

## DAFTAR PUSTAKA

- Abidi, F., T. Girault, O. Douillet, G. Guillemain, G. Sintes, M. Laffaire, H. B. Ahmed, S. Smiti, L. Huche-Theiler & N. Leduc. 2011. *Blue light effects on rose photosynthesis and photomorphogenesis. Plant Biology*. Vol 15(1):67-74.
- Al-Mayahi, A. M. W. 2016. *Effect of red and blue light emitting diodes “CRB-LED” on in vitro organogenesis of date palm (Phoenix dactylifera L.) cv. Alshakr. World J Microbiol Biotechnol* 32:160.
- Alfarykky, V., H. Suhardjono & Y. Keontjoro. 2020. Pengaruh Lama Penyinaran Dan Warna Lampu Led Terhadap Pertumbuhan Dan Hasil Tanaman Bayam (*Amaranthus spp.*). *Jurnal Fakultas Pertanian UPN Veteran Jawa Timur*.
- Ansori, M. L. 2021. Pengaruh Jenis Media Tanam Terhadap Aklimatisasi Planlet Anggrek Bulan (*Phalaenopsis sp.*) Hibrida. *Skripsi*. Universitas Islam negeri Sultan Syarif Kasim Riau. Pekanbaru.
- Apriliyana, R. & B. F Wahdiah. 2021. Perbanyakkan anggrek Dendrobium sp. secara in vitro: Faktor-faktor keberhasilannya. *Filogeni: Jurnal Mahasiswa Biologi*. Vol 1 (2).
- Ariany, S. P., N. Sahiri & A. Syakur. 2013. Pengaruh Kuantitas Cahaya Terhadap Pertumbuhan dan Kadar Antosianin Daun Dewa (*Gynura pseudochina* (L.) DC) Secara *In Vitro*. *Jurnal Agrotekbis* 1 (5): 413-420.
- Basri, A. H H. 2016. Kajian Pemanfaatan Kultur Jaringan Dalam Perbanyakkan Tanaman Bebas Virus. *Agrica Ekstensia*. Vol. 10 (1): 64-73.
- Batista, D. S., S. H. S. Felipe, T. D. Silva, K. M. Casto, T. C. M. Rodrigues, N. A. Miranda, A. M. Rios, D. V. Faria, E. A. Fortini, K. Chagas, G. T. Silva, G. T. Xavier, A. D. Arencibia & W. C. Otoni. 2018. *Light quality in plant tissue culture: does it matter?. In Vitro Cellular & Developmental Biology-Plant*.
- Bello-Bello, J. J., J. A. Perez-Sato, C. A. Cruz-Cruz & E. Martinez-Estrada. 2017. *Micropropagation Light-Emitting Diodes: Progress in Plant Micropropagation. IntechOpen*.
- Cahyani, A. C. 2018. Pengaruh Pemberian Auksin Pada Media Agar Terhadap Pertumbuhan Tanaman Anggrek Bulan (*Phalaenopsis sp.*) Secara *In Vitro* Sebagai Sumber Pembelajaran Biologi. *Skripsi*. Universitas Muhammadiyah Malang. Malang.
- Chen, Y. M., J. Z. Huang, T. W. Hou & I. C. Pan. 2019. *Efects of light intensity and plant growth regulators on callus proliferation and shoot regeneration in the ornamental succulent Haworthia. Botanical Studies*. Vol 60 (10).
- Dwiyani, R. 2015. *Kultur Jaringan Tanaman*. Denpasar: Pelawa Sari.
- Fajerska, E. H. & R. Wojciechowska. 2017. *Impact of Light-Emitting Diodes (LEDs) on Propagation of Orchids in Tissue Culture. Light Emitting Diodes for Agriculture: 305-320*.

- Fallah, F. & D. Kahrizi. 2015. *Effect of Light Spectrum and Intensity on Growth of Grape (Vitis vinifera) Under In Vitro Conditions*. *Journal of Applied Biotechnology Reports*. Vol 3(4): 495-499.
- Ferreira, L. T., M. M. A. Silva, C. Ulisses, T. R. Camaran & L. Willadino. 2016. Using LED Lightning in Somatic Emrbyogenesis and Micropropagation of an Elite Sugarcane Variety and Its Effect on Redox Metabolism During Acclimatization. *Plant Cell Tissue Organ Culture*.
- George, E. F. & P. D. Sherrington. 1984. *Plant Propagation by Tissue Culture: Handbook and Directory of Commercial Laboratories*. Exegetics Limited.
- Gil, C. S., S. J. Kwon, H. Y. Jeong, C. Lee, O. J. Lee & S. H. Eom. 2021. *Blue Light Upregulates Auxin Signaling and Stimulates Root Formation in Irregular Rooting of Rosemary Cuttings*. *Journal Agronomy*. Vol 1(11) 1725: 1-11.
- Goncalves JFDC, UMD Santos Junior, & EAD Silva. 2008. *Evaluation of a portable chlorophyll meter to estimate chlorophyll concentrations in leaves of tropical wood species from Amazonian forest Hoehnea*. Vol 35(2) 185-188.
- Gupta, S. D & B. Jatothu. 2013. *Fundamentals and applications of light-emitting diodes (LEDs) in in vitro plant growth and morphogenesis*. *Plant Biotechnol Rep*. Vol 7: 211-220.
- Handayani, T. T. & E. Pramono. 2021. Pengamatan Anatomi Paradermal Secara Kuantitatif Dan Deskriptif Daun Anggrek Dendrobium discolor Dan Phalaenopsis amabilis. *Laporan Akhir Penelitian Dasar*. Universitas Lampung. Bandar Lampung.
- Hazwani, N. 2021. Pengaruh Lama Paparan Cahaya LED Merah Dan Biru Terhadap Pertumbuhan Tanaman Tomat (*Solanum lycopersicum* L.) Pada Sistem Indoor. *Skripsi*. Universitas Islam Negeri Maulana Malik Ibrahim. Malang.
- Isda, M. N. & S. Fatonah. 2014. Induksi Akar Pada Eksplan Tunas Anggrek *Grammatophylum scriptum* var. *citrinum* Secara *In Vitro* Pada Media MS Dengan Penambahan NAA dan BAP. *Al-Kaunyah Jurnal Biologi* Vol 7(2).
- Isnaini, V. A., R. P. Wirman & I. Wardhana. 2020. Karakteristik dan Efisiensi Lampu *Light Emiting Dioda* (LED) sebagai Lampu Hemat Energi. *Prosiding Seminar Nasional MIPA dan Pendidikan MIPA*.
- Jo, E. A., R. K. Tewari, E. J. Hahn & K. Y. Paek. 2008. *Effect of photoperiod and light intensity on in vitro propagation of Alocasia amazonica*. *Plant Biotechnol*. Vol 2: 207-212.
- Khonakdari, M. R., H. Rezaost, R. Heydari & M. H. Mirjalili. 2020. *Effect of photoperiod and plant growth regulators on in vitro mass bulblet proliferation of Narcissus tazetta L. (Amaryllidaceae), a potential source of galantamine*. *Plant Cell, Tissue and Organ Culture (PCTOC)*. Vol 142(1): 187-199.

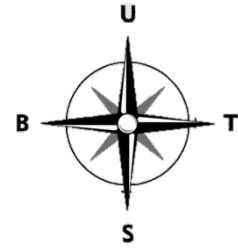
- Lestari, E. G. 2006. Hubungan antara Stomata dengan Ketahanan Kekeringan pada Somaklon Padi Gajahmungkur, Towuti, dan IR 64. *Biodiversitas* 7(1): 44-48.
- Li, H., L. Zhou, S. Wu, L. Liu, M. Huang, S. Lin & G. Ding. 2019. *Effects of LED light on Acacia melanoxylon bud proliferation in vitro and root growth ex vitro*. *Open Life Sci.* Vol 14: 349-357.
- Lin, Y., J. Li, B. Li, T. He & Z. Chun. 2011. *Effects of light quality on growth and development of protocorm-like bodies of Dendrobium officinale in vitro*. *Plant Cell Tissue Organ Culture*. Vol 105(1): 329-335.
- Maulid, R. R. & A. N. Laily. 2015. Kadar Total Pigmen Klorofil dan Senyawa Antosianin Ekstrak Kastuba (*Euphorbia pulcherrima*) Berdasarkan Umur Daun. *Seminar Nasional Konservasi dan Pemanfaatan Sumber Daya Alam*.
- Miler, N., D. Kulus, A. Wozny, D. Rymarz, M. Hajzer, K. Wierzbowski, R. Nelke & L. Szeffs. 2017. *Application of wide-spectrum light-emitting diodes in micropropagation of popular ornamental plant species: a study on plant quality and cost reduction*. *In Vitro Cellular & Developmental Biology-Plant*. Vol 55: 99-108.
- Nasaruddin & M. Yunus. 2012. *Fisiologi Tumbuhan*. Makassar: Masagena Press.
- Nasaruddin., T. Nirwana & R. Ifayanti. 2019. *Fisiologi Tumbuhan: Fitokrom dan Hormon Pertumbuhan*. Makassar: Fiscus Press.
- Nhut, D. T. & N. B. Nam. 2010. *Light-emitting Diodes (LEDs): An Artificial Lighting Source for Biological Studies*. *Proceedings of The 3<sup>rd</sup> International Conference on The Development of BME in Vietnam*.
- Nurunisa, D., A.B. Sasongko & A. Indrianto. 2018. Pengaruh Warna Cahaya Light-Emitting Diodes (LED) Intensitas Rendah Dan Cekaman Dingin Terhadap Pertumbuhan Vegetatif Anggrek *Phalaenopsis* Hibrida. *Jurnal Biota*. Vol 4(1): 41- 48.
- Nofrianinda, V., F. Yulianti & E. Agustina. 2017. Pertumbuhan Planlet Stroberi (*Fragaria ananassa* D) Var. Dorit pada Beberapa Variasi Media Modifikasi *In Vitro* di Balai Penelitian Jeruk dan Buah Subtropika (BALITJESTRO). *BIOTROPIC The Journal of Tropical Biology*. Vol 1(1).
- Paek, K. Y., E. J. Hahn & S. Y. Park. 2011. *Micropropagation of Phalaenopsis Orchids via Protocorms and Protocorm-Like Bodies*. *Methods in Molecular Biology* 710: 293-306.
- Pangestu, F., S. A. Aziz & Dewi, S. 2014. Karakterisasi Morfologi Anggrek *Phalaenopsis* Hibrida. *Jurnal Hortikultura Indonesia*. Vol 5(1): 29-35.
- Perkasa, A. Y., T. Siswanto, F. Shintarika & T. G. Aji. 2017. Studi Identifikasi Stomata pada Kelompok Tanaman C3, C4 dan CAM. *Jurnal Pertanian Presisi*. Vol 1(1): 59-72.
- Pratiwi, R. S., L. A. M. Siregar & I. Nuriadi. 2015. Pengaruh Lama Penyinaran dan Komposisi Media terhadap Mikropropagasi Tanaman Karet (*Hevea brasiliensis* Muell. Arg.). *Jurnal Agroteknologi*. Vol 4(1): 1762-1767.

- Purwidyasari, Y. C., A. Muhawarni & D. Siswanto. Optimasi Penyerapan Formaldehid Dari Asap Rokok Oleh *Euphorbia milii* Des Moul. Dan *Sansevieria trifasciata* Prain Menggunakan Light Emitting Diode (LED) Merah-Biru. *Biotropika: Journal of Tropical Biology*. Vol 8(3): 144-151.
- Putra, R. R., I. S. Mercuriani & E. Semiarti. 2016. Pengaruh Cahaya dan Temperatur Terhadap Pertumbuhan Tunas dan Profil Protein Tanaman Anggrek *Phalaenopsis amabilis* Transgenik Pembawa Gen *Ubipro*::PaFT. *Bioeksperimen*. Vol 2(2).
- Rezkiana, N., M. Yunus, Nasaruddin, R. Ifayanti & Kurniawan. 2021. *Physiological Responses of Clove Seedlings Applied With Different Microbial Consortium in The Rhizosphere and Phyllosphere*. *IOP Conference Series: Earth and Environmental Science* 807.
- Rohman, M. 2019. Budidaya Anggrek Bulan (*Phalaenopsis amabilis*) di PT Anugerah Anggrek Nusantara. *Skripsi*. Politeknik Pertanian dan Peternakan Mapena Tuban.
- Shimazaki, K., M. Doi, S. M. Assman & T. Kinoshita. 2007. *Light Regulation of Stomatal Movement*. *Annual Review of Biology*. Vol 58: 219-247.
- Sitompul, S.M., dan B. Guritno, 1995. *Analisis Pertumbuhan Tanaman*. Gadjah Mada University Press. Yogyakarta.
- Susilo, D. E. H. 2015. Identifikasi Nilai Konstanta Bentuk Daun Untuk Pengukuran Luas Daun Metode Panjang Kali Lebar Pada Tanaman Hortikultura di Tanah Gambut. *Anterior Jurnal*. Vol 14(2): 139-146.
- Urban, T. C., E. H. Fajerska & A. Swiderski. 2007. *Effect Of Light Wavelength On In Vitro Organogenesis Of A Cattleya Hybrid*. *Acta Biologica Cracoviensia*. Vol 49(1): 113-118.
- Verma, R., M. L. Jakhar, & R. Kumar. 2019. *Effect of Photoperiod on In vitro Culture of Guggul (Commiphora wightii Arnott) – A Medicinal Plant*. *International Journal of Current Microbiology and Applied Sciences*. Vol 8(4):1844-1851.
- Vieira, L. N., H. P. F. Fraga, K. G. Anjos, C. C. Puttkammer, R. F. Scherer, D. A. Silva & M. P. Guerra. 2015. *Light-emitting diodes (LED) increase the stomata formation and chlorophyll content in Musa acuminata (AAA) 'Nanicão Corupa' in vitro plantlets*. *Theor. Exp. Plant Physiol*.
- Xu, Y., M. Yang, F. Cheng, S. Liu & Y. Liang. 2020. *Effects of LED photoperiods and light qualities on in vitro growth and chlorophyll fluorescence of Cunninghamia lanceolate*. *BMC Plant Biology*. Vol 20:269.
- Yu, L. L., C. M. Song, L. J. Sun, Z. G. Xu & C. M. Tang. 2020. *Effects of light-emitting diodes on tissue culture plantlets and seedlings of rice (Oryza sativa L.)*. *Journal of Integrative Agriculture*. Vol 19(7): 1743-1754.
- Yuwono, T. 2016. *Bioteknologi Pertanian*. Gadjah Mada University Press: Yogyakarta.

