(1): 143-155.

Hamdayanty, dan T. A. Damayanti. 2014. Infeksi bean common mosaic virus pada umur tanaman kacang panjang yang berbeda. Jurnal Fitopatologi Indonesia 10(6): 181-187.

Hamim, I., J. Y. Suzuki, W. B. Borth, M. J. Melzer, M. M. Wall, and J. S. Hu. 2022. Preserving plant samples from remote locations for detection RNA and DNA viruses. Frontiers in Microbiology 13: 930329.

Hily, M. J., A. Garcia, A. Moreno, M. Plaza, M. D. Wilkinson, A. Fereres, A. Fraile, and F. Garcia-Arenal. 2014. The relationship between host lifespan and pathogen reservoir potential: an analysis in the system *Arabidopsis thaliana-Cucumber mosaic virus*. PLOS Pathogen 10(11): e1004492.

Huang, Y., and J. Xuan. 2024. Aphids as vectors of plant viruses: mechanisms of transmission and host interaction. Molecular Entomology 15(5): 170-178.

Jiang, T., and T. Zhou. 2023. Unraveling the mechanisms of virus-induced symptom development in plants. Plants 12(15): 2830.

Kanapiya, A., U. Amanbayeva, Z. Tulegenova, A. Abash, S. Zhangazin, K. Dyussembayev, and G. Mukiyanova. 2024. Recent advance and challenges in plant viral diagnostics. Frontiers in Plant Science 13(15): 1451790.

Kim, M., R. Jeong, H. Kwak, S. Lee, J. Kim, K. Kim, B. Cha, and H. Choi. 2014. First report of *cucumber mosaic virus* isolated from wild *Vigna angularis* var. *nipponensis* in Korea. The Plant Pathology Journal 30(2): 200-207.

Kulsum, U., S. Hartono, S. Sulandari, dan S. Sumowiyarjo. 2016. Identifikasi molekuler cowpea mild mottle virus pada tanaman kedelai di Jawa. Jurnal Fitopatologi Indonesia 13(6): 224-229.

UNIVERSITAS GADJAH MADA
Karakterisasi Molekuler dan Biologi cucumber mosaic virus pada Tanaman dan Gulma Fabaceae di Daerah Istimewa Yogyakarta dan Jawa Tengah
Rossa Wulandari, Dr. Adyatma Irawan Santosa, S.P., M.Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Kumar, S., G. Stecher, M. Li, C. Knyaz, and K. Tamura. 2018. Mega X: molecular evolutionary genetics analysis across computing platforms. Molecular Biology and Evolution 35(6): 1547-1549.

Kwon, S., S. Han, M. Kim, S. Jang, J. Choi, and J. Seo. 2022. Ethylene emitted by viral pathogen-infected pepper (*Capsicum annuum* L.) plants is a volatile chemical cue that attracts aphid vectors. Frontiers in Plant Science 13: 994314.

Lima, J. A. A., D. E. Purcifull, and M. J. B. Cavalcante. 1986. Double infection of *Clitoria ternatea* with cucumber potyvirus in the state of Ceara, Brazil.Phytopathology, 76:1073.

Li, N., C. Yu, Y. Yin, S. Gao, F. Wang, C. Jiao, and M. Yao. 2020. Pepper crop improvement against *cucumber mosaic virus* (CMV): a review. Frontiers in Plant Science 11: 598798.

Manjunatha, K. T., and A. S. Byadgi. 2018. Study on host range of *cucumber mosaic virus* infecting banana. International Journal of Current Microbiology and Applied Sciences 7: 651-655.

Miftakhurohmah, I. D. N. Nyana, T. A. Damayanti, dan R. Noveriza. 2017. Identifikasi molekuler *cucumber mosaic virus* (CMV) asal tanaman nilam (*Pogostemon cablin*). Jurnal Littri 23(1): 11-17.

Muhire, B. M., A. Varsani, and D. P. Martin. 2014. SDT: A virus classification tool based on pairwise sequence alignment and identity calculation. Plos One 9(9): e108277.

Nagano, H., K. Mise, I. Furusawa, and T. Okuno. 2001. Conversion in the requirement of coat protein in cell-to-cell movement mediated by the *cucumber mosaic virus* movement protein. Journal of Virology 75(17): 8045-8053.

Nair, R. M., A. K. Pandey, A. R. War, B. Hanumantharao, T. Shwe, A. K. M. M. Alam, A. Pratap, S. R. Malik, R. Karimi, E. K. Mbeyagala, C. A. Douglas, J. Rane, and R. Schafleitner. 2019. Biotic and abiotic constraints in mungbean production – progress in genetic improvement. Frontiers in Plant Science 10: 1340.

