DAFTAR PUSTAKA

Adeyose, A.I., O.C. Obi., T.R. Fasola., dan Ayodele, A.F. 2012. Assessment of genetic diversity in two Allium spp. using Random Amplified Polimorphic DNA (RAPD) markers. *J. Med. Plant. Res*. 6:4741-4747.

Akter, M.S., A. Biswas., S.S. Siddique., S. Hossain., dan Ivy, N. 2015. Estimation of genetic diversity in onion (Allium cepa L.). *Agriculturists* 13:26-34.

Ardiyani, M., Sulistiyaningsi, L. D., dan Esthi, Y. N. 2014. Keragaman Genetik Tacca leontopetaloides (L.) Kuntze (taccaceae) dari beberapa Provenansi di Indonesia Berdasarkan marka Inter /Simpel Sequence repeats (ISSR). *Berita Biologi*, 13(1): 85-96

Azhari, H., Azhar, M., dan Othman, R. 2015. Molecular identification of Aquilaria spp. by using inter-simple sequence repeat (ISSR). *AIP Conference Proceedings*, Vol 1678.

Azizah, A. 2009. Perbandingan pola pita amplifikasi DNA daun, bunga dan buah kelapa sawit normal dan abnormal. Skripsi. Fakultas Matematika dan Ilmu Pengetahuan Alam. Institut Pertanian Bogor (IPB).

Azrai, M. 2005. Pemanfaatan marka molekuler dalam proses seleksi pemuliaan tanaman. *J. AgroBiogen* 1:26-37.

Bradford K. 2008. Comparing the ability of two PCR based techniques, RAPD and ISSR to detect low levels of genetic diversity, to detect low levels of genetic diversity. Chicago Botanic Garden, Glencoe, IL. www.chicagobotanic.org/downloads/conservation/Poster1.pdf [12 Juli 2021]

Brown, T. A. 1996. Genetics a Molecular Approach. London: Van Nostrand Reinhold (International).

Charters, Y.M dan Wilkinson, M.J. 2000. The use of self-pollinated progenies as in-groups for thegenetic characterization of cocoa germplasm. *Theor Appl Genetics* 100: 160–166.

Degewione, A., Alamerew, S., dan Tabor, G. 2011. Genetic variability and association of bulb yield and related traits in shallot (Allium cepa var aggregatum DON.) in Ethiopia. *Inter. J. Agri. Res.* 21:1-20.

Denduangboripant, J., Setaphan, S., Suwanprasat, W., dan Panha, S. 2010. Determination of Local Tobacco Cultivars Using ISSR Molecular Marker. *Chiang Mai Journal of Science*, Vol. 37(2): 293-303.

Domayti, F.M., Rania, A.A.Y., Edris, S., Mansour, A., Sabir, G., dan Bahieldin, A. 2011. Molecular markers associated with genetic diversity of some medicinal plants in Sinai. *Journal of Medicinal Plants Research*, 5(10), pp. 200–210.

Fajarwati, M. 2016. Perlukah dibentuk peraturan perundang-undangan mengenai sumber daya genetik? *Jurnal Rechts Vinding Online.* ISSN 2089-9009

Fang, D. Q., dan Roose, M. L. 1997. Identification of Closely Related Citrus Cultivars With Inter-Simple Se-quence Repeats Markers. *Theoretical Applied Genetics* 95:408-417.

Finkeldey, R. 2005. Pengantar Genetika Hutan Tropis. Djamhuri E, Siregar IZ, Siregar UJ & Kertadikara AW, penerjemah. Bogor: IPB Press. Terjemahan dari: An Introduction to Tropical Forest Genetics.

Fu, X.P., Ning, G.G., Gao, L.P., dan Bao, M.Z. 2008. Genetic Diversity of Dianthus Accessions as Assessed Using Two Molecular Marker Systems (SRAPs and ISSRs) and Morphological Traits. *Scientia Horticulturae* 117: 263–270.

