

DAFTAR PUSTAKA

- Adolph, R. (2016). *Upland Rice A Global Perspective*. 1–23.
- Agustin, S., Priyono, A., Rahayu, K., Kehutanan, P. S., Kehutanan, F., & Yogyakarta, I. (2023). *Uji Efektivitas Beberapa Jenis Insektisida Terhadap Pengendalian Hama Ulat Penggulung Daun (Strepsicrates Sp .) Pada Bibit Eucalyptus Hybrid. 1*, 810–815.
- Altinok, H. H., Altinok, M. A., & Koca, A. S. (2022). *Modes Of Action Of Entomopathogenic Fungi. Current Trends In Natural Sciences*, 8(16), 117–124.
- Alwie, Rahayu Deny Danar Dan Alvi Furwanti, Prasetio, A. B., Andespa, R., Lhokseumawe, P. N., & Pengantar, K. (2020). *Tugas Akhir Tugas Akhir. Jurnal Ekonomi Volume 18, Nomor 1 Maret201*, 2(1), 41–49.
- Apra, M., Aniek Prasetyaningsih, & Kukuh Madyaningrana. (2021). *Potensi Bioakarisida Ekstrak Daun Mimba (Azadirachta Indica) Dan Bunga Cengkeh (Syzygium Aromaticum) Terhadap Tungau Penyebab Penyakit Krepes Pada Jamur Kuping. Edumatsains: Jurnal Pendidikan, Matematika Dan Sains*, 5(2), 225–238. <https://doi.org/10.33541/Edumatsains.V5i2.2241>
- Arkhiadi Benauli, J. M. S. E. H. (2023). *Pengaruh Ekstrak Alang-Alang (Imperata Cylindrica) Terhadap Pertumbuhan Tanaman Buncis (Phaseolus Vulgaris L.). (Jptb) Jurnal Pertanian Terpadu Berkelanjutan*, 1(1), 13–20. <https://www.journal.hdgi.org/index.php/jptb>
- Asnita, T., Pasaribu, Y., Gazali, A., & Wahdah, R. (2022). *Pengaplikasian Bio-Insektisida Beauveria Bassiana Dalam Menekan Intensitas Serangan Pada Tanaman Sawi (Brassica Juncea L .)*. 5(2).
- Effectivity, T. (2014). *102143-Id-Uji-Efektifitas-Jamur-Entomopatogen-Beau*. 2(2337), 1607–1613.
- Effendi, K. J., Andayani, S. T., & Wijayani, S. (2023). *Pertumbuhan Semai Eucalyptus Pellita Pada Berbagai Perlakuan Pemupukan. Agrotechnology, Agribusiness, Forestry, And Technology: Jurnal Mahasiswa Instiper (Agroforetech)*, 1(1), 780–783.
- Fakhrurreza, M. F. (2023). *Kemampuan Produk Bioinsektisida Komersial Berbahan*

Aktif Metarhizium Sp. Dalam Menyebabkan Kematian Larva Oryctes Rhinoceros L.

Hasibuan, M., Delina, E., & Zulhaida, L. (2021). “ *Membangun Sinergi Antar Perguruan Tinggi Dan Industri Pertanian Dalam Rangka Implementasi Merdeka Belajar Kampus Merdeka* ” [*Pemanfaatan Daun Mimba (Azadirachta Indica) Sebagai Pestisida Nabati*] : *Review*. 5(1), 1153–1158.

Hasnah, S., Sably, H., Agroteknologi, P., & Pertanian, F. (2012). Keefektifan Cendawan *Beauveria Bassiana Vuill* Terhadap Mortalitas Kepik Hijau *Nezara Viridula L.* Pada Stadia Nimfa Dan Imago *Effectiveness Of Fungus Beauveria Bassiana On Mortality Of Nezara Viridula On Stadia Nymph And Imago*. *J. Floratek*, 7, 13–24.