- Yuniardy, F. 2019. Aplikasi Dimmer Switch pada Rak Kultur Sebagai Pengatur Kebutuhan Intesitas Cahaya Optimum Bagi Tanaman *In Vitro*. *Indonesian Journal of Laboratory*. Vol 2(1): 8-13.
- Yusnita. 2015. *Kultur Jaringan Tanaman: Sebagai Teknik Penting Bioteknologi untuk Menunjang Pembangunan Pertanian*. Aura Publishing: Bandar Lampung.
- Zacchini, M., S. Mornini & C. Vitagliano. 1997. *Effect of photoperiod on some stomatal characteristics of in vitro cultured fruit tree shoots*. *Plant Cell, Tissue, and Organ Culture*. Vol 49 (1): 195-200.
- Zulkaidhah., Muslimin, A. Hapid, B. Toknok. 2018. Upaya Konservasi Tanaman Hias Anggrek Melalui Perbanyakan Secara Vegetatif dan Kultur Jaringan.

# LAMPIRAN

## DENAH PERCOBAAN



6 JAM

|         |         |         |
|---------|---------|---------|
| w1c0 u1 | w1c0 u2 | w1c0 u3 |
| w1c1 u1 | w1c1 u2 | w1c1 u3 |
| w1c2 u1 | w1c2 u2 | w1c2 u3 |
| w1c3 u1 | w1c3 u2 | w1c3 u3 |

12 JAM

|         |         |         |
|---------|---------|---------|
| w2c0 u1 | w2c0 u2 | w2c0 u3 |
| w2c1 u1 | w2c1 u2 | w2c1 u3 |
| w2c2 u1 | w2c2 u2 | w2c2 u3 |
| w2c3 u1 | w2c3 u2 | w2c3 u3 |

18 JAM

|         |         |         |
|---------|---------|---------|
| w3c0 u1 | w3c0 u2 | w3c0 u3 |
| w3c1 u1 | w3c1 u2 | w3c1 u3 |
| w3c2 u1 | w3c2 u2 | w3c2 u3 |
| w3c3 u1 | w3c3 u2 | w3c3 u3 |

Gambar Lampiran 1. Denah Penelitian

**Tabel Lampiran 1a. Rata-rata Total Jumlah Daun (helai) pada Umur 1 Bulan Setelah Perlakuan**

| Perlakuan | Ulangan |        |        | Total  | Rata-rata |       |
|-----------|---------|--------|--------|--------|-----------|-------|
|           | I       | II     | III    |        |           |       |
| w1        | c0      | 13,00  | 14,00  | 11,00  | 38,00     | 12,67 |
|           | c1      | 13,00  | 13,00  | 14,00  | 40,00     | 13,33 |
|           | c2      | 11,00  | 15,00  | 11,00  | 37,00     | 12,33 |
|           | c3      | 13,00  | 12,00  | 14,00  | 39,00     | 13,00 |
| Sub Total |         | 50,00  | 54,00  | 50,00  | 154,00    |       |
| w2        | c0      | 14,00  | 12,00  | 13,00  | 39,00     | 13,00 |
|           | c1      | 12,00  | 12,00  | 12,00  | 36,00     | 12,00 |
|           | c2      | 12,00  | 12,00  | 12,00  | 36,00     | 12,00 |
|           | c3      | 12,00  | 13,00  | 12,00  | 37,00     | 12,33 |
| Sub Total |         | 50,00  | 49,00  | 49,00  | 148,00    |       |
| w3        | c0      | 12,00  | 13,00  | 15,00  | 40,00     | 13,33 |
|           | c1      | 14,00  | 14,00  | 14,00  | 42,00     | 14,00 |
|           | c2      | 13,00  | 12,00  | 15,00  | 40,00     | 13,33 |
|           | c3      | 12,00  | 12,00  | 13,00  | 37,00     | 12,33 |
| Sub Total |         | 51,00  | 51,00  | 57,00  | 159,00    |       |
| Total     |         | 151,00 | 154,00 | 156,00 | 461,00    | 12.81 |

**Tabel Lampiran 1b. Sidik Ragam Rata-rata Total Jumlah Daun pada Umur 1 Bulan Setelah Perlakuan**

| SK        | db   | JK      | KT     | Fhit |    | F Tabel |      |
|-----------|------|---------|--------|------|----|---------|------|
|           |      |         |        |      |    | 0.05    | 0.01 |
| Kelompok  | 2    | 1,0556  | 0,5278 | 0,39 | tn | 3,44    | 5,72 |
| Perlakuan | 11   | 12,9722 | 1,1793 | 0,88 | tn | 2,26    | 3,18 |
| Faktor W  | 2    | 5,0556  | 2,5278 | 1,88 | tn | 3,44    | 5,72 |
| Faktor C  | 3    | 2,3056  | 0,7685 | 0,57 | tn | 3,05    | 4,82 |
| W*C       | 6    | 5,6111  | 0,9352 | 0,69 | tn | 2,55    | 3,76 |
| Galat     | 22   | 29,6111 | 1,3460 |      |    |         |      |
| Total     | 35   | 43,6389 |        |      |    |         |      |
| KK        | 9,1% |         |        |      |    |         |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata



**Tabel Lampiran 1c. Rata-rata Total Jumlah Daun (helai) pada Umur 2 Bulan Setelah Perlakuan**

| Perlakuan | Ulangan |        |        | Total  | Rata-rata |       |
|-----------|---------|--------|--------|--------|-----------|-------|
|           | I       | II     | III    |        |           |       |
| w1        | c0      | 15,00  | 16,00  | 14,00  | 45,00     | 15,00 |
|           | c1      | 14,00  | 14,00  | 15,00  | 43,00     | 14,33 |
|           | c2      | 12,00  | 16,00  | 12,00  | 40,00     | 13,33 |
|           | c3      | 13,00  | 13,00  | 15,00  | 41,00     | 13,67 |
| Sub Total |         | 54,00  | 59,00  | 56,00  | 169,00    |       |
| w2        | c0      | 15,00  | 14,00  | 15,00  | 44,00     | 14,67 |
|           | c1      | 14,00  | 15,00  | 15,00  | 44,00     | 14,67 |
|           | c2      | 13,00  | 14,00  | 15,00  | 42,00     | 14,00 |
|           | c3      | 12,00  | 13,00  | 13,00  | 38,00     | 12,67 |
| Sub Total |         | 54,00  | 56,00  | 58,00  | 168,00    |       |
| w3        | c0      | 16,00  | 17,00  | 17,00  | 50,00     | 16,67 |
|           | c1      | 16,00  | 14,00  | 16,00  | 46,00     | 15,33 |
|           | c2      | 16,00  | 15,00  | 16,00  | 47,00     | 15,67 |
|           | c3      | 15,00  | 16,00  | 13,00  | 44,00     | 14,67 |
| Sub Total |         | 63,00  | 62,00  | 62,00  | 187,00    |       |
| Total     |         | 171,00 | 177,00 | 176,00 | 524,00    | 14,56 |

**Tabel Lampiran 1d. Sidik Ragam Rata-rata Total Jumlah Daun pada Umur 2 Bulan Setelah Perlakuan**

| SK        | db   | JK      | KT     | Fhit |    | F Tabel |      |
|-----------|------|---------|--------|------|----|---------|------|
|           |      |         |        |      |    | 0.05    | 0.01 |
| Kelompok  | 2    | 1,7222  | 0,8611 | 0,70 | tn | 3,44    | 5,72 |
| Perlakuan | 11   | 38,2222 | 3,4747 | 2,84 | *  | 2,26    | 3,18 |
| Faktor W  | 2    | 19,0556 | 9,5278 | 7,78 | ** | 3,44    | 5,72 |
| Faktor C  | 3    | 15,1111 | 5,0370 | 4,11 | *  | 3,05    | 4,82 |
| W*C       | 6    | 4,0556  | 0,6759 | 0,55 | tn | 2,55    | 3,76 |
| Galat     | 22   | 26,9444 | 1,2247 |      |    |         |      |
| Total     | 35   | 66,8889 |        |      |    |         |      |
| KK        | 7,6% |         |        |      |    |         |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 1e. Rata-rata Total Jumlah Daun (helai) pada Umur 3 Bulan Setelah Perlakuan**

| Perlakuan | Ulangan |        |        | Total  | Rata-rata |       |
|-----------|---------|--------|--------|--------|-----------|-------|
|           | I       | II     | III    |        |           |       |
| w1        | c0      | 15,00  | 16,00  | 14,00  | 45,00     | 15,00 |
|           | c1      | 15,00  | 14,00  | 15,00  | 44,00     | 14,67 |
|           | c2      | 12,00  | 16,00  | 13,00  | 41,00     | 13,67 |
|           | c3      | 13,00  | 14,00  | 15,00  | 42,00     | 14,00 |
| Sub Total |         | 55,00  | 60,00  | 57,00  | 172,00    |       |
| w2        | c0      | 18,00  | 15,00  | 16,00  | 49,00     | 16,33 |
|           | c1      | 15,00  | 16,00  | 16,00  | 47,00     | 15,67 |
|           | c2      | 13,00  | 15,00  | 15,00  | 43,00     | 14,33 |
|           | c3      | 13,00  | 16,00  | 14,00  | 43,00     | 14,33 |
| Sub Total |         | 59,00  | 62,00  | 61,00  | 182,00    |       |
| w3        | c0      | 17,00  | 17,00  | 18,00  | 52,00     | 17,33 |
|           | c1      | 16,00  | 16,00  | 18,00  | 50,00     | 16,67 |
|           | c2      | 18,00  | 16,00  | 17,00  | 51,00     | 17,00 |
|           | c3      | 15,00  | 16,00  | 13,00  | 44,00     | 14,67 |
| Sub Total |         | 66,00  | 65,00  | 66,00  | 197,00    |       |
| Total     |         | 180,00 | 187,00 | 184,00 | 551,00    | 15,31 |