Gul, J., Saeed, S., Ahmed, A., Leghari, S.H., Basit, A., Rehman, A., dan Khan, M.Z. 2021. Genetic diversity and morphological variation of Pinus gerardiana along the environmental gradient from Zhob, Balochistan, Pakistan. *Nusantara Bioscience.* Vol. 13, No. 1, pp. 121-128.

Guo, H.B., Huang, K.Y., Zhou, T.S., Wu, Q.H., Zhang, Y.J., dan Liang. 2009. DNA isolation, optimization of ISSR-PCR system and primers screening of Scutellaria baicalensis. *J. Med. Plant Res*. 3:898-901.

Guo. 2014. Molecular Insigths into the Genetic Diversity of Hemarthria compressa Germplasm Collections Native to Southwest China. *Jurnal Molecular*, ISSN 1420-3049.

Gusmiaty., Restu, M., dan Ira, P. 2012. Seleksi Primer untuk Analisis Keragaman Genetik Jenis Bitti (Vitex coffassus). 8(1), 25–29.

Gusmiaty., Restu, M., Asrianny., dan Larekeng, S. H. 2016. Polimorfisme

Penanda RAPD untuk Analisis Keragaman Genetik Pinus merkusii di Hutan Pendidikan Unhas. *Jurnal Natur Indonesia* 16 (2), April 2016: 47–53.

Handoyo, D., dan Rudiretna, A. 2000. Prinsip Umum Dan Pelaksanaan Polymerase Chain Reaction (PCR). *Pusat Studi Bioteknologi – Universitas Surabaya*. Vol. 9, No. 1. 17-29.

Hidayat, R. A., Depamede, S. N., dan Maskur. 2015. dentifikasi Mutasi FecX Pada Gen BMP15 dan Pengaruhnya Terhadap Sifat Prolifik pada Kambing Lokal di Kabupaten Lombok Barat. *Jurnal Ilmu dan Teknologi Peternakan Indonesia*. 1 (1) : 1–10

Hutami, S., Mariska, I., dan Supriati, Y. 2006. Peningkatan keragaman genetik tanaman melalui keragaman somaklonal lanjutan. *Jurnal Agrobiogen.* 2(2): 81-88

IUCN. 2015. IUCN Red List Categories and Criteria. [Online] Diakses dari: http://www.iucnredlist.org/.

Jafronsyah, M. 2012. Keragaman Genetik *Selaginella Ciliaris* di wilayah ekskaresidenan kedu berdasarkan Penanda ISSR (*Inter Simple Sequence Repeat*). Skripsi. Universitas Sebelas Maret. Surakarta.

Kalpana, Duraisamy, Si Hyuk Choi, Tae Ki Choi, Kalaiselvi Senthil, dan Yang Soo Lee. 2012. "Assessment of Genetic Diversity among Varieties of Mulberry Using RAPD and ISSR Fingerprinting." *Scientia Horticulturae* 134:79–87.

Kumar, P. 2009. Potential of molecular markers in plant biotechnology. *Plant Omics J.* 2:141-162.

Kumar, A., Badarinarayan, S., dan Brindavanam, N.B. 2014. Genetic Variability in Two Important Medicinal Plants of India – Oroxylum Indicum & Gmelina Arborea Using RAPD and ISSR Markers. *Indo Global Journal of Pharmaceutical Sciences* 4(3): 217.

Lande, R. C., dan Shannon, S. 1996. The role of genetic variation in adaptation and population persistence in a changing environment. *Evolution* 50:434-437.

Langga, I. F., Restu, M., dan Kuswinanti, T. 2012. Optimalisasi suhu dan lama

inkubasi dalam ekstraksi dna tanaman bitti (Vitex cofassus Reinw) serta analisis keragaman genetik dengan teknik Rapd-PCR. *J. Sains & Teknologi*. 12 (3): 265-276. Issn 1411-4674.