Hidayah, A. R., Harijani, W. S., Widajati, W., & Ernawati, D. (2020). Potensi Jamur Entomopatogen *Metarhizium Anisopliae*, *Beauveria Bassiana* Dan *Streptomyces Sp.* Terhadap Mortalitas *Lepidiotia Stigma* Pada Tanaman Tebu. *Berkala Ilmiah Agroteknologi - Plumula*, 7(2), 64–72. <https://doi.org/10.33005/Plumula.V7i2.23>

Hidayah, N., Rahma, N., Amelia, R., Kumala, R., Meliandika, O., & Asmadi, T. (2024). *Pemanfaatan Daun Mimba (Azadirachta Indica) Sebagai Pestisida Nabati Dalam Mengatasi Masalah Hama Di Desa Gondang Kecamatan Gangga Kabupaten Lombok Utara*.

Indayani Indayani, Pulungan, A. S., Prasatya, D., Miranda, M., Mardiyah, N. U., Ramadhani, S. C., Umayah, A., Gunawan, B., & Arsi, A. (2022). Inventarisasi Dan Identifikasi Tungau Pada Mawar Di Kabupaten Organ Ilir, Provinsi Sumatera Selatan. *Prosiding Seminar Lahan Suboptimal*, 10(4), 751–758. <https://conference.unsri.ac.id/index.php/Lahansuboptimal/article/download/2574/1557>

Javandira, C., Ayu, I. G., Yuniti, D., & Widana, I. G. (2022). Pengaruh Pestisida Daun Mimba Terhadap Mortalitas Kutu Daun (*Aphis Craccivora Koch*) Pada Tanaman Kacang Panjang (*The Effect Of Neem Leaf Pesticide On Mortality Of Aphids (Aphis Craccivora Koch) On Long Bean Plant*). *Agricultural Journal*, 5(3), 485–491.

Kariming, M. R. Z. (2023). *Karakteristik Morfologi Dan Potensi Biomassa Akasia (Acacia Auriculiformis) Di Hutan Pendidikan Universitas Hasanuddin Disusun Dan Diajukan Oleh : Moh Reza Zulkifli Kariming Program Studi Kehutanan*.

Killa, Y. M., Maranda, A. P., Hana, M. R., Agroteknologi, P. S., Kristen, U., Wacana,

- W., Program, M., Agroteknologi, S., Kristen, U., & Wacana, W. (2023). *Efektivitas Pestisida Nabati Ekstrak Daun Mimba (Azadirachta Indica) Dan Srikaya (Annona Squamosa Linn) Untuk Mengendalikan Hama Belalang Kembara (Locusta Migratoria Minilensis Mayen)*. 6, 9–13.
- Krisno Budiyanto, M. A., Waluyo, L., & Rahadjanto, A. (2020). Pendampingan Pembuatan Akarisida Organik Di Kelompok Tani Sumber Urip-1 Desa Wonorejo Kecamatan Poncokusumo Kabupaten Malang. *International Journal Of Community Service Learning*, 4(1), 10. <https://doi.org/10.23887/ijcsl.v4i1.19660>
- Kusumawati, D. E. (2020). Panduan Praktikum Teknologi Pengendalian Penyakit Tanaman. *Repository.Unisda.Ac.Id*. <http://repository.unisda.ac.id/985/2/PetunjukPraktikumTeknologiPengendalianPenyakitTanaman.Pdf>
- Lumantotobing, I. R. C., Wijayani, S., & Andayani, S. T. (2023). Uji Efektivitas Beberapa Akarisida Untuk Pengendalian Hama Tungau Merah (*Tetranychus Sp.*) Pada Tanaman Induk Acacia Crassicarpa. *Agroforetech*, 1(1), 5–6.
- Mallarangeng, R., & Nurmas, A. (2012). *Dan Jamur Entomopatogen Synnematum Sp . Untuk Mengendalikan Wereng Pucuk Mete (Sanurus Indecora)*. 12(2), 146–152.
- Marida Santi Yudha Ika Bayu, Yusmani Prayogo, S. W. I. (2021). *Beauveria Bassiana: Biopestisida Ramah Lingkungan Dan Efektif Untuk Mengendalikan Hama Dan Penyakit Tanaman*. 19(1).
- Maulana, A., Suryanto, P., Widiyatno, W., Faridah, E., & Suwignyo, B. (2019). Dinamika Suksesi Vegetasi Pada Areal Pasca Perladangan Berpindah Di Kalimantan Tengah. *Jurnal Ilmu Kehutanan*, 13(2), 181. <https://doi.org/10.22146/jik.52433>
- Melaponty, D. P., Fahrizal, ., & Manurung, T. F. (2019). Keanekaragaman Jenis Vegetasi Tegakan Hutan Pada Kawasan Hutan Kota Bukit Senja Kecamatan Singkawang Tengah Kota Singkawang. *Jurnal Hutan Lestari*, 7(2), 893–904. <https://doi.org/10.26418/jhl.v7i2.34558>
- Nasution, M. M., Sayuthi, M., Hasnah, H., Tanaman, J. P., & Pertanian, F. (2023). Patogenesis Cendawan Entomopatogen *Beauveria Bassiana* Terhadap Serangga *Nezara Viridula* (L.) Pada Stadia Yang Berbeda (*Pathogenicity Of Entomopathogenic Fungus Beauveria Bassiana To Insect Nezara Viridula (L.) At Different Stages*). *Jurnal Ilmiah Mahasiswa Pertanian*, 8(1), 2023. www.jim.usk.ac.id/jfp