**Tabel Lampiran 1f. Sidik Ragam Rata-rata Total Jumlah Daun pada Umur 3 Bulan Setelah Perlakuan**

| SK        | db   | JK      | KT      | Fhit | F Tabel |      |      |
|-----------|------|---------|---------|------|---------|------|------|
|           |      |         |         |      | 0.05    | 0.01 |      |
| Kelompok  | 2    | 2,0556  | 1,0278  | 0,67 | tn      | 3,44 | 5,72 |
| Perlakuan | 11   | 51,6389 | 4,6944  | 3,04 | *       | 2,26 | 3,18 |
| Faktor W  | 2    | 26,3889 | 13,1944 | 8,55 | **      | 3,44 | 5,72 |
| Faktor C  | 3    | 18,0833 | 6,0278  | 3,91 | *       | 3,05 | 4,82 |
| W*C       | 6    | 7,1667  | 1,1944  | 0,77 | tn      | 2,55 | 3,76 |
| Galat     | 22   | 33,9444 | 1,5429  |      |         |      |      |
| Total     | 35   | 87,6389 |         |      |         |      |      |
| KK        | 8,1% |         |         |      |         |      |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 2a. Rata-rata Jumlah Akar pada Umur 1 Bulan Setelah Perlakuan**

| Perlakuan | Ulangan |       |       | Total | Rata-rata |      |
|-----------|---------|-------|-------|-------|-----------|------|
|           | I       | II    | III   |       |           |      |
| w1        | c0      | 1,33  | 2,33  | 1,33  | 5,00      | 1,67 |
|           | c1      | 1,33  | 1,33  | 1,00  | 3,67      | 1,22 |
|           | c2      | 1,67  | 2,33  | 1,67  | 5,66      | 1,89 |
|           | c3      | 1,33  | 2,67  | 1,67  | 5,67      | 1,89 |
| Sub Total |         | 5,66  | 8,66  | 5,67  | 20,00     |      |
| w2        | c0      | 2,00  | 1,67  | 1,67  | 5,33      | 1,78 |
|           | c1      | 0,67  | 0,67  | 0,67  | 2,00      | 0,67 |
|           | c2      | 2,00  | 2,33  | 1,67  | 6,00      | 2,00 |
|           | c3      | 2,67  | 2,00  | 2,00  | 6,67      | 2,22 |
| Sub Total |         | 7,33  | 6,67  | 6,00  | 20,00     |      |
| w3        | c0      | 1,33  | 1,00  | 2,33  | 4,67      | 1,56 |
|           | c1      | 1,67  | 1,00  | 1,67  | 4,33      | 1,44 |
|           | c2      | 2,00  | 2,00  | 2,67  | 6,67      | 2,22 |
|           | c3      | 2,00  | 2,67  | 2,00  | 6,67      | 2,22 |
| Sub Total |         | 7,00  | 6,67  | 8,67  | 22,33     |      |
| Total     |         | 20,00 | 22,00 | 20,34 | 62,33     | 1,73 |

**Tabel Lampiran 2b. Sidik Ragam Rata-rata Jumlah Akar pada Umur 1 Bulan Setelah Perlakuan**

| SK        | db    | JK      | KT     | Fhit | F Tabel |      |      |
|-----------|-------|---------|--------|------|---------|------|------|
|           |       |         |        |      | 0.05    | 0.01 |      |
| Kelompok  | 2     | 0,1909  | 0,0954 | 0,49 | tn      | 3,44 | 5,72 |
| Perlakuan | 11    | 7,0699  | 0,6427 | 3,32 | **      | 2,26 | 3,18 |
| Faktor W  | 2     | 0,3029  | 0,1515 | 0,78 | tn      | 3,44 | 5,72 |
| Faktor C  | 3     | 5,6369  | 1,8790 | 9,72 | **      | 3,05 | 4,82 |
| W*C       | 6     | 1,1302  | 0,1884 | 0,97 | tn      | 2,55 | 3,76 |
| Galat     | 22    | 4,2529  | 0,1933 |      |         |      |      |
| Total     | 35    | 11,5137 |        |      |         |      |      |
| KK        | 25,4% |         |        |      |         |      |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 2c. Rata-rata Jumlah Akar pada Umur 1 Bulan Setelah Perlakuan Hasil Transformasi ( $\sqrt{x+1}$ )**

| Perlakuan | Ulangan |       |       | Total | Rata-rata |      |
|-----------|---------|-------|-------|-------|-----------|------|
|           | I       | II    | III   |       |           |      |
| w1        | c0      | 1,53  | 1,83  | 1,53  | 4,88      | 1,63 |
|           | c1      | 1,53  | 1,53  | 1,41  | 4,47      | 1,49 |
|           | c2      | 1,63  | 1,82  | 1,63  | 5,09      | 1,70 |
|           | c3      | 1,53  | 1,91  | 1,63  | 5,08      | 1,69 |
| Sub Total |         | 6,21  | 7,09  | 6,21  | 19,52     |      |
| w2        | c0      | 1,73  | 1,63  | 1,63  | 5,00      | 1,67 |
|           | c1      | 1,29  | 1,29  | 1,29  | 3,87      | 1,29 |
|           | c2      | 1,73  | 1,83  | 1,63  | 5,19      | 1,73 |
|           | c3      | 1,91  | 1,73  | 1,73  | 5,38      | 1,79 |
| Sub Total |         | 6,67  | 6,48  | 6,29  | 19,44     |      |
| w3        | c0      | 1,53  | 1,41  | 1,83  | 4,77      | 1,59 |
|           | c1      | 1,63  | 1,41  | 1,63  | 4,68      | 1,56 |
|           | c2      | 1,73  | 1,73  | 1,91  | 5,38      | 1,79 |
|           | c3      | 1,73  | 1,91  | 1,73  | 5,38      | 1,79 |
| Sub Total |         | 6,62  | 6,48  | 7,11  | 20,21     |      |
| Total     |         | 19,51 | 20,05 | 19,60 | 59,16     | 1,64 |

**Tabel Lampiran 2d. Sidik Ragam Rata-rata Jumlah Akar pada Umur 1 Bulan Setelah Perlakuan 1 hasil transformasi ( $\sqrt{x+1}$ )**

| SK        | db   | JK     | KT     | Fhit  |    | F Tabel |      |
|-----------|------|--------|--------|-------|----|---------|------|
|           |      |        |        |       |    | 0.05    | 0.01 |
| Kelompok  | 2    | 0,0139 | 0,0070 | 0,41  | tn | 3,44    | 5,72 |
| Perlakuan | 11   | 0,7150 | 0,0650 | 3,83  | ** | 2,26    | 3,18 |
| Faktor W  | 2    | 0,0296 | 0,0148 | 0,87  | tn | 3,44    | 5,72 |
| Faktor C  | 3    | 0,5546 | 0,1849 | 10,90 | ** | 3,05    | 4,82 |
| W*C       | 6    | 0,1309 | 0,0218 | 1,29  | tn | 2,55    | 3,76 |
| Galat     | 22   | 0,3731 | 0,0170 |       |    |         |      |
| Total     | 35   | 1,1021 |        |       |    |         |      |
| KK        | 7,9% |        |        |       |    |         |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 2e. Rata-rata Jumlah Akar pada Umur 2 Bulan Setelah Perlakuan**

| Perlakuan | Ulangan |       |       | Total | Rata-rata |      |
|-----------|---------|-------|-------|-------|-----------|------|
|           | I       | II    | III   |       |           |      |
| w1        | c0      | 1,67  | 2,33  | 1,67  | 5,67      | 1,89 |
|           | c1      | 1,33  | 1,33  | 1,33  | 4,00      | 1,33 |
|           | c2      | 2,00  | 2,33  | 2,67  | 7,00      | 2,33 |
|           | c3      | 1,67  | 2,67  | 2,00  | 6,34      | 2,11 |
| Sub Total |         | 6,67  | 8,67  | 7,67  | 23,01     |      |
| w2        | c0      | 2,33  | 1,67  | 2,33  | 6,33      | 2,11 |
|           | c1      | 1,33  | 0,67  | 1,33  | 3,33      | 1,11 |
|           | c2      | 2,00  | 2,33  | 2,33  | 6,66      | 2,22 |
|           | c3      | 2,33  | 2,00  | 2,00  | 6,33      | 2,11 |
| Sub Total |         | 8,00  | 6,67  | 8,00  | 22,66     |      |
| w3        | c0      | 2,00  | 1,00  | 2,33  | 5,33      | 1,78 |
|           | c1      | 2,00  | 1,33  | 2,00  | 5,33      | 1,78 |
|           | c2      | 2,33  | 2,00  | 2,67  | 7,00      | 2,33 |
|           | c3      | 3,00  | 3,00  | 2,33  | 8,33      | 2,78 |
| Sub Total |         | 9,33  | 7,33  | 9,34  | 26,00     |      |
| Total     |         | 24,00 | 22,67 | 25,00 | 71,67     | 1,99 |

**Tabel Lampiran 2f. Sidik Ragam Rata-rata Jumlah Akar pada Umur 2 Bulan Setelah Perlakuan**

| SK        | db    | JK      | KT     | Fhit  |    | F Tabel |      |
|-----------|-------|---------|--------|-------|----|---------|------|
|           |       |         |        |       |    | 0.05    | 0.01 |
| Kelompok  | 2     | 0,2290  | 0,1145 | 0,76  | tn | 3,44    | 5,72 |
| Perlakuan | 11    | 6,7777  | 0,6162 | 4,08  | ** | 2,26    | 3,18 |
| Faktor W  | 2     | 0,5633  | 0,2816 | 1,86  | tn | 3,44    | 5,72 |
| Faktor C  | 3     | 4,9990  | 1,6663 | 11,02 | ** | 3,05    | 4,82 |
| W*C       | 6     | 1,2155  | 0,2026 | 1,34  | tn | 2,55    | 3,76 |
| Galat     | 22    | 3,3258  | 0,1512 |       |    |         |      |
| Total     | 35    | 10,3326 |        |       |    |         |      |
| KK        | 19,5% |         |        |       |    |         |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 2g. Rata-rata Jumlah Akar pada Umur 2 Bulan Setelah Perlakuan Hasil Transformasi ( $\sqrt{x+0,5}$ )**

| Perlakuan | Ulangan |       |       | Total | Rata-rata |      |
|-----------|---------|-------|-------|-------|-----------|------|
|           | I       | II    | III   |       |           |      |
| w1        | c0      | 1,47  | 1,68  | 1,47  | 4,63      | 1,54 |
|           | c1      | 1,35  | 1,35  | 1,35  | 4,06      | 1,35 |
|           | c2      | 1,58  | 1,68  | 1,78  | 5,04      | 1,68 |
|           | c3      | 1,47  | 1,78  | 1,58  | 4,83      | 1,61 |
| Sub Total |         | 5,88  | 6,50  | 6,19  | 18,57     |      |
| w2        | c0      | 1,68  | 1,47  | 1,68  | 4,84      | 1,61 |
|           | c1      | 1,35  | 1,08  | 1,35  | 3,79      | 1,26 |
|           | c2      | 1,58  | 1,68  | 1,68  | 4,95      | 1,65 |
|           | c3      | 1,68  | 1,58  | 1,58  | 4,84      | 1,61 |
| Sub Total |         | 6,30  | 5,82  | 6,30  | 18,42     |      |
| w3        | c0      | 1,58  | 1,22  | 1,68  | 4,49      | 1,50 |
|           | c1      | 1,58  | 1,35  | 1,58  | 4,52      | 1,51 |
|           | c2      | 1,68  | 1,58  | 1,78  | 5,04      | 1,68 |
|           | c3      | 1,87  | 1,87  | 1,68  | 5,42      | 1,81 |
| Sub Total |         | 6,72  | 6,03  | 6,73  | 19,48     |      |
| Total     |         | 18,90 | 18,35 | 19,22 | 56,46     | 1,57 |

**Tabel Lampiran 2h. Sidik Ragam Rata-rata Jumlah Akar pada Umur 2 Bulan Setelah Perlakuan Hasil Transformasi ( $\sqrt{x+0,5}$ )**

| SK        | db   | JK     | KT     | Fhit  |    | F Tabel |      |
|-----------|------|--------|--------|-------|----|---------|------|
|           |      |        |        |       |    | 0.05    | 0.01 |
| Kelompok  | 2    | 0,0322 | 0,0161 | 1,00  | tn | 3,44    | 5,72 |
| Perlakuan | 11   | 0,7346 | 0,0668 | 4,16  | ** | 2,26    | 3,18 |
| Faktor W  | 2    | 0,0546 | 0,0273 | 1,70  | tn | 3,44    | 5,72 |
| Faktor C  | 3    | 0,5454 | 0,1818 | 11,34 | ** | 3,05    | 4,82 |
| W*C       | 6    | 0,1347 | 0,0224 | 1,40  | tn | 2,55    | 3,76 |
| Galat     | 22   | 0,3528 | 0,0160 |       |    |         |      |
| Total     | 35   | 1,1196 |        |       |    |         |      |
| KK        | 8,1% |        |        |       |    |         |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 2i. Rata-rata Jumlah Akar pada Umur 3 Bulan Setelah Perlakuan**

| Perlakuan | Ulangan |       |       | Total | Rata-rata |      |
|-----------|---------|-------|-------|-------|-----------|------|
|           | I       | II    | III   |       |           |      |
| w1        | c0      | 2,67  | 2,67  | 2,00  | 7,33      | 2,44 |
|           | c1      | 1,33  | 1,33  | 1,33  | 4,00      | 1,33 |
|           | c2      | 2,33  | 3,33  | 3,00  | 8,66      | 2,89 |
|           | c3      | 2,33  | 3,33  | 3,00  | 8,67      | 2,89 |
| Sub Total |         | 8,67  | 10,66 | 9,33  | 28,66     |      |
| w2        | c0      | 2,67  | 3,33  | 2,33  | 8,33      | 2,78 |
|           | c1      | 1,33  | 1,00  | 1,33  | 3,67      | 1,22 |
|           | c2      | 2,00  | 3,33  | 3,00  | 8,33      | 2,78 |
|           | c3      | 3,33  | 3,33  | 2,67  | 9,33      | 3,11 |
| Sub Total |         | 9,33  | 10,99 | 9,34  | 29,66     |      |
| w3        | c0      | 3,67  | 1,00  | 3,33  | 8,00      | 2,67 |
|           | c1      | 2,33  | 1,67  | 3,00  | 7,00      | 2,33 |
|           | c2      | 3,00  | 2,00  | 3,00  | 8,00      | 2,67 |
|           | c3      | 3,33  | 3,33  | 2,67  | 9,33      | 3,11 |
| Sub Total |         | 12,33 | 8,00  | 12,00 | 32,33     |      |
| Total     |         | 30,33 | 29,66 | 30,67 | 90,66     | 2,52 |