Lanham, P.G., dan Brennan, R.M. 1999. Characterization of the genetic resources of red currant (Ribesrubrum: subg. Ribesia) using anchored microsatellite markers. *Theor Appl Genet* 96:917–921.

Larekeng, S. H., Restu, M., dan Gusmiaty. 2015. The Used of RAPD Marker on Kayu Kuku's (Pericopsis mooniana THW) Breeding Program. International Seminar on Challenges of Sustainable Forest on 26 November 2015. Plantation Development, Yogyakarta.

Lu, J., Hu, X., Liu, J. H., dan Wang. 2011. Genetic diversity and population structure of 151 Cymbidium sinense cultivars. *J. Hortic. For*. 3:104-114

Lucic, I., Rakonjan., Mataruga., Babic., Ristic., dan Drinic. 2011. Application of various methods to analyze genetic diversity of austrian pine (Pinus nigra). *Jurnal Genetika* 43(3):477-486

Meng, L., Yang, H.X., Mao, P.C., Gao, H.W., dan Sun, F.D. 2011. Genetic Diversity Analysis of Arrhenatherum elatius germplasm with Inter-simple Sequence Repeat (ISSR) Markers. *African Journal of Biotechnology* 10(44): 8729-8736.

Mis'al. 2017. Analisis Keragaman Genetik Bambu Parring (Gigantochloa atter) Berdasarkan Penanda Random Amplified Polymorphic DNA (RAPD). Skripsi. Program Studi Kehutanan. Fakultas Kehutanan. Universitas Hasanuddin.

Missio, R., Caixeta, E., Zambolin, E., Zambolin, L., Cruz, C., dan Sakiyama, N. 2010. Polymorphic information content of SSR markers for Coffeaspp. *Crop Breeding and Applied Biotechnology*, 10, 89–94.

Mondal, T.K. 2002. Assesment of Genetic Diversity of Tea (Camelia sinensis L. Kuntze) by Inter-Sequence Repeated Polymerase Reaction. *Euphytica* 128:307-315.

Mulyadiana, A. 2010. Keragaman Genetik Shorea laevis Ridl. di Kalimantan berdasarkan Penanda Mikrosatelit. Skripsi. Fakultas Kehutanan. Institut Pertanian Bogor, Bogor.

Noorani, A., Mondini, L., Rey, N.A., dan Crino P. 2013. Morphological Diversity Assessment In Wild and Cultivated Cardoons. *Acta Horticulturae*, 983 : 47-54.

Pandin, D. S. 2009. Keragaman Genetik Kelapa Dalam Bali (DBI) dan Dalam Sawarna (DSA) Berdasarkan Penanda Random Amplified Polimorphic DNA (RAPD). Balai Penelitian Tanaman Kelapa dan Palma Lain. Manado.

Quian, W., Ge, S., dan Hong, D. Y. 2001. Genetic variation within and among populations of wild rice Oryza granulata from China detected by RAPD and ISSR. Theor. *Appl. Genet*. 102: 440-449.

Rahmah, A. 2013. Hubungan Kekerabatan Aksesi Purwoceng (Pimpinella pruatjanMolkenb.) di Pulau Jawa Berdasarkan Karakter Morfologi dan Molekuler. Tesis. Yogyakarta. UGM.

Rimbawanto, A. dan Widyamoko AYPBC. 2006. Keragaman Genetik Empat Populasi Intsia bijuga Berdasarkan Penanda RAPD dan Implikasinya Bagi Program Konservasi Genetik. *Jurnal Penelitian Hutan Tanaman* Vol. 3 No. 3. Juni 2006.

Riupassa, P.A., Chikmawati, T., Miftahudin., dan Suharsono. 2015. The molecular diversity based ISSR of Durio tanjungpurensis originating from West Kalimantan Indonesia. *Makara J. Sci*. 19:27-33.