- Nilai, T., & Dan, P. (2018). *Kajian Dampak Penurunan Daur Tanaman Acacia Crassicarpa A . Cunn. June 2013.* <https://doi.org/10.20886/jpht.2013.10.2.109-117>
- Nunilahwati, H., Herlinda, S., Irsan, C., & Pujiastuti, Y. (2012). *Eksplorasi , Isolasi Dan Seleksi Jamur Entomopatogen Plutella Xylostella (Lepidoptera : Yponomeutidae) Pada Pertanaman Caisin (Brassica Chinensis) Di Sumatera Selatan.* 12(1), 1–11.
- Palimbong, E., Suba, R. B., Ruslim, Y., & Herlambang, H. (2023). *Respon Pertumbuhan Acacia Crassicarpa A . Cunn . Ex Benth . Terhadap Pemberian Pupuk Cair Yang Berbeda Di Persemaian Pt Mayawana Persada , Pontianak , Kalimantan Barat Pertumbuhan Tanaman Pada Dasarnya Merupakan Suatu Rangkaian Proses Fisiologis Yang Komp.* 7(1), 56–63.
- Pebriani, N. N., Widaningsih, D., & Darmiati, N. N. (2018). *Kepadatan Populasi Dan Persentase Serangan Hama Tungau Merah Tetranychus Urticae Koch (Acarina : Tetranychidae) Pada Tanaman Jeruk Siam (Citrus Nobilis Lour) Yang Di Perlakukan Dengan Akarisida Piridaben 135 G/L. E-Jurnal Agroekoteknologi Tropika,* 7(4), 585–592. <https://ojs.unud.ac.id/index.php/jat585>
- Pramudianto, & Sari, K. P. (2016). *Tungau Merah (Tetranychus Urticae Koch) Pada Tanaman Ubikayu Dan Cara Pengendaliannya.* *Buletin Palawija,* 14(1), 36–48.
- Pt.Riau Andalan Pulp And Paper. (2020). *Pengelolaan Hutan Lestari Pt.Riau Andalan Pulp And Paper.*
- Puluhulawa, J., & Gubali, H. N. (2017). *Kebijakan Hutan Tanaman Industri (Hti) Dampaknya Bagi Kehidupan Sosial Masyarakat Di Desa Huyula Kecamatan Mootilango Kabupaten Gorontalo.* *Prosiding Seminar Nasional ...,* 3(2), 222–230. <https://dummy.jurnal.polinela.ac.id/index.php/prosiding/article/view/727>
- Purnomo, H., Sucipto, I., & Muhlison, W. (2022). *Produksi Biopestisida Berbahan Aktif Jamur Entomopatogen Formulasi Padat Di Desa Andongsari. Selaparang: Jurnal Pengabdian Masyarakat Berkemajuan,* 6(4), 2277. <https://doi.org/10.31764/jpmb.v6i4.11895>
- Rahmawaty. (2004). *Hutan : Fungsi Dan Peranannya Bagi Masyarakat Program Ilmu Kehutanan.* 1–7.