**Tabel Lampiran 2j. Sidik Ragam Rata-rata Jumlah Akar pada Umur 3 Bulan Setelah Perlakuan**

| SK        | db    | JK      | KT     | Fhit |    | F Tabel |      |
|-----------|-------|---------|--------|------|----|---------|------|
|           |       |         |        |      |    | 0.05    | 0.01 |
| Kelompok  | 2     | 0,0441  | 0,0221 | 0,05 | tn | 3,44    | 5,72 |
| Perlakuan | 11    | 12,8343 | 1,1668 | 2,79 | *  | 2,26    | 3,18 |
| Faktor W  | 2     | 0,5988  | 0,2994 | 0,72 | tn | 3,44    | 5,72 |
| Faktor C  | 3     | 10,2427 | 3,4142 | 8,17 | ** | 3,05    | 4,82 |
| W*C       | 6     | 1,9928  | 0,3321 | 0,79 | tn | 2,55    | 3,76 |
| Galat     | 22    | 9,1952  | 0,4180 |      |    |         |      |
| Total     | 35    | 22,0737 |        |      |    |         |      |
| KK        | 25,7% |         |        |      |    |         |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 2k. Rata-rata Jumlah Akar pada Umur 3 Bulan Setelah Perlakuan Hasil Transformasi ( $\sqrt{x+1}$ )**

| Perlakuan | Ulangan |       |       | Total | Rata-rata |      |
|-----------|---------|-------|-------|-------|-----------|------|
|           | I       | II    | III   |       |           |      |
| w1        | c0      | 1,91  | 1,91  | 1,73  | 5,56      | 1,85 |
|           | c1      | 1,53  | 1,53  | 1,53  | 4,58      | 1,53 |
|           | c2      | 1,83  | 2,08  | 2,00  | 5,91      | 1,97 |
|           | c3      | 1,83  | 2,08  | 2,00  | 5,91      | 1,97 |
| Sub Total |         | 7,09  | 7,60  | 7,26  | 21,96     |      |
| w2        | c0      | 1,92  | 2,08  | 1,83  | 5,82      | 1,94 |
|           | c1      | 1,53  | 1,41  | 1,53  | 4,47      | 1,49 |
|           | c2      | 1,73  | 2,08  | 2,00  | 5,81      | 1,94 |
|           | c3      | 2,08  | 2,08  | 1,92  | 6,08      | 2,03 |
| Sub Total |         | 7,26  | 7,66  | 7,27  | 22,18     |      |
| w3        | c0      | 2,16  | 1,41  | 2,08  | 5,66      | 1,89 |
|           | c1      | 1,83  | 1,63  | 2,00  | 5,46      | 1,82 |
|           | c2      | 2,00  | 1,73  | 2,00  | 5,73      | 1,91 |
|           | c3      | 2,08  | 2,08  | 1,91  | 6,08      | 2,03 |
| Sub Total |         | 8,07  | 6,86  | 8,00  | 22,92     |      |
| Total     |         | 22,42 | 22,12 | 22,52 | 67,07     | 1,86 |

**Tabel Lampiran 2l. Sidik Ragam Rata-rata Jumlah Akar pada Umur 3 Bulan Setelah Perlakuan Hasil Transformasi ( $\sqrt{x+1}$ )**

| SK        | db   | JK     | KT     | Fhit |    | F Tabel |      |
|-----------|------|--------|--------|------|----|---------|------|
|           |      |        |        |      |    | 0.05    | 0.01 |
| Kelompok  | 2    | 0,0072 | 0,0036 | 0,12 | tn | 3,44    | 5,72 |
| Perlakuan | 11   | 1,0316 | 0,0938 | 3,03 | *  | 2,26    | 3,18 |
| Faktor W  | 2    | 0,0426 | 0,0213 | 0,69 | tn | 3,44    | 5,72 |
| Faktor C  | 3    | 0,8129 | 0,2710 | 8,77 | ** | 3,05    | 4,82 |
| W*C       | 6    | 0,1761 | 0,0294 | 0,95 | tn | 2,55    | 3,76 |
| Galat     | 22   | 0,6798 | 0,0309 |      |    |         |      |
| Total     | 35   | 1,7186 |        |      |    |         |      |
| KK        | 9,4% |        |        |      |    |         |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata



**Tabel Lampiran 3a. Rata-rata Tinggi Tanaman (cm)**

| Perlakuan | Ulangan |       |       | Total | Rata-rata |      |
|-----------|---------|-------|-------|-------|-----------|------|
|           | I       | II    | III   |       |           |      |
| w1        | c0      | 1.27  | 1.00  | 0.90  | 3.17      | 1.06 |
|           | c1      | 1.47  | 1.20  | 0.93  | 3.60      | 1.20 |
|           | c2      | 0.87  | 0.83  | 1.10  | 2.80      | 0.93 |
|           | c3      | 0.73  | 1.27  | 1.00  | 3.00      | 1.00 |
| Sub Total |         | 4.33  | 4.30  | 3.93  | 12.57     |      |
| w2        | c0      | 1.13  | 0.87  | 0.93  | 2.93      | 0.98 |
|           | c1      | 1.03  | 1.00  | 1.07  | 3.10      | 1.03 |
|           | c2      | 0.83  | 1.07  | 1.03  | 2.93      | 0.98 |
|           | c3      | 1.40  | 1.20  | 0.93  | 3.53      | 1.18 |
| Sub Total |         | 4.40  | 4.13  | 3.97  | 12.50     |      |
| w3        | c0      | 1.10  | 0.87  | 1.17  | 3.13      | 1.04 |
|           | c1      | 1.57  | 0.83  | 1.13  | 3.53      | 1.18 |
|           | c2      | 1.37  | 1.03  | 0.93  | 3.33      | 1.11 |
|           | c3      | 0.90  | 1.17  | 0.90  | 2.97      | 0.99 |
| Sub Total |         | 4.93  | 3.90  | 4.13  | 12.97     |      |
| Total     |         | 13.67 | 12.33 | 12.03 | 38.03     | 1.06 |

**Tabel Lampiran 3b. Sidik Ragam Rata-rata Tinggi Tanaman**

| SK        | db    | JK     | KT     | Fhit | F Tabel |      |      |
|-----------|-------|--------|--------|------|---------|------|------|
|           |       |        |        |      | 0.05    | 0.01 |      |
| Kelompok  | 2     | 0.1260 | 0.0630 | 1.50 | tn      | 3.44 | 5.72 |
| Perlakuan | 11    | 0.2670 | 0.0243 | 0.58 | tn      | 2.26 | 3.18 |
| Faktor W  | 2     | 0.0106 | 0.0053 | 0.13 | tn      | 3.44 | 5.72 |
| Faktor C  | 3     | 0.0885 | 0.0295 | 0.70 | tn      | 3.05 | 4.82 |
| W*C       | 6     | 0.1679 | 0.0280 | 0.66 | tn      | 2.55 | 3.76 |
| Galat     | 22    | 0.9266 | 0.0421 |      |         |      |      |
| Total     | 35    | 1.3196 |        |      |         |      |      |
| KK        | 19.4% |        |        |      |         |      |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 3c. Rata-rata Tinggi Tanaman (cm) Hasil Transformasi ( $\sqrt{x+1}$ )**

| Perlakuan | Ulangan |       |       | Total | Rata-rata |      |
|-----------|---------|-------|-------|-------|-----------|------|
|           | I       | II    | III   |       |           |      |
| w1        | c0      | 2,13  | 2,00  | 1,95  | 6,07      | 2,02 |
|           | c1      | 2,21  | 2,10  | 1,97  | 6,27      | 2,09 |
|           | c2      | 1,93  | 1,91  | 2,05  | 5,89      | 1,96 |
|           | c3      | 1,86  | 2,13  | 2,00  | 5,98      | 1,99 |
| Sub Total |         | 8,12  | 8,13  | 7,96  | 24,22     |      |
| w2        | c0      | 2,06  | 1,93  | 1,97  | 5,96      | 1,99 |
|           | c1      | 2,02  | 2,00  | 2,03  | 6,05      | 2,02 |
|           | c2      | 1,91  | 2,03  | 2,02  | 5,96      | 1,99 |
|           | c3      | 2,18  | 2,10  | 1,97  | 6,24      | 2,08 |
| Sub Total |         | 8,18  | 8,06  | 7,98  | 24,22     |      |
| w3        | c0      | 2,05  | 1,93  | 2,08  | 6,06      | 2,02 |
|           | c1      | 2,25  | 1,91  | 2,06  | 6,23      | 2,08 |
|           | c2      | 2,17  | 2,02  | 1,97  | 6,15      | 2,05 |
|           | c3      | 1,95  | 2,08  | 1,95  | 5,98      | 1,99 |
| Sub Total |         | 8,42  | 7,94  | 8,06  | 24,42     |      |
| Total     |         | 24,72 | 24,13 | 24,00 | 72,86     | 2,02 |

**Tabel Lampiran 3d. Sidik Ragam Rata-rata Tinggi Tanaman Hasil Transformasi ( $\sqrt{x+1}$ )**

| SK        | db   | JK     | KT     | Fhit | F Tabel |      |      |
|-----------|------|--------|--------|------|---------|------|------|
|           |      |        |        |      | 0,05    | 0,01 |      |
| Kelompok  | 2    | 0,0242 | 0,0121 | 1,23 | tn      | 3,44 | 5,72 |
| Perlakuan | 11   | 0,0584 | 0,0053 | 0,54 | tn      | 2,26 | 3,18 |
| Faktor W  | 2    | 0,0022 | 0,0011 | 0,11 | tn      | 3,44 | 5,72 |
| Faktor C  | 3    | 0,0190 | 0,0063 | 0,64 | tn      | 3,05 | 4,82 |
| W*C       | 6    | 0,0373 | 0,0062 | 0,63 | tn      | 2,55 | 3,76 |
| Galat     | 22   | 0,2158 | 0,0098 |      |         |      |      |
| Total     | 35   | 0,2984 |        |      |         |      |      |
| KK        | 4,9% |        |        |      |         |      |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 4a. Rata-rata Panjang Daun (cm)**

| Perlakuan | Ulangan |       |       | Total | Rata-rata |      |
|-----------|---------|-------|-------|-------|-----------|------|
|           | I       | II    | III   |       |           |      |
| w1        | c0      | 3,23  | 2,80  | 3,67  | 9,70      | 3,23 |
|           | c1      | 3,23  | 3,23  | 3,23  | 9,70      | 3,23 |
|           | c2      | 2,77  | 2,67  | 4,03  | 9,47      | 3,16 |
|           | c3      | 2,47  | 3,60  | 1,87  | 7,93      | 2,64 |
| Sub Total |         | 11,70 | 12,30 | 12,80 | 36,80     |      |
| w2        | c0      | 3,43  | 3,13  | 3,03  | 9,60      | 3,20 |
|           | c1      | 3,23  | 2,80  | 3,23  | 9,27      | 3,09 |
|           | c2      | 2,97  | 3,00  | 3,60  | 9,57      | 3,19 |
|           | c3      | 3,43  | 3,20  | 3,30  | 9,93      | 3,31 |
| Sub Total |         | 13,07 | 12,13 | 13,17 | 38,37     |      |
| w3        | c0      | 2,47  | 2,37  | 2,17  | 7,00      | 2,33 |
|           | c1      | 3,97  | 3,23  | 3,57  | 10,77     | 3,59 |
|           | c2      | 3,77  | 3,63  | 3,27  | 10,67     | 3,56 |
|           | c3      | 2,50  | 2,60  | 2,77  | 7,87      | 2,62 |
| Sub Total |         | 12,70 | 11,83 | 11,77 | 36,30     |      |
| Total     |         | 37,47 | 36,27 | 37,73 | 111,47    | 3,10 |