Selkoe, K. A., dan Toonen, R.J. 2006. Microsatellites for Ecologists: A Practical Guide to Using and Evaluating Microsatellite Markers. *Ecology Letters*. 9:615-629.

Selvarasu, A., dan Rajamani, K. 2017. Molecular and Agro-Morphological Genetic Diversity Assessment of Gloriosa superba Mutants. *European Journal of Medicinal Plants* 21(1): 1-13.

Sinaga, A., Lollie, A. P. P., dan Mbue, K. B. 2017. Analisis Pola Pita Andaliman (Zanthoxylum Acanthopodium D.C) Berdasarkan Primer OPD 03, OPD 20, OPC 07, OPM 20, OPN 09. *Jurnal Agroekoteknologi FP USU*. Vol.5.No.1, (8): 55- 64.

Son, J.H., Park, K.C., Lee, S., Kim, J.H., dan Kim, M.S. 2012. Species relationship among Allium species by ISSR analysis. *Hort. Environ.*

Biothechnol. 53:256-262.

Sudarmonowati, E., Yulita, K.S., Partomihardjo, T., dan Wardani, W. 2020. Daftar Merah Tumbuhan Indonesia 1:50 Jenis Pohon Kayu Komersial. LIPI Press. Jakarta

Sulassih. 2011. Analisis hubungan kekerabatan manggis (Garcina mangostana L.) menggunakan penanda morfologi dan molekuler (ISSR) terhadap kerabat dekatnya. Tesis. Sekolah Pascasarjana. Institut Pertanian Bogor. Bogor.

Suryanto. 2003. Melihat Keanekaragaman Organisme Melalui Beberapa Teknik Genetika Molekuler. Digitized by usu digital library. 20 Juli 2021.

Sutrisna, T., Umar, M.R., Suhadiyah, S., dan Santosa, S. 2018. Keanekaragaman dan Komposisi Vegetasi Pohon pada Kawasan Air Terjun Takapala dan Lanna di Kabupaten Gowa Sulawesi Selatan. *Jurnal Biologi Makassar*, 3(1), 12-18.

Svitlana, Z., Oksana, F., Igor, O., Rahmans, I.U., Khan, W., dan Ali, K. 2018. Palyno morphological Study of the Genus Sonchus L. (Asteraceae) Species of the Flora of Ukraine. *International Journal of Biosciences*, 12 (4): 134-144.

Tautz, D., dan Renz, M. 1984. Simple Sequences are Ubiquitous Repetitive Components of Eukaryotic Genomes. *Nucleic Acids Research*, 12:4127-4138.

Tar'an, B., Zhang, B., Warkentin, T., Tullu, A., dan Vandenberg, A. 2005. Genetic diversity among varieties and wild species accessions of pea (Pisum sativumL.) based on molecular markers, and morphological and physiological characters. *Genome*. 48:257-272.

Touil, L., Bao, A.K., Wang, S.M., dan Ferchichi, A. 2016. Genetic diversity of Tunisian and Chinese Alfalfa (Medicago sativa L.) revealed by RAPD and ISSR markers. *American Journal of Plant Sciences*, 7(6), pp. 967–979

Trojanowska, M.R., dan Bolibok, H. 2004. Characteristics and comparison of three classes of microsatellite-based markers and their application in plants. *Cellular Mol. Biol. Lett*. 9:221-238.

Weising, K., Nybom, H., Wolff, K., dan Kahl, G. 2005. DNA Fingerprinting in

Plants Principles, Methods and Applications. *Boca Raton: CRC Pr.*

Widiastuti, A., Sobir., dan Suhartanto, M. R. 2013. Analisis Keragaman Genetik Manggis (Garcinia mangostana) diiradiasi dengan Sinar Gamma berdasarkan Penanda ISSR. *Bioteknologi* 10 (1) : 15-22.