- Rizki Darmawan Septian¹. Dkk. (2021). Identifikasi Dan Efektivitas Berbagai Teknik Pengendalian Hama Baru Ulat Grayak *Spodoptera Frugiperda* J . E . Smith Pada Tanaman Jagung Berbasis Pht-Biointensif (*Identification And Effectiveness Of Various Control Techniques Of Fall Armyworm Spodoptera F.* 26(4), 521–529. <https://doi.org/10.18343/jipi.26.4.521>
- Rizki Yuniansarihutan, P., Fungsinya, D., Kehidupan, B., & Mataram, U. (2023). Rizki Yuniansari. *Jurnal Kompilasi Hukum*, 8(2). <https://doi.org/10.29303/jkh.v8i2.144>
- Salasa, T., Tarore, D., & Rimbing, J. (2024). Patogenisitas Jamur Entomopatogen *Metarhizium Anisopliae* Metch. Terhadap Larva *Spodoptera Litura* F. Pada Tanaman Kubis (*Brassicae Oleracea* L.) Di Laboratorium. *Agri-Sosioekonomi*, 20(2), 661–668. <https://doi.org/10.35791/agrsosek.v20i2.57233>
- Sari, R. W., Swibawa, I. G., Wibowo, L., & Utomo, S. D. (2019). Tingkat Kerusakan Tanaman Dan Populasi Tungau Serta Kutu Putih Pada 23 Klon Ubi Kayu (*Manihot Esculenta* Crantz). *Jurnal Agrotek Tropika*, 7(3), 497. <https://doi.org/10.23960/jat.v7i3.3554>
- Suciatmih, Kartika, T., & Yusuf, S. (2015). Jamur Entomopatogen Dan Aktivitas Enzim Ekstraselulernya. *Berita Biologi*, 2(14), 131–142.
- Sugesty, S., Kardiansyah, T., & Pratiwi, W. (2015). Potensi *Acacia Crassicarpa* Sebagai Bahan Baku Pulp Kertas Untuk Hutan Tanaman Industri. *Jurnal Selulosa*, 5(01), 21–32. <https://doi.org/10.25269/jsel.v5i01.75>
- Suryadi, Y., Wartono, W., Susilowati, D. N., Lestari, P., Nirmalasari, C., & Suryani, S. (2018). Patogenisitas *Beauveria Bassiana* Strain Stgd 7(14)2 Dan Stgd 5(14)2 Terhadap Wereng Coklat (*Nilaparvata Lugens* Stål). *Al-Kauniah: Jurnal Biologi*, 11(2), 122–132. <https://doi.org/10.15408/kauniah.v11i2.6694>
- Sutriadi, M. T., Harsanti, E. S., Wahyuni, S., & Wihardjaka, A. (2020). Pestisida Nabati: Prospek Pengendali Hama Ramah Lingkungan. *Jurnal Sumberdaya Lahan*, 13(2), 89. <https://doi.org/10.21082/jSDL.V13n2.2019.89-101>
- Tantawizal, T., Inayati, A., & Prayogo, Y. (2015). Potensi Cendawan Entomopatogen *Beauveria Bassiana* (Balsamo) Vuillemin Untuk Mengendalikan Hama *Boleng Cylas Formicarius* F. Pada Tanaman Ubi jalar. *Buletin Palawija*, 53(29), 46–53.
- Wahdaniah, W., Rahim, S., & Bempah, I. (2022). Dampak Hutan Tanaman Industri Terhadap Perubahan Tutupan Lahan Hutan Dan Kondisi Sosial Ekonomi

Masyarakat. *Gorontalo Journal Of Forestry Research*, 5(2), 101.
<https://doi.org/10.32662/Gjfr.V5i2.2151>