**Tabel Lampiran 4b. Sidik Ragam Rata-rata Panjang Daun**

| SK        | db    | JK     | KT     | Fhit | F Tabel |      |      |
|-----------|-------|--------|--------|------|---------|------|------|
|           |       |        |        |      | 0.05    | 0.01 |      |
| Kelompok  | 2     | 0,1017 | 0,0509 | 0,28 | tn      | 3,44 | 5,72 |
| Perlakuan | 11    | 4,7136 | 0,4285 | 2,38 | *       | 2,26 | 3,18 |
| Faktor W  | 2     | 0,1938 | 0,0969 | 0,54 | tn      | 3,44 | 5,72 |
| Faktor C  | 3     | 1,5390 | 0,5130 | 2,85 | tn      | 3,05 | 4,82 |
| W*C       | 6     | 2,9808 | 0,4968 | 2,76 | *       | 2,55 | 3,76 |
| Galat     | 22    | 3,9642 | 0,1802 |      |         |      |      |
| Total     | 35    | 8,7795 |        |      |         |      |      |
| KK        | 13,7% |        |        |      |         |      |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 5a. Rata-rata Panjang Akar (cm)**

| Perlakuan | Ulangan |       |       | Total | Rata-rata |      |
|-----------|---------|-------|-------|-------|-----------|------|
|           | I       | II    | III   |       |           |      |
| w1        | c0      | 1,93  | 1,15  | 2,32  | 5,40      | 1,80 |
|           | c1      | 1,13  | 1,93  | 0,98  | 4,04      | 1,35 |
|           | c2      | 1,31  | 2,07  | 1,65  | 5,03      | 1,68 |
|           | c3      | 1,39  | 1,41  | 1,67  | 4,47      | 1,49 |
| Sub Total |         | 5,76  | 6,56  | 6,62  | 18,94     |      |
| w2        | c0      | 2,18  | 1,11  | 2,27  | 5,56      | 1,85 |
|           | c1      | 1,05  | 0,40  | 0,80  | 2,25      | 0,75 |
|           | c2      | 1,77  | 1,53  | 1,98  | 5,28      | 1,76 |
|           | c3      | 2,33  | 1,66  | 1,80  | 5,79      | 1,93 |
| Sub Total |         | 7,33  | 4,70  | 6,85  | 18,88     |      |
| w3        | c0      | 1,45  | 1,10  | 2,19  | 4,74      | 1,58 |
|           | c1      | 2,90  | 1,60  | 0,87  | 5,37      | 1,79 |
|           | c2      | 2,62  | 2,90  | 1,99  | 7,51      | 2,50 |
|           | c3      | 2,80  | 2,71  | 2,18  | 7,69      | 2,56 |
| Sub Total |         | 9,77  | 8,31  | 7,23  | 25,31     |      |
| Total     |         | 22,86 | 19,57 | 20,70 | 63,13     | 1,75 |

**Tabel Lampiran 5b. Sidik Ragam Rata-rata Panjang Akar**

| SK        | db    | JK      | KT     | Fhit |    | F Tabel |      |
|-----------|-------|---------|--------|------|----|---------|------|
|           |       |         |        |      |    | 0.05    | 0.01 |
| Kelompok  | 2     | 0,4657  | 0,2329 | 0,87 | tn | 3,44    | 5,72 |
| Perlakuan | 11    | 7,6221  | 0,6929 | 2,59 | *  | 2,26    | 3,18 |
| Faktor W  | 2     | 2,2757  | 1,1379 | 4,25 | *  | 3,44    | 5,72 |
| Faktor C  | 3     | 2,8724  | 0,9575 | 3,57 | *  | 3,05    | 4,82 |
| W*C       | 6     | 2,4740  | 0,4123 | 1,54 | tn | 2,55    | 3,76 |
| Galat     | 22    | 5,8964  | 0,2680 |      |    |         |      |
| Total     | 35    | 13,9842 |        |      |    |         |      |
| KK        | 29,5% |         |        |      |    |         |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 5c. Rata-rata Panjang Akar (cm) Hasil Transformasi ( $\sqrt{x+1}$ )**

| Perlakuan | Ulangan |       |       | Total | Rata-rata |      |
|-----------|---------|-------|-------|-------|-----------|------|
|           | I       | II    | III   |       |           |      |
| w1        | c0      | 1,71  | 1,47  | 1,82  | 5,00      | 1,67 |
|           | c1      | 1,46  | 1,71  | 1,41  | 4,58      | 1,53 |
|           | c2      | 1,52  | 1,75  | 1,63  | 4,90      | 1,63 |
|           | c3      | 1,55  | 1,55  | 1,63  | 4,73      | 1,58 |
| Sub Total |         | 6,24  | 6,48  | 6,49  | 19,21     |      |
| w2        | c0      | 1,78  | 1,45  | 1,81  | 5,04      | 1,68 |
|           | c1      | 1,43  | 1,18  | 1,34  | 3,96      | 1,32 |
|           | c2      | 1,66  | 1,59  | 1,73  | 4,98      | 1,66 |
|           | c3      | 1,82  | 1,63  | 1,67  | 5,13      | 1,71 |
| Sub Total |         | 6,70  | 5,86  | 6,55  | 19,11     |      |
| w3        | c0      | 1,57  | 1,45  | 1,79  | 4,80      | 1,60 |
|           | c1      | 1,97  | 1,61  | 1,37  | 4,95      | 1,65 |
|           | c2      | 1,90  | 1,97  | 1,73  | 5,61      | 1,87 |
|           | c3      | 1,95  | 1,93  | 1,78  | 5,66      | 1,89 |
| Sub Total |         | 7,39  | 6,96  | 6,67  | 21,02     |      |
| Total     |         | 20,33 | 19,30 | 19,71 | 59,34     | 1,65 |

**Tabel Lampiran 5d. Sidik Ragam Rata-rata Panjang Akar Hasil Transformasi ( $\sqrt{x+1}$ )**

| SK        | db   | JK     | KT     | Fhit |    | F Tabel |      |
|-----------|------|--------|--------|------|----|---------|------|
|           |      |        |        |      |    | 0.05    | 0.01 |
| Kelompok  | 2    | 0,0450 | 0,0225 | 0,92 | tn | 3,44    | 5,72 |
| Perlakuan | 11   | 0,7249 | 0,0659 | 2,68 | *  | 2,26    | 3,18 |
| Faktor W  | 2    | 0,1926 | 0,0963 | 3,92 | *  | 3,44    | 5,72 |
| Faktor C  | 3    | 0,3006 | 0,1002 | 4,08 | *  | 3,05    | 4,82 |
| W*C       | 6    | 0,2318 | 0,0386 | 1,57 | tn | 2,55    | 3,76 |
| Galat     | 22   | 0,5402 | 0,0246 |      |    |         |      |
| Total     | 35   | 1,3101 |        |      |    |         |      |
| KK        | 9,5% |        |        |      |    |         |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 6a. Rata-rata Luas Daun (cm<sup>2</sup>)**

| Perlakuan | Ulangan |        |        | Total  | Rata-rata |       |
|-----------|---------|--------|--------|--------|-----------|-------|
|           | I       | II     | III    |        |           |       |
| w1        | c0      | 33,58  | 18,21  | 37,27  | 89,05     | 29,68 |
|           | c1      | 20,59  | 20,77  | 18,61  | 59,97     | 19,99 |
|           | c2      | 18,10  | 19,59  | 38,33  | 76,02     | 25,34 |
|           | c3      | 17,51  | 34,38  | 11,52  | 63,41     | 21,14 |
| Sub Total |         | 89,78  | 92,95  | 105,73 | 288,46    |       |
| w2        | c0      | 30,11  | 35,54  | 11,03  | 76,68     | 25,56 |
|           | c1      | 24,57  | 22,45  | 23,80  | 70,82     | 23,61 |
|           | c2      | 27,30  | 28,95  | 34,62  | 90,86     | 30,29 |
|           | c3      | 29,41  | 33,65  | 26,96  | 90,02     | 30,01 |
| Sub Total |         | 111,39 | 120,59 | 96,41  | 328,38    |       |
| w3        | c0      | 23,28  | 21,58  | 23,22  | 68,09     | 22,70 |
|           | c1      | 36,06  | 28,01  | 30,06  | 94,14     | 31,38 |
|           | c2      | 43,09  | 41,61  | 28,32  | 113,02    | 37,67 |
|           | c3      | 21,44  | 28,40  | 26,68  | 76,52     | 25,51 |
| Sub Total |         | 123,87 | 119,61 | 108,29 | 351,77    |       |
| Total     |         | 325,04 | 333,15 | 310,42 | 968,61    | 26,91 |

**Tabel Lampiran 6b. Sidik Ragam Rata-rata Luas Daun**

| SK        | db    | JK        | KT      | Fhit | F Tabel |      |      |
|-----------|-------|-----------|---------|------|---------|------|------|
|           |       |           |         |      | 0.05    | 0.01 |      |
| Kelompok  | 2     | 22,1082   | 11,0541 | 0,19 | tn      | 3,44 | 5,72 |
| Perlakuan | 11    | 842,0753  | 76,5523 | 1,29 | tn      | 2,26 | 3,18 |
| Faktor W  | 2     | 170,8217  | 85,4109 | 1,44 | tn      | 3,44 | 5,72 |
| Faktor C  | 3     | 215,5953  | 71,8651 | 1,21 | tn      | 3,05 | 4,82 |
| W*C       | 6     | 455,6583  | 75,9430 | 1,28 | tn      | 2,55 | 3,76 |
| Galat     | 22    | 1301,9957 | 59,1816 |      |         |      |      |
| Total     | 35    | 2166,1793 |         |      |         |      |      |
| KK        | 28,6% |           |         |      |         |      |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 6c. Rata-rata Luas Daun (cm<sup>2</sup>) Hasil Transformasi (log+0,5)**

| Perlakuan | Ulangan |       |       | Total | Rata-rata |      |
|-----------|---------|-------|-------|-------|-----------|------|
|           | I       | II    | III   |       |           |      |
| w1        | c0      | 1,53  | 1,27  | 1,58  | 4,38      | 1,46 |
|           | c1      | 1,32  | 1,33  | 1,28  | 3,93      | 1,31 |
|           | c2      | 1,27  | 1,30  | 1,59  | 4,16      | 1,39 |
|           | c3      | 1,26  | 1,54  | 1,08  | 3,88      | 1,29 |
| Sub Total |         | 5,38  | 5,45  | 5,53  | 16,35     |      |
| w2        | c0      | 1,49  | 1,56  | 1,06  | 4,10      | 1,37 |
|           | c1      | 1,40  | 1,36  | 1,39  | 4,15      | 1,38 |
|           | c2      | 1,44  | 1,47  | 1,55  | 4,46      | 1,49 |
|           | c3      | 1,48  | 1,53  | 1,44  | 4,45      | 1,48 |
| Sub Total |         | 5,80  | 5,92  | 5,43  | 17,16     |      |
| w3        | c0      | 1,38  | 1,34  | 1,38  | 4,10      | 1,37 |
|           | c1      | 1,56  | 1,46  | 1,49  | 4,50      | 1,50 |
|           | c2      | 1,64  | 1,62  | 1,46  | 4,72      | 1,57 |
|           | c3      | 1,34  | 1,46  | 1,43  | 4,24      | 1,41 |
| Sub Total |         | 5,92  | 5,88  | 5,75  | 17,56     |      |
| Total     |         | 17,11 | 17,25 | 16,71 | 51,07     | 1,42 |

**Tabel Lampiran 6d. Sidik Ragam Rata-rata Luas Daun Hasil Transformasi (log+0,5)**

| SK        | db   | JK     | KT     | Fhit |    | F Tabel |      |
|-----------|------|--------|--------|------|----|---------|------|
|           |      |        |        |      |    | 0.05    | 0.01 |
| Kelompok  | 2    | 0,0128 | 0,0064 | 0,35 | tn | 3,44    | 5,72 |
| Perlakuan | 11   | 0,2302 | 0,0209 | 1,14 | tn | 2,26    | 3,18 |
| Faktor W  | 2    | 0,0626 | 0,0313 | 1,71 | tn | 3,44    | 5,72 |
| Faktor C  | 3    | 0,0492 | 0,0164 | 0,90 | tn | 3,05    | 4,82 |
| W*C       | 6    | 0,1183 | 0,0197 | 1,08 | tn | 2,55    | 3,76 |
| Galat     | 22   | 0,4024 | 0,0183 |      |    |         |      |
| Total     | 35   | 0,6455 |        |      |    |         |      |
| KK        | 9,5% |        |        |      |    |         |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 7a. Rata-rata Luas Bukaannya Stomata (mm<sup>2</sup>)**

| Perlakuan | Ulangan   |           |           | Total     | Rata-rata |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|           | I         | II        | III       |           |           |           |
| w1        | c0        | 0,0000306 | 0,0000188 | 0,0000152 | 0,0000646 | 0,0000215 |
|           | c1        | 0,0000153 | 0,0000253 | 0,0000297 | 0,0000702 | 0,0000234 |
|           | c2        | 0,0000441 | 0,0000713 | 0,0000166 | 0,0001320 | 0,0000440 |
|           | c3        | 0,0000403 | 0,0000323 | 0,0000321 | 0,0001047 | 0,0000349 |
| Sub Total | 0,0001303 | 0,0001477 | 0,0000935 | 0,0003715 |           |           |
| w2        | c0        | 0,0000403 | 0,0000227 | 0,0000220 | 0,0000850 | 0,0000283 |
|           | c1        | 0,0000613 | 0,0000113 | 0,0000544 | 0,0001271 | 0,0000424 |
|           | c2        | 0,0000916 | 0,0000419 | 0,0000652 | 0,0001987 | 0,0000662 |
|           | c3        | 0,0000397 | 0,0000304 | 0,0000630 | 0,0001330 | 0,0000443 |
| Sub Total | 0,0002329 | 0,0001062 | 0,0002046 | 0,0005437 |           |           |
| w3        | c0        | 0,0000883 | 0,0000471 | 0,0000613 | 0,0001967 | 0,0000656 |
|           | c1        | 0,0000386 | 0,0000270 | 0,0000623 | 0,0001279 | 0,0000426 |
|           | c2        | 0,0000576 | 0,0000890 | 0,0000858 | 0,0002324 | 0,0000775 |
|           | c3        | 0,0000293 | 0,0000741 | 0,0000802 | 0,0001837 | 0,0000612 |
| Sub Total | 0,0002137 | 0,0002372 | 0,0002897 | 0,0007406 |           |           |
| Total     | 0,0005769 | 0,0004911 | 0,0005878 | 0,0016558 | 0,0000460 |           |