Widyatmoko, A.Y.P.B.C., Lejo, E.S., Prasetyaningsih, A dan Rimbawanto, A. 2010. Keragaman Genetik PopulasiAraucaria cunninghamii Menggunakan Penanda RAPD (Random Ampified Polymorphic DNA). *Jurnal Pemuliaan Tanaman* 4(2): 63–77.

Wirnas, D. 2005. Analisis Kuantitatif dan Molekular dalam Rangka Mempercepat Perakitan Varietas Baru Kedelai Toleran terhadap Intensitas Cahaya Rendah. Bogor. Sekolah Pascasarjana IPB.

Wolff, K., Zietkiewicz, E., dan Hofstra, H. 1995. Identification of Chrysanthemum Cultivars and Stability of DNA Fingerprint Patterns. *Theor. Appl. Genet*. 91:439–447.

Wu, Y.B., Zheng, L.J., Yi, J., Wu, J.G., Chen, T.Q., dan Wu, J.Z. 2013. Quantitative and chemical fingerprint analysis for the quality evaluation of Receptaculum nelumbinis by RP-HPLC coupled with hierarchical clustering analysis. *International Journal of Molecular Science*, 14(1), pp. 1999–2010.

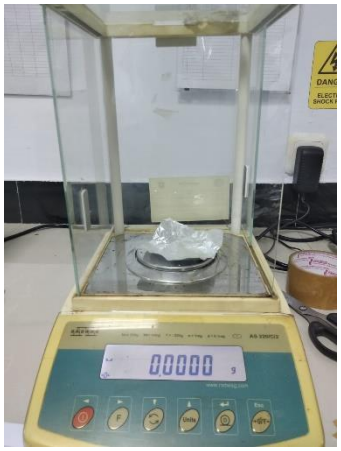
Wulandari, A.S., Subiakto, A. dan Novan, R. 2015. Stek Pucuk Merawan (Hopea cernua Teijsm. & Binn.) Dengan Perlakuan Media Tumbuh dan Hormon. *Jurnal Silvikultur Tropika*. 06(03):190-195.

Yusuf, Z. K. 2010. Polymerase Chain Reaction (PCR). Staf Pengajar Jurusan Kesehatan Masyarakat FIKK Universitas Negeri Gorontalo. Saintek Vol 5, No 6.

Zietkiewicz, E., Rafalski, A., dan Labuda, D. 1994. Genome finger printing by Inter simple sequence repeat (ISSR)–anchored polymerase chain reaction amplification. *Genomics* 20: 176–183