- Witjaksono1)*, Arman Wijonarko1), Tri Harjaka1), Irma Harahap1), & W. B. S. (2015). *Tekanan Metarhizium Anisopliae Dan Feromon Terhadap Populasi Dan Tingkat Kerusakan Oleh Oryctes Rhinoceros Pressure Of Metarhizium Anisopliae And Pheromone Trap Application To The Population And Damage Caused By Oryctes Rhinoceros*. 19(2), 73–79.
- Yanti, M., . I., & . D. (2016). Pengaruh Zat Alelopati Dari Alang-Alang Terhadap Pertumbuhan Semai Tiga Spesies Akasia. *Jurnal Sylva Lestari*, 4(2), 27.
<https://doi.org/10.23960/Jsl2427-38>
- Yusmani Prayogo. (2005). Potensi, Kendala, Dan Upaya Mempertahankan Keefektifan Cendawan Entomopatogen Untuk Mengendalikan Hama Tanaman Pangan. *Buletin Palawija*, 10(10), 53–65.
- Yusuf, S., Efektivitas, U., Yusuf, S., Sihombing, D., Handayati, W., Nuryani, W., Penelitian, B., Hias, T., Raya, J., Pacet, C., Pengkajian, B., Pertanian, T., Timur, J., Raya, J., & Km, K. (2011). *Uji Efektivitas Bioinsektisida Berbahan Aktif Beauveria Bassiana (Balsamo) Vuillemin Terhadap Kutudaun Macrosiphoniela Sanborni Pada Krisan*. 21(3), 265–273.
- Zhang Zq. 2003 *Mites Of Greenhouses: Identification, Biology, And Control*. Cab International Publishing Wallingford Oxon. United States Of Amerika.

LAMPIRAN

Lampiran 1. Data Mortalitas (Tingkat Kematian) Serangan Hama Tungau (*Tetranychus sp.*) Pada Berbagai Hari Pengamatan di Laboratorium

| Trial at Laboratorium | | | | | | | | | | | |
|-----------------------|----------------------------------|---------------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Treatment | Description | Concentration | Replication | Mortality 1 (%) | Mortality 2 (%) | Mortality 3 (%) | Mortality 4 (%) | Mortality 5 (%) | Mortality 6 (%) | Mortality 7 (%) | Mortality 8 (%) |
| T0 | | Control | 1 | 0 | 0 | 5 | 5 | 10 | 10 | 10 | 10 |
| T0 | | Control | 2 | 0 | 0 | 0 | 5 | 5 | 5 | 10 | 10 |
| T0 | | Control | 3 | 0 | 0 | 5 | 5 | 5 | 10 | 10 | 10 |
| | | | | 0 | 0 | 3.333333333 | 5 | 6.666666667 | 8.333333333 | 10 | 10 |
| T1 | GMN – Metarhizium Recommendation | 0,5 g/L | 1 | 15 | 15 | 35 | 45 | 70 | 80 | 90 | 90 |
| T1 | GMN – Metarhizium Recommendation | 0,5 g/L | 2 | 10 | 15 | 40 | 50 | 75 | 85 | 95 | 95 |
| T1 | GMN – Metarhizium Recommendation | 0,5 g/L | 3 | 15 | 20 | 40 | 50 | 70 | 85 | 95 | 100 |
| | | | | 13.333333333 | 16.666666667 | 38.333333333 | 48.333333333 | 71.666666667 | 83.333333333 | 93.333333333 | 95 |
| T2 | GMN – Metarhizium (2x) | 1 g/L | 1 | 15 | 30 | 60 | 75 | 85 | 95 | 100 | 100 |
| T2 | GMN – Metarhizium (2x) | 1 g/L | 2 | 15 | 30 | 40 | 60 | 75 | 90 | 100 | 100 |
| T2 | GMN – Metarhizium (2x) | 1 g/L | 3 | 20 | 35 | 50 | 65 | 75 | 90 | 100 | 100 |
| | | | | 16.666666667 | 31.666666667 | 50 | 66.666666667 | 78.333333333 | 91.666666667 | 100 | 100 |
| T3 | GMN – Metarhizium (1/2) | 0,25 g/L | 1 | 5 | 10 | 20 | 35 | 50 | 65 | 75 | 75 |