**Tabel Lampiran 7b. Sidik Ragam Rata-rata Luas Bukaannya Stomata**

| SK        | db    | JK           | KT           | Fhit | F Tabel |      |      |
|-----------|-------|--------------|--------------|------|---------|------|------|
|           |       |              |              |      | 0.05    | 0.01 |      |
| Kelompok  | 2     | 0,0000000005 | 0,0000000002 | 0,61 | tn      | 3,44 | 5,72 |
| Perlakuan | 11    | 0,0000000108 | 0,0000000010 | 2,55 | *       | 2,26 | 3,18 |
| Faktor W  | 2     | 0,0000000057 | 0,0000000028 | 7,39 | **      | 3,44 | 5,72 |
| Faktor C  | 3     | 0,0000000039 | 0,0000000013 | 3,35 | *       | 3,05 | 4,82 |
| W*C       | 6     | 0,0000000012 | 0,0000000002 | 0,53 | tn      | 2,55 | 3,76 |
| Galat     | 22    | 0,0000000085 | 0,0000000004 |      |         |      |      |
| Total     | 35    | 0,0000000197 |              |      |         |      |      |
| KK        | 42,6% |              |              |      |         |      |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata



**Tabel Lampiran 7c. Rata-rata Luas Bukaan Stomata (mm<sup>2</sup>) Hasil Transformasi ( $\sqrt{x+0,5}$ )**

| Perlakuan | Ulangan   |           |           | Total     | Rata-rata |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|           | I         | II        | III       |           |           |           |
| w1        | c0        | 0,5055331 | 0,5043405 | 0,5038957 | 1,5137693 | 0,5045898 |
|           | c1        | 0,5039069 | 0,5050294 | 0,5054457 | 1,5143820 | 0,5047940 |
|           | c2        | 0,5066434 | 0,5084416 | 0,5040709 | 1,5191559 | 0,5063853 |
|           | c3        | 0,5063480 | 0,5056809 | 0,5056655 | 1,5176943 | 0,5058981 |
| Sub Total | 2,0224    | 2,0235    | 2,0191    | 6,0650015 |           |           |
| w2        | c0        | 0,0063480 | 0,0047621 | 0,0046883 | 0,0157984 | 0,0052661 |
|           | c1        | 0,0078305 | 0,0033673 | 0,0073774 | 0,0185753 | 0,0061918 |
|           | c2        | 0,0095699 | 0,0064704 | 0,0080773 | 0,0241176 | 0,0080392 |
|           | c3        | 0,0062997 | 0,0055094 | 0,0079356 | 0,0197447 | 0,0065816 |
| Sub Total | 0,0300    | 0,0201    | 0,0281    | 0,0782360 |           |           |
| w3        | c0        | 0,0093952 | 0,0068629 | 0,0078305 | 0,0240886 | 0,0080295 |
|           | c1        | 0,0062090 | 0,0051999 | 0,0078916 | 0,0193005 | 0,0064335 |
|           | c2        | 0,0075873 | 0,0094322 | 0,0092643 | 0,0262838 | 0,0087613 |
|           | c3        | 0,0054136 | 0,0086104 | 0,0089579 | 0,0229819 | 0,0076606 |
| Sub Total | 0,0286050 | 0,0301054 | 0,0339443 | 0,0926548 |           |           |
| Total     | 2,0810845 | 2,0737070 | 2,0811007 | 6,2358922 | 0,1732192 |           |

**Tabel Lampiran 7d. Sidik Ragam Rata-rata Luas Bukaan Stomata Hasil Transformasi ( $\sqrt{x+0,5}$ )**

| SK        | db   | JK             | KT             | Fhit      |    | F Tabel |      |
|-----------|------|----------------|----------------|-----------|----|---------|------|
|           |      |                |                |           |    | 0.05    | 0.01 |
| Kelompok  | 2    | 0,000003030359 | 0,000001515179 | 0,69      | tn | 3,44    | 5,72 |
| Perlakuan | 11   | 1,986429810753 | 0,180584528250 | 82767,91  | ** | 2,26    | 3,18 |
| Faktor W  | 2    | 1,986402595148 | 0,993201297574 | 455217,29 | ** | 3,44    | 5,72 |
| Faktor C  | 3    | 0,000020831639 | 0,000006943880 | 3,18      | *  | 3,05    | 4,82 |
| W*C       | 6    | 0,000006383966 | 0,000001063994 | 0,49      | tn | 2,55    | 3,76 |
| Galat     | 22   | 0,000047999997 | 0,000002181818 |           |    |         |      |
| Total     | 35   | 1,986480841109 |                |           |    |         |      |
| KK        | 0,9% |                |                |           |    |         |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 8a. Rata-rata Kerapatan Stomata (mm<sup>-2</sup>)**

| Perlakuan | Ulangan |        |        | Total  | Rata-rata |       |
|-----------|---------|--------|--------|--------|-----------|-------|
|           | I       | II     | III    |        |           |       |
| w1        | c0      | 10,19  | 20,38  | 25,48  | 56,05     | 18,68 |
|           | c1      | 30,57  | 30,57  | 25,48  | 86,62     | 28,87 |
|           | c2      | 25,48  | 15,29  | 20,38  | 61,15     | 20,38 |
|           | c3      | 20,38  | 20,38  | 25,48  | 66,24     | 22,08 |
| Sub Total |         | 86,62  | 86,62  | 96,82  | 270,06    |       |
| w2        | c0      | 30,57  | 15,29  | 20,38  | 66,24     | 22,08 |
|           | c1      | 20,38  | 25,48  | 30,57  | 76,43     | 25,48 |
|           | c2      | 15,29  | 25,48  | 20,38  | 61,15     | 20,38 |
|           | c3      | 20,38  | 15,29  | 20,38  | 56,05     | 18,68 |
| Sub Total |         | 86,62  | 81,53  | 91,72  | 259,87    |       |
| w3        | c0      | 25,48  | 25,48  | 35,67  | 86,62     | 28,87 |
|           | c1      | 20,38  | 25,48  | 35,67  | 81,53     | 27,18 |
|           | c2      | 30,57  | 15,29  | 20,38  | 66,24     | 22,08 |
|           | c3      | 30,57  | 25,48  | 20,38  | 76,43     | 25,48 |
| Sub Total |         | 107,01 | 91,72  | 112,10 | 310,83    |       |
| Total     |         | 280,25 | 259,87 | 300,64 | 840,76    | 23,35 |

**Tabel Lampiran 8b. Sidik Ragam Rata-rata Kerapatan Stomata**

| SK        | db    | JK        | KT      | Fhit    | F Tabel |      |
|-----------|-------|-----------|---------|---------|---------|------|
|           |       |           |         |         | 0.05    | 0.01 |
| Kelompok  | 2     | 69,2388   | 34,6194 | 1,02 tn | 3,44    | 5,72 |
| Perlakuan | 11    | 452,2158  | 41,1105 | 1,22 tn | 2,26    | 3,18 |
| Faktor W  | 2     | 121,1679  | 60,5839 | 1,79 tn | 3,44    | 5,72 |
| Faktor C  | 3     | 198,3403  | 66,1134 | 1,95 tn | 3,05    | 4,82 |
| W*C       | 6     | 132,7077  | 22,1179 | 0,65 tn | 2,55    | 3,76 |
| Galat     | 22    | 744,3169  | 33,8326 |         |         |      |
| Total     | 35    | 1265,7714 |         |         |         |      |
| KK        | 24,9% |           |         |         |         |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 8c. Rata-rata Kerapatan Stomata (mm<sup>-2</sup>) Hasil Transformasi (log x)**

| Perlakuan | Ulangan |       |       | Total | Rata-rata |      |
|-----------|---------|-------|-------|-------|-----------|------|
|           | I       | II    | III   |       |           |      |
| w1        | c0      | 1,01  | 1,31  | 1,41  | 3,72      | 1,24 |
|           | c1      | 1,49  | 1,49  | 1,41  | 4,38      | 1,46 |
|           | c2      | 1,41  | 1,18  | 1,31  | 3,90      | 1,30 |
|           | c3      | 1,31  | 1,31  | 1,41  | 4,02      | 1,34 |
| Sub Total |         | 5,21  | 5,29  | 5,53  | 16,02     |      |
| w2        | c0      | 1,49  | 1,18  | 1,31  | 3,98      | 1,33 |
|           | c1      | 1,31  | 1,41  | 1,49  | 4,20      | 1,40 |
|           | c2      | 1,18  | 1,41  | 1,31  | 3,90      | 1,30 |
|           | c3      | 1,31  | 1,18  | 1,31  | 3,80      | 1,27 |
| Sub Total |         | 5,29  | 5,18  | 5,41  | 15,88     |      |
| w3        | c0      | 1,41  | 1,41  | 1,55  | 4,36      | 1,45 |
|           | c1      | 1,31  | 1,41  | 1,55  | 4,27      | 1,42 |
|           | c2      | 1,49  | 1,18  | 1,31  | 3,98      | 1,33 |
|           | c3      | 1,49  | 1,41  | 1,31  | 4,20      | 1,40 |
| Sub Total |         | 5,69  | 5,40  | 5,72  | 16,81     |      |
| Total     |         | 16,18 | 15,87 | 16,66 | 48,72     | 1,35 |

**Tabel Lampiran 8d. Sidik Ragam Rata-rata Kerapatan Stomata Hasil Transformasi (log x)**

| SK        | db   | JK     | KT     | Fhit | F Tabel |      |      |
|-----------|------|--------|--------|------|---------|------|------|
|           |      |        |        |      | 0.05    | 0.01 |      |
| Kelompok  | 2    | 0,0265 | 0,0133 | 0,98 | tn      | 3,44 | 5,72 |
| Perlakuan | 11   | 0,1737 | 0,0158 | 1,17 | tn      | 2,26 | 3,18 |
| Faktor W  | 2    | 0,0418 | 0,0209 | 1,55 | tn      | 3,44 | 5,72 |
| Faktor C  | 3    | 0,0711 | 0,0237 | 1,76 | tn      | 3,05 | 4,82 |
| W*C       | 6    | 0,0608 | 0,0101 | 0,75 | tn      | 2,55 | 3,76 |
| Galat     | 22   | 0,2967 | 0,0135 |      |         |      |      |
| Total     | 35   | 0,4969 |        |      |         |      |      |
| KK        | 8,6% |        |        |      |         |      |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 9a. Rata-rata Klorofil a ( $\mu\text{mol.m}^{-2}$ )**

| Perlakuan | Ulangan |         |         | Total   | Rata-rata |        |
|-----------|---------|---------|---------|---------|-----------|--------|
|           | I       | II      | III     |         |           |        |
| w1        | c0      | 179,54  | 205,35  | 217,91  | 602,80    | 200,93 |
|           | c1      | 65,08   | 57,66   | 98,82   | 221,56    | 73,85  |
|           | c2      | 114,93  | 171,18  | 125,99  | 412,10    | 137,37 |
|           | c3      | 194,96  | 261,35  | 194,40  | 650,72    | 216,91 |
| Sub Total |         | 554,51  | 695,54  | 637,12  | 1887,17   |        |
| w2        | c0      | 225,34  | 216,20  | 201,89  | 643,43    | 214,48 |
|           | c1      | 115,51  | 153,91  | 118,25  | 387,68    | 129,23 |
|           | c2      | 215,30  | 215,72  | 258,26  | 689,28    | 229,76 |
|           | c3      | 300,76  | 309,40  | 307,57  | 917,73    | 305,91 |
| Sub Total |         | 856,91  | 895,23  | 885,97  | 2638,12   |        |
| w3        | c0      | 178,11  | 237,86  | 234,43  | 650,40    | 216,80 |
|           | c1      | 142,90  | 163,48  | 152,29  | 458,66    | 152,89 |
|           | c2      | 263,98  | 267,75  | 248,81  | 780,55    | 260,18 |
|           | c3      | 311,32  | 358,34  | 333,10  | 1002,76   | 334,25 |
| Sub Total |         | 896,31  | 1027,43 | 968,64  | 2892,38   |        |
| Total     |         | 2307,74 | 2618,20 | 2491,73 | 7417,67   | 206,05 |