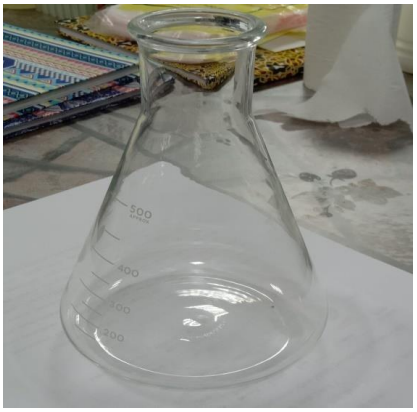
Lampiran

Lampiran 1. Dokumentasi alat yang digunakan



Gambar 1. Timbangan Analitik

Gambar 2. *Vortex*



Gambar 3. Gelas *Erlenmeyer*

Gambar 4. Gelas Ukur

Gambar 5. Elektroforesis

Gambar 6. *UV Transiluminator*

Gambar 7. Mesin PCR

Gambar 8. Mikropipet

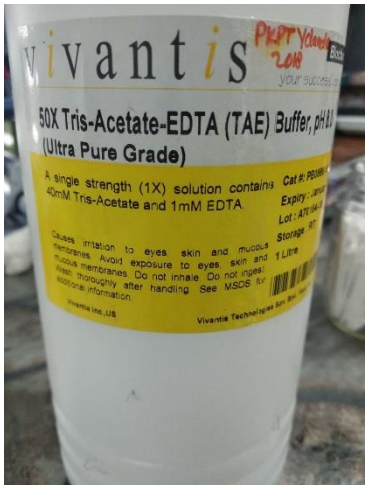
Gambar 9. *Centrifuge*

Gambar 10. *Spin down*

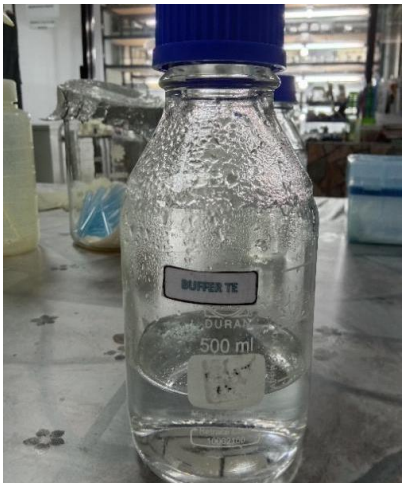
Gambar 11. Cetakan Agar

Gambar 12. *Microwave*

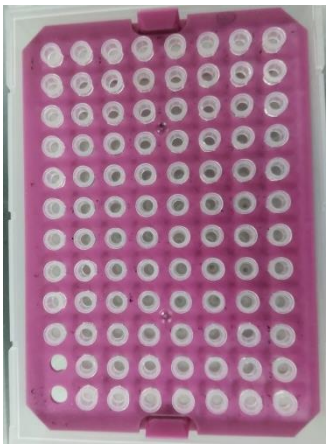
Lampiran 2. Dokumentasi bahan yang digunakan



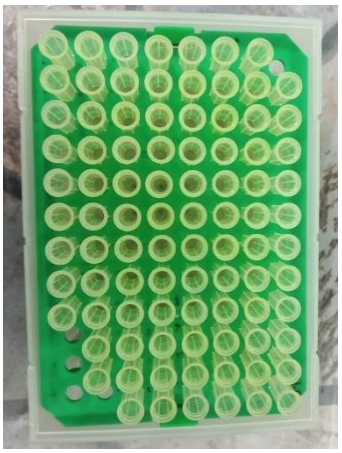
Gambar 1. Larutan Buffer TAE



Gambar 2. Larutan Buffer TE

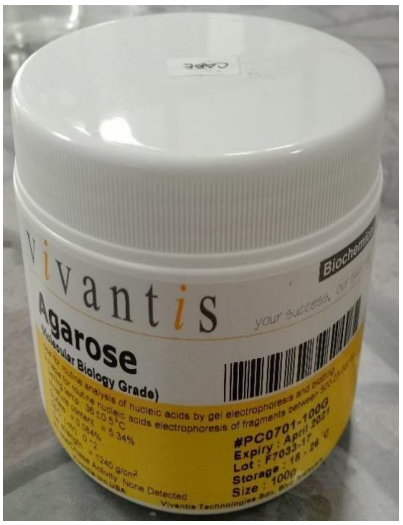


Gambar 3. Tip Putih

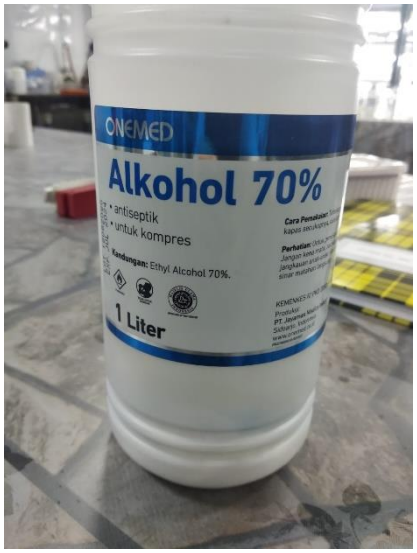


Gambar 4. Tip Kuning

Gambar 5. ddH_2O Steril



Gambar 6. *Agarose*



Gambar 8. *Aquades*

Gambar 7. Alkohol

Gambar 9. *Glove*

Lampiran 3. Dokumentasi Penelitian