National Center for Biotechnology Information. 2020. *Cucumber mosaic virus*. Diakses pada hari Senin, 20 Oktober 2025, pukul 17.35 WIB. <https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=12305>

National Center for Biotechnology Information. 2020. *Fabaceae*. Diakses pada hari Senin, 20 Oktober 2025, pukul 17.30 WIB. <https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?command=show&mode=node&id=3803&lvl=>

Odedara, O. O., J. A. Hughes, and E. Ayo-John. 2008. Diagnosis, occurrence and seed transmission studies of viruses infecting four *Centrosema* species in Nigeria. Tropical Science 47(4): 244-252.

Pagan, I. 2022. Transmission through seed: the unknown life of plant viruses. PLOS Pathogen 18(8): e1010707.

Pappas, N., S. Roux, M. Holzer, K. Lamkiewicz, F. Mock, M. Marz, and B. E. Dutilh. 2021. Virus bioinformatics. Encyclopedia of Virology 1: 124-132.

Pavithra, B. S., K. Govin, H. M. Renuka, M. Krishnareddy, S. Jalali, D. K. Samuel, and K. Himabindu. 2019. Characterization of *cucumber mosaic virus* infecting coleus (*Plectranthus barbatus*) in Karnataka. Virus Disease 30(3): 403-412.

Pertiwi, M. A. K. P., S. Hartono, S. Somowiyarjo, S. Sulandari, dan A. Kandito. 2021. Identifikasi molekuler mungbean yellow mosaic India virus dan betasatelit yang berasosiasi dengan gejala mosaic kuning pada kacang panjang di Sleman, Yogyakarta. Jurnal Fitopatologi Indonesia 17(6): 251-260.

UNIVERSITAS
GADJAH MADA
**Karakterisasi Molekuler dan Biologi cucumber mosaic virus pada Tanaman dan Gulma Fabaceae di Daerah
Istimewa Yogyakarta dan Jawa Tengah**
Rossa Wulandari, Dr. Adyatma Irawan Santosa, S.P., M.Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Puppala, N., S. N. Nayak, A. Sanz-Saez, C. Chen, M. J. Devi, N. Nivedita, Y. Bao, G. He, S. M. Traore, D. A. Wright, M. K. Pandey, and V. Sharma. 2023. Sustaining yield and nutritional quality of peanuts in harsh environments: physiological and molecular basis of drought and heat stress tolerance. Frontiers in genetics 14: 1121462.

Qiu, Y., Y. Zhang, Wang, R. Lei, Y. Wu, X. Li, and S. Zhu. 2018. *Cucumber mosaic virus* coat protein induces the development of chlorotic symptoms through interacting with the chloroplast ferredoxin I protein. Scientific Reports 8(1205): 1-11.

Rahim, Y. F., T. A. Damayanti, dan M. Ghulamahdi. 2015. Deteksi virus yang menginfeksi kedelai di Jawa. Jurnal Fitopatologi Indonesia 11(2): 59-67.

Rane, J., A. K. Singh, M. Kumar, K. M. Boraiah, K. K. Meena, A. Pradhan, and P. V. V. Prasad. 2021. The adaptation and tolerance of major cereals and legumes to important abiotic stresses. International Journal of Molecular Sciences 22: 12970.

Rodriguez-Sifuentes, L., J. E. Marszalek, C. Chuck-Hernandez, and S.O. Serna-Saldivar. 2020. Legumes protease inhibitors as biopesticides and their defense mechanisms against biotic factors. International Journal of Molecular Sciences 21(3322): 1-15.

Roosinck, M. J. 2002. Evolutionary history of *cucumber mosaic virus* deduced by phylogenetic analyses. Journal of Virology 76(7): 3382-3387.

Sanchez-Tobar, M. R., R. F. Rivera-Bustamante, D. L. Saavedra-Trejo, R. G. Guevara-Gonzalez, and I. Torres-Pacheco. 2025. Mixed plant viral infections: complementation, interference and their effects, a review. Agronomy 15(3): 620.

Shehata, W. F., Z. Iqbal, T. E. Abdelbaset, K. I. Saker, A. E. E. Shorbagy, A. M. Soliman, M. N. Sattar, and S. M. El-Ganainy. 2023. Identification of a *Cucumber mosaic virus* from *Cucurbita pepo* on new reclamation land in Egypt and the changes induced in pumpkin plants. Sustainability 15(9751): 1-19.

Shi, X., Y. Gao, S. Yan, X. Tang, X. Zhou, D. Zhang, and Y. Liu. 2016. Aphid performance changes with plant defense mediated by *cucumber mosaic virus* titer. Virology Journal 13(70): 1-6.

Siregar, I. A. R. M., dan S. H. Hidayat. 2024. Metode DAS-ELISA dan RT-PCR untuk deteksi potyvirus yang menginfeksi bawang merah. Jurnal Fitopatologi Indonesia 20(5): 255-262.