**Tabel Lampiran 9b. Sidik Ragam Rata-rata Klorofil a**

| SK        | db   | JK         | KT        | Fhit   | F Tabel |      |      |
|-----------|------|------------|-----------|--------|---------|------|------|
|           |      |            |           |        | 0.05    | 0.01 |      |
| Kelompok  | 2    | 4062,133   | 2031,066  | 5,18   | *       | 3,44 | 5,72 |
| Perlakuan | 11   | 183460,132 | 16678,194 | 42,50  | **      | 2,26 | 3,18 |
| Faktor W  | 2    | 45527,918  | 22763,959 | 58,00  | **      | 3,44 | 5,72 |
| Faktor C  | 3    | 126104,554 | 42034,851 | 107,10 | **      | 3,05 | 4,82 |
| W*C       | 6    | 11827,659  | 1971,277  | 5,02   | **      | 2,55 | 3,76 |
| Galat     | 22   | 8634,393   | 392,472   |        |         |      |      |
| Total     | 35   | 196156,658 |           |        |         |      |      |
| KK        | 9,6% |            |           |        |         |      |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 10a. Rata-rata Klorofil b ( $\mu\text{mol.m}^{-2}$ )**

| Perlakuan | Ulangan |         |         | Total   | Rata-rata |        |
|-----------|---------|---------|---------|---------|-----------|--------|
|           | I       | II      | III     |         |           |        |
| w1        | c0      | 75,59   | 83,80   | 88,28   | 247,67    | 82,56  |
|           | c1      | 52,00   | 51,04   | 57,13   | 160,16    | 53,39  |
|           | c2      | 60,06   | 73,20   | 62,27   | 195,53    | 65,18  |
|           | c3      | 80,34   | 106,51  | 80,16   | 267,01    | 89,00  |
| Sub Total |         | 267,99  | 314,54  | 287,84  | 870,37    |        |
| w2        | c0      | 91,09   | 87,65   | 82,62   | 261,36    | 87,12  |
|           | c1      | 60,17   | 68,64   | 60,71   | 189,52    | 63,17  |
|           | c2      | 87,32   | 87,47   | 105,06  | 279,85    | 93,28  |
|           | c3      | 127,23  | 132,37  | 131,26  | 390,87    | 130,29 |
| Sub Total |         | 365,81  | 376,14  | 379,65  | 1121,60   |        |
| w3        | c0      | 75,17   | 96,10   | 94,69   | 265,96    | 88,65  |
|           | c1      | 65,98   | 71,10   | 68,24   | 205,32    | 68,44  |
|           | c2      | 107,76  | 109,58  | 100,78  | 318,12    | 106,04 |
|           | c3      | 133,55  | 166,10  | 147,69  | 447,34    | 149,11 |
| Sub Total |         | 382,46  | 442,88  | 411,40  | 1236,75   |        |
| Total     |         | 1016,26 | 1133,56 | 1078,89 | 3228,71   | 89,69  |

**Tabel Lampiran 10b. Sidik Ragam Rata-rata Klorofil b**

| SK        | db   | JK         | KT        | Fhit  | F Tabel |      |      |
|-----------|------|------------|-----------|-------|---------|------|------|
|           |      |            |           |       | 0.05    | 0.01 |      |
| Kelompok  | 2    | 574,1012   | 287,0506  | 5,03  | *       | 3,44 | 5,72 |
| Perlakuan | 11   | 25777,1379 | 2343,3762 | 41,07 | **      | 2,26 | 3,18 |
| Faktor W  | 2    | 5850,2523  | 2925,1261 | 51,27 | **      | 3,44 | 5,72 |
| Faktor C  | 3    | 17071,5263 | 5690,5088 | 99,74 | **      | 3,05 | 4,82 |
| W*C       | 6    | 2855,3593  | 475,8932  | 8,34  | **      | 2,55 | 3,76 |
| Galat     | 22   | 1255,1689  | 57,0531   |       |         |      |      |
| Total     | 35   | 27606,4081 |           |       |         |      |      |
| KK        | 8,4% |            |           |       |         |      |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 11a. Rata-rata Klorofil Total ( $\mu\text{mol.m}^{-2}$ )**

| Perlakuan | Ulangan |         |         | Total   | Rata-rata |        |
|-----------|---------|---------|---------|---------|-----------|--------|
|           | I       | II      | III     |         |           |        |
| w1        | c0      | 260,95  | 296,05  | 313,41  | 870,41    | 290,14 |
|           | c1      | 114,24  | 105,25  | 155,90  | 375,39    | 125,13 |
|           | c2      | 176,27  | 249,73  | 190,43  | 616,44    | 205,48 |
|           | c3      | 281,84  | 374,67  | 281,08  | 937,60    | 312,53 |
| Sub Total |         | 833,30  | 1025,72 | 940,82  | 2799,84   |        |
| w2        | c0      | 323,74  | 311,04  | 291,32  | 926,10    | 308,70 |
|           | c1      | 177,02  | 226,81  | 180,51  | 584,33    | 194,78 |
|           | c2      | 309,79  | 310,37  | 370,25  | 990,41    | 330,14 |
|           | c3      | 431,92  | 444,68  | 441,97  | 1318,58   | 439,53 |
| Sub Total |         | 1242,48 | 1292,89 | 1284,05 | 3819,42   |        |
| w3        | c0      | 259,02  | 341,30  | 336,48  | 936,80    | 312,27 |
|           | c1      | 212,35  | 239,47  | 224,66  | 676,48    | 225,49 |
|           | c2      | 378,45  | 383,87  | 356,79  | 1119,11   | 373,04 |
|           | c3      | 447,53  | 518,33  | 480,06  | 1445,92   | 481,97 |
| Sub Total |         | 1297,35 | 1482,96 | 1397,99 | 4178,31   |        |
| Total     |         | 3373,13 | 3801,57 | 3622,86 | 10797,56  | 299,93 |

**Tabel 11b. Sidik Ragam Rata-rata Klorofil Total**

| SK        | db   | JK          | KT         | Fhit   | F Tabel |      |      |
|-----------|------|-------------|------------|--------|---------|------|------|
|           |      |             |            |        | 0.05    | 0.01 |      |
| Kelompok  | 2    | 7718,2809   | 3859,1404  | 5,26   | *       | 3,44 | 5,72 |
| Perlakuan | 11   | 346325,2754 | 31484,1159 | 42,92  | **      | 2,26 | 3,18 |
| Faktor W  | 2    | 85236,4493  | 42618,2246 | 58,10  | **      | 3,44 | 5,72 |
| Faktor C  | 3    | 237516,9434 | 79172,3145 | 107,93 | **      | 3,05 | 4,82 |
| W*C       | 6    | 23571,8827  | 3928,6471  | 5,36   | **      | 2,55 | 3,76 |
| Galat     | 22   | 16138,3739  | 733,5625   |        |         |      |      |
| Total     | 35   | 370181,9302 |            |        |         |      |      |
| KK        | 9,0% |             |            |        |         |      |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 12a. Rata-rata *Leaf Mass per Area* (g.cm<sup>-2</sup>)**

| Perlakuan | Ulangan |         |         | Total   | Rata-rata |         |
|-----------|---------|---------|---------|---------|-----------|---------|
|           | I       | II      | III     |         |           |         |
| w1        | c0      | 0,00356 | 0,00395 | 0,00384 | 0,01135   | 0,00378 |
|           | c1      | 0,00265 | 0,00380 | 0,00249 | 0,00894   | 0,00298 |
|           | c2      | 0,00286 | 0,00289 | 0,00096 | 0,00671   | 0,00224 |
|           | c3      | 0,00468 | 0,00338 | 0,00712 | 0,01518   | 0,00506 |
| Sub Total |         | 0,01374 | 0,01403 | 0,01441 | 0,04218   |         |
| w2        | c0      | 0,00333 | 0,00429 | 0,00820 | 0,01582   | 0,00527 |
|           | c1      | 0,00262 | 0,00270 | 0,00304 | 0,00836   | 0,00279 |
|           | c2      | 0,00568 | 0,00457 | 0,00391 | 0,01416   | 0,00472 |
|           | c3      | 0,00294 | 0,00356 | 0,00721 | 0,01370   | 0,00457 |
| Sub Total |         | 0,01456 | 0,01512 | 0,02236 | 0,05204   |         |
| w3        | c0      | 0,00392 | 0,00493 | 0,00574 | 0,01459   | 0,00486 |
|           | c1      | 0,00291 | 0,00287 | 0,00424 | 0,01002   | 0,00334 |
|           | c2      | 0,00543 | 0,00380 | 0,00528 | 0,01450   | 0,00483 |
|           | c3      | 0,00576 | 0,00424 | 0,00424 | 0,01424   | 0,00475 |
| Sub Total |         | 0,01801 | 0,01584 | 0,01949 | 0,05334   |         |
| Total     |         | 0,04631 | 0,04499 | 0,05625 | 0,14756   | 0,00410 |

**Tabel Lampiran 12b. Sidik Ragam Rata-rata *Leaf Mass per Area***

| SK        | db    | JK         | KT         | Fhit | F Tabel |      |      |
|-----------|-------|------------|------------|------|---------|------|------|
|           |       |            |            |      | 0.05    | 0.01 |      |
| Kelompok  | 2     | 0,00000632 | 0,00000316 | 1,92 | tn      | 3,44 | 5,72 |
| Perlakuan | 11    | 0,00003473 | 0,00000316 | 1,92 | tn      | 2,26 | 3,18 |
| Faktor W  | 2     | 0,00000621 | 0,00000310 | 1,89 | tn      | 3,44 | 5,72 |
| Faktor C  | 3     | 0,00001739 | 0,00000580 | 3,52 | *       | 3,05 | 4,82 |
| W*C       | 6     | 0,00001113 | 0,00000185 | 1,13 | tn      | 2,55 | 3,76 |
| Galat     | 22    | 0,00003620 | 0,00000165 |      |         |      |      |
| Total     | 35    | 0,00007725 |            |      |         |      |      |
| KK        | 31,3% |            |            |      |         |      |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

**Tabel Lampiran 12c. Rata-rata *Leaf Mass per Area* (g.cm<sup>-2</sup>) Hasil Transformasi ( $\sqrt{x+0,5}$ )**

| Perlakuan | Ulangan |         |         | Total    | Rata-rata |         |
|-----------|---------|---------|---------|----------|-----------|---------|
|           | I       | II      | III     |          |           |         |
| w1        | c0      | 0,55964 | 0,56288 | 0,56193  | 1,68446   | 0,56149 |
|           | c1      | 0,55144 | 0,56167 | 0,54992  | 1,66302   | 0,55434 |
|           | c2      | 0,55343 | 0,55379 | 0,53096  | 1,63819   | 0,54606 |
|           | c3      | 0,56843 | 0,55815 | 0,58439  | 1,71096   | 0,57032 |
| Sub Total | 2,23295 | 2,23649 | 2,22719 | 6,69663  |           |         |
| w2        | c0      | 0,55770 | 0,56551 | 0,59057  | 1,71379   | 0,57126 |
|           | c1      | 0,55116 | 0,55199 | 0,55511  | 1,65826   | 0,55275 |
|           | c2      | 0,57534 | 0,56763 | 0,56250  | 1,70547   | 0,56849 |
|           | c3      | 0,55418 | 0,55963 | 0,58492  | 1,69873   | 0,56624 |
| Sub Total | 2,23838 | 2,24476 | 2,29311 | 6,77624  |           |         |
| w3        | c0      | 0,56257 | 0,57021 | 0,57576  | 1,70855   | 0,56952 |
|           | c1      | 0,55394 | 0,55361 | 0,56509  | 1,67264   | 0,55755 |
|           | c2      | 0,57366 | 0,56161 | 0,57264  | 1,70791   | 0,56930 |
|           | c3      | 0,57590 | 0,56512 | 0,56508  | 1,70610   | 0,56870 |
| Sub Total | 2,26608 | 2,25054 | 2,27858 | 6,79520  |           |         |
| Total     | 6,73741 | 6,73179 | 6,79888 | 20,26807 | 0,56300   |         |