Srivastava, R., A. Yetgin, and S. Srivastava. 2025. The role of legume roots in carbon sequestration, soil health enhancement, and salinity mitigation under climate change: a comprehensive review. Soil and Tillage Research 253: 10665.

Subekti, D., S H. Hidayat, E. Nurhayati, dan S. Sujiprihati. 2006. Infeksi *cucumber mosaic virus* dan chili veinal mottle virus terhadap pertumbuhan dan hasil tanaman cabai. Hayati 13(2): 53-57.

Sulandari, S., S. Hartono, Y. M. S. Maryudani, dan Y. B. Paradisa. 2014. Deteksi dan sebaran soybean mosaic virus (SMV) dan soybean stunt virus (SSV) di berbagai sentra produksi kedelai di Indonesia. Jurnal Perlindungan Tanaman Indonesia 18(2): 71-78.

Sumartini, E. Uge, dan Y. Baliadi. 2021. Patogen cendawan dan virus terbawa benih kedelai. Balai Penelitian Tanaman Aneka Kacang dan Umbi, Kementerian Pertanian.

Supyani, D. N. Septariani, dan Hadiwiyono. 2020. Symptoms variation of viral infections in yardlong bean. Jurnal HPT Tropika 20(1): 28-36.

UNIVERSITAS
GADJAH MADA
**Karakterisasi Molekuler dan Biologi cucumber mosaic virus pada Tanaman dan Gulma Fabaceae di Daerah
Istimewa Yogyakarta dan Jawa Tengah**
Rossa Wulandari, Dr. Adyatma Irawan Santosa, S.P., M.Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Supyani, S. A. Chandra, F. Rochman, D. N. Septariani, dan S. Widadi. 2017. Occurrence and distribution of *cucumber mosaic virus* in cucurbits in Karanganyar, Central Java, Indonesia. African Journal of Agricultural Research 12(8): 1593-1601.

Surwadinata, A., A. R. Putro, A. Pradhana, F. Shalihah, M. G. Pancasona, R. Saputram M. A. H. Ali, and A. I. Santosa. 2025. Molecular characterization of mungbean yellow mosaic India virus and tomato leaf curl New Delhi virus in Sukoharjo and Magelang Regencies, Indonesia. Jurnal Perlindungan Tanaman Indonesia 29(1): 62-69.

Sutrawati, M., Djamilah, dan A. Kinata. 2012. Infeksi *cucumber mosaic virus* dan chilli veinal mottle virus pada cabai di Kabupaten Rejang Lebong, Bengkulu. Jurnal Fitopatologi Indonesia 8(4): 110-115.

Takahashi, H., M. Tabara, S. Miyashita, S. Ando, S. Kawano, Y. Kanayama, T. Fukuhara, and R. Kormelink. *Cucumber mosaic virus* infection in *Arabidopsis*: a conditional mutualistic symbiont? Frontiers in Microbiology 12: 770925.

Tang, M., and X. Feng. 2022. Bean common mosaic disease: etiology, resistance resource, and future prospects. Agronomy 13(1): 58.

Uge, E., S. Sulandari, S. Hartono, dan S. Sumowiyarjo. 2018. The effect of chitosan application against plant growth and intensity of stunting disease on black pepper (*Pepper nigrum* L.) seedlings. Jurnal Perlindungan Tanaman Indonesia 22(2): 224-232.

Uluer, D. A. 2025. Possible multiple origins of some important characteristics of the keel (papilionate) flowers within fabales. Botanical Journal of the Linnean Society 109: 100-116.

Verma, N., A. K. Singh, L. Singh, S. Kulshreshtha, G. Raikhy, V. Hallan, R. Ram, and A. A. Zaidi. 2004. Occurrence of *cucumber mosaic virus* in *Gerbera jamesonii* in India. Plant Diseases 88(10): 1161.

Vitti, A., I. Pagan, B. Bochicchio, A. D. Stradis, P. Piazzolla, A. Scopa, and M. Nuzzaci. 2022. *Cucumber mosaic virus* is unable to self-assemble in tobacco plants when transmitted by seed. Plants 11(3217): 1-12.

Wadas, I., and I. Domingues. 2025. Systematic review of phylogenetic analysis techniques for RNA viruses using bioinformatics. International Journal of Molecular Sciences 26(5): 2180.

Whitfield, A. E., B. W. Falk, and D. Rotenberg. 2015. Insect vector-mediated transmission of plant viruses. Virology 479-490: 278-289.

Zahra, H. A., N. K. Defiltra, W. Probowati, F. Randa-Zelyut, and A. I. Santosa. 2024. First report of *cucumber mosaic virus* in *Zinnia elegans* in Indonesia. Australasia Plant Disease Notes 19(27): 26-30.

Zhao, J., X. Zhang, Y. Hong, and Y. Liu. 2016. Chloroplast in plant-virus interaction. Frontiers Microbiology 7: 1-10.