**Tabel Lampiran 12d. Sidik Ragam Rata-rata *Leaf Mass per Area* Hasil Transformasi ( $\sqrt{x+0,5}$ )**

| SK        | db   | JK         | KT         | Fhit | F Tabel |      |      |
|-----------|------|------------|------------|------|---------|------|------|
|           |      |            |            |      | 0.05    | 0.01 |      |
| Kelompok  | 2    | 0,00023084 | 0,00011542 | 1,20 | tn      | 3,44 | 5,72 |
| Perlakuan | 11   | 0,00232833 | 0,00021167 | 2,21 | tn      | 2,26 | 3,18 |
| Faktor W  | 2    | 0,00045596 | 0,00022798 | 2,38 | tn      | 3,44 | 5,72 |
| Faktor C  | 3    | 0,00106032 | 0,00035344 | 3,69 | *       | 3,05 | 4,82 |
| W*C       | 6    | 0,00081206 | 0,00013534 | 1,41 | tn      | 2,55 | 3,76 |
| Galat     | 22   | 0,00210878 | 0,00009585 |      |         |      |      |
| Total     | 35   | 0,00466796 |            |      |         |      |      |
| KK        | 1,7% |            |            |      |         |      |      |

Keterangan:

- \* = berpengaruh nyata
- \*\* = berpengaruh sangat nyata
- tn = tidak nyata

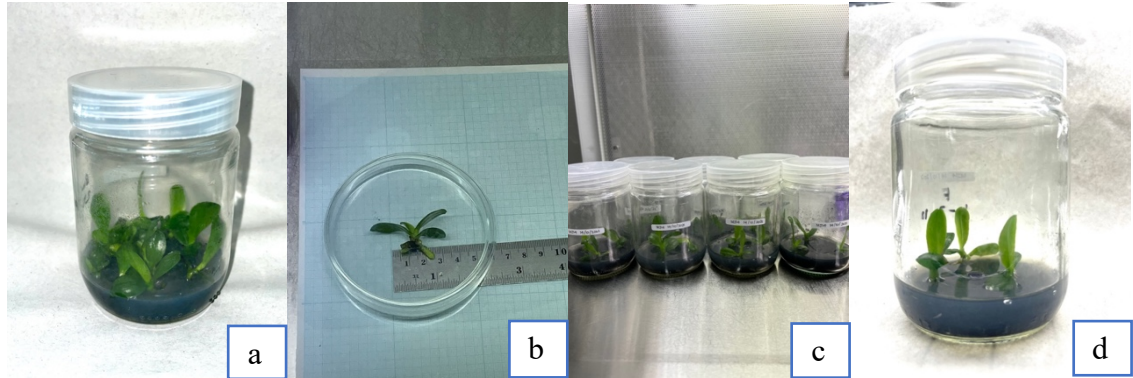


**Tabel Lampiran 13. Hasil Pengamatan Warna Daun Menggunakan *RHS Color Chart Sixth Edition***

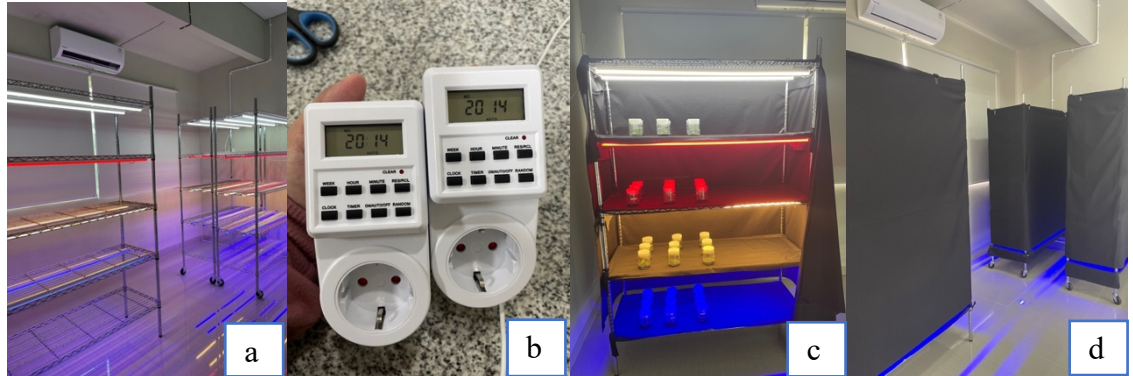
| <b>Perlakuan</b> | <b>U1</b> | <b>U2</b> | <b>U3</b> |
|------------------|-----------|-----------|-----------|
| <b>w1c0</b>      | NN137 A   | NN137 A   | NN137 A   |
| <b>w1c1</b>      | 137 B     | 137 B     | 137 D     |
| <b>w1c2</b>      | NN137 A   | 137 C     | NN137 A   |
| <b>w1c3</b>      | NN137 A   | NN137 B   | NN137 A   |
| <b>w2c0</b>      | NN137 A   | NN137 A   | NN137 A   |
| <b>w2c1</b>      | 137 C     | 137 C     | 137 C     |
| <b>w2c2</b>      | NN137 A   | NN137 B   | NN137 A   |
| <b>w2c3</b>      | 147 A     | 147 A     | 147 A     |
| <b>w3c0</b>      | 147 A     | NN137 B   | 147 A     |
| <b>w3c1</b>      | 146 B     | 146 A     | 146 A     |
| <b>w3c2</b>      | NN137 B   | NN137 B   | NN137 A   |
| <b>w3c3</b>      | 147 A     | 147 A     | 147 A     |

| <b>Kode</b> | <b>Keterangan</b>   |
|-------------|---|
| 137 A       | : Hijau zaitun sedang ( <i>Moderate Olive Green</i> )         |
| 137 B       | : Hijau zaitun sedang ( <i>Moderate Olive Green</i> )         |
| 137 C       | : Hijau kuning sedang ( <i>Moderate Yellow Green</i> )        |
| 137 D       | : Hijau kekuningan sedang ( <i>Moderate Yellowish Green</i> ) |
| NN137 A     | : Hijau zaitun keabu-abuan ( <i>Greyish Olive Green</i> )     |
| NN137 B     | : Hijau zaitun keabu-abuan ( <i>Greyish Olive Green</i> )     |
| 146 A       | : Hijau zaitun sedang ( <i>Moderate Olive Green</i> )         |
| 146 B       | : Hijau kuning sedang ( <i>Moderate Yellow Green</i> )        |
| 147 A       | : Hijau zaitun sedang ( <i>Moderate Olive Green</i> )         |

## DOKUMENTASI



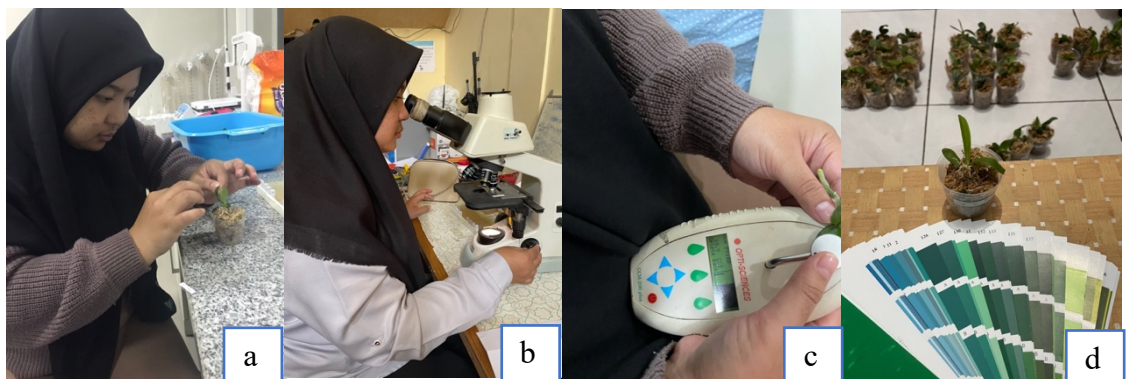
Gambar Lampiran 2. a. Sumber eksplan yang akan digunakan berupa planlet remaja b. Planlet anggrek bulan yang telah diseragamkan c. Planlet anggrek bulan yang telah disubkultur d. planlet anggrek bulan yang akan diamati dan diberi perlakuan pencahayaan



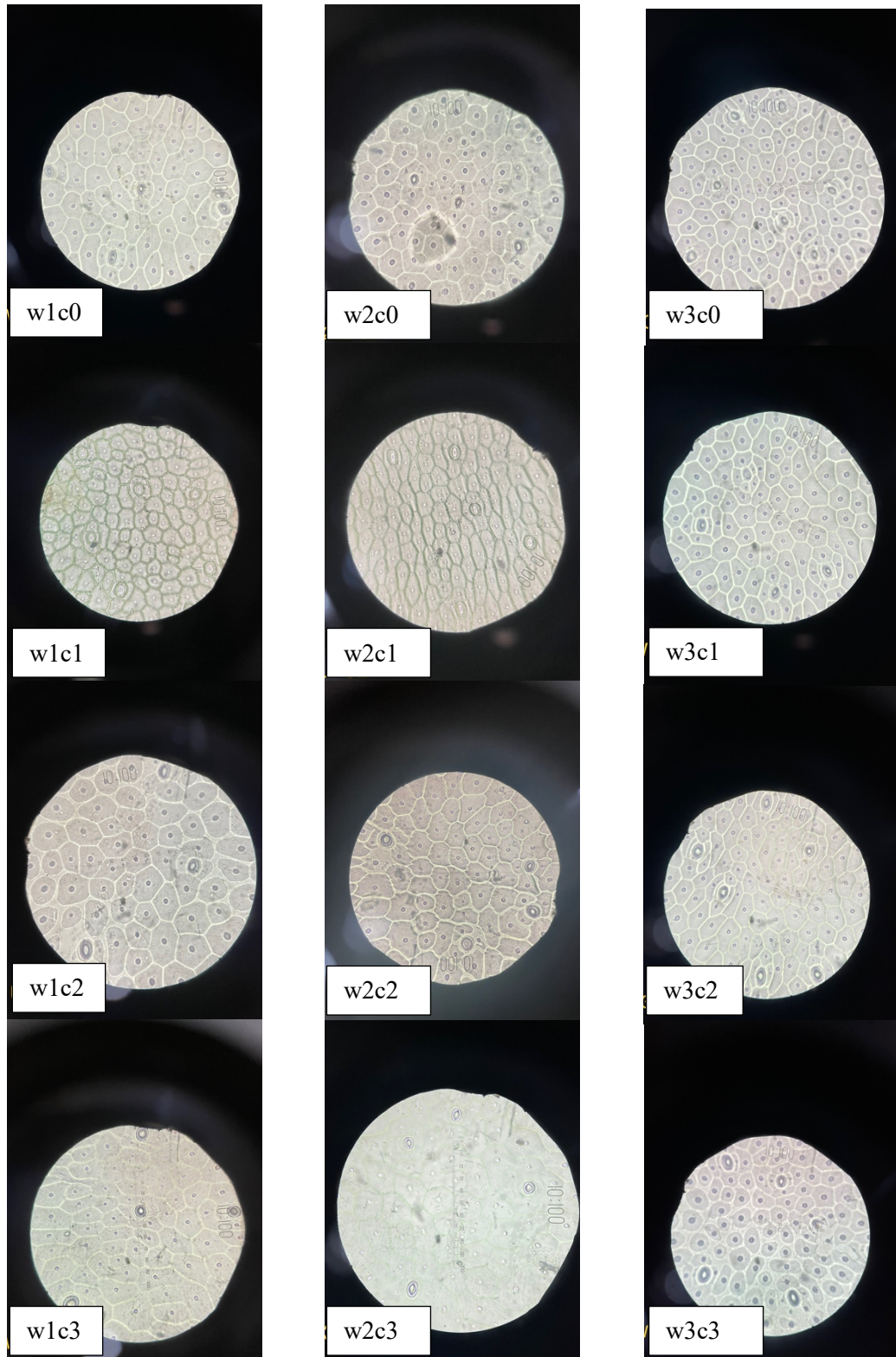
Gambar Lampiran 3. a. proses aplikasi lampu LED pada masing-masing rak serta pengaturan jarak rak b. proses aplikasi *timer* pencahayaan menggunakan stop kontak *timer* c. proses aplikasi perlakuan botol kultur pada masing-masing rak d. rak perlakuan yang telah diisolasi dari cahaya luar



Gambar Lampiran 4. a. planlet anggrek bulan yang siap aklimatisasi b. proses perendaman dan penirisan planlet anggrek bulan pada fungisida c. proses penanaman planlet anggrek menggunakan media moss d. planlet anggrek bulan yang telah diaklimatisasi



Gambar Lampiran 5. a. Proses pengolesan kuteks bening pada daun anggrek b. proses pengamatan stomata menggunakan mikroskop c. proses pengambilan data klorofil menggunakan alat CCM d. proses pengamatan warna daun menggunakan *RHS Color Chart*



Gambar Lampiran 6. Hasil Pengamatan Kerapatan Stomata Menggunakan Mikroskop pada Perbesaran 400x



Gambar Lampiran 7. Hasil Pengamatan Warna Daun Menggunakan *RHS Color Chart*