| Treatment | Description | Concentration | Replication | Mortality 1 | Mortality 2 | Mortality 3 | Mortality 4 | Mortality 5 | Mortality 6 | Mortality 7 | Mortality 8 |
|-----------|--------------------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| T3 | GMN – Metarhizium (1/2) | 0,25 g/L | 2 | 10 | 15 | 30 | 35 | 50 | 65 | 80 | 80 |
| T3 | GMN – Metarhizium (1/2) | 0,25 g/L | 3 | 5 | 15 | 30 | 40 | 55 | 70 | 80 | 80 |
| | | | | 6.6666667 | 13.33333333 | 26.66666667 | 36.66666667 | 51.66666667 | 66.66666667 | 78.33333333 | 78.33333333 |
| T4 | Metarizep Recommendation | 5 g/L | 1 | 10 | 15 | 40 | 50 | 65 | 80 | 90 | 90 |
| T4 | Metarizep Recommendation | 5 g/L | 2 | 5 | 15 | 30 | 40 | 60 | 85 | 95 | 95 |
| T4 | Metarizep Recommendation | 5 g/L | 3 | 10 | 20 | 40 | 50 | 60 | 80 | 95 | 95 |
| | | | | 8.33333333 | 16.66666666 | 36.66666666 | 46.66666666 | 61.66666666 | 81.66666666 | 93.33333333 | 93.33333333 |
| T5 | Metarizep (2x) | 10 g/L | 1 | 15 | 35 | 50 | 65 | 80 | 90 | 100 | 100 |
| T5 | Metarizep (2x) | 10 g/L | 2 | 15 | 35 | 55 | 65 | 85 | 95 | 100 | 100 |
| T5 | Metarizep (2x) | 10 g/L | 3 | 10 | 30 | 50 | 65 | 85 | 95 | 100 | 100 |
| | | | | 13.33333333 | 33.33333333 | 51.66666666 | 65 | 83.33333333 | 93.33333333 | 100 | 100 |
| T6 | Metarizep (1/2) | 2,5 g/L | 1 | 5 | 10 | 20 | 30 | 45 | 60 | 80 | 80 |
| T6 | Metarizep (1/2) | 2,5 g/L | 2 | 5 | 10 | 30 | 35 | 45 | 60 | 75 | 80 |
| T6 | Metarizep (1/2) | 2,5 g/L | 3 | 5 | 10 | 30 | 40 | 50 | 65 | 75 | 80 |
| | | | | 5 | 10 | 26.66666666 | 35 | 46.66666666 | 61.66666666 | 76.66666666 | 80 |
| T7 | Entomobac Recommendation | 5 g/L | 1 | 10 | 30 | 40 | 65 | 80 | 85 | 90 | 95 |
| T7 | Entomobac Recommendation | 5 g/L | 2 | 10 | 25 | 40 | 60 | 75 | 85 | 95 | 100 |

| Treatment | Description | Concentration | Replication | Mortality 1 | Mortality 2 | Mortality 3 | Mortality 4 | Mortality 5 | Mortality 6 | Mortality 7 | Mortality 8 |
|-----------|--------------------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| T7 | Entomobac Recommendation | 5 g/L | 3 | 15 | 25 | 45 | 65 | 80 | 90 | 100 | 100 |
| | | | | 11.666667 | 26.666666 | 41.666666 | 63.333333 | 78.333333 | 86.666666 | 95 | 98.333333 |
| T8 | Entomobac (2x) | 10 g/L | 1 | 20 | 40 | 65 | 80 | 85 | 95 | 100 | 100 |
| T8 | Entomobac (2x) | 10 g/L | 2 | 25 | 35 | 70 | 85 | 90 | 95 | 100 | 100 |
| T8 | Entomobac (2x) | 10 g/L | 3 | 20 | 40 | 70 | 85 | 90 | 95 | 100 | 100 |
| | | | | 21.666667 | 38.333333 | 68.333333 | 83.333333 | 88.333333 | 95 | 100 | 100 |
| T9 | Entomobac (1/2) | 2,5 g/L | 1 | 5 | 10 | 20 | 35 | 45 | 60 | 75 | 75 |
| T9 | Entomobac (1/2) | 2,5 g/L | 2 | 10 | 10 | 20 | 40 | 55 | 65 | 80 | 80 |
| T9 | Entomobac (1/2) | 2,5 g/L | 3 | 5 | 10 | 25 | 40 | 55 | 65 | 80 | 80 |
| | | | | 6.666666 | 10 | 21.666666 | 38.333333 | 51.666666 | 63.333333 | 78.333333 | 78.333333 |
| T10 | BVR Recommendation | 0,15 g/L | 1 | 5 | 10 | 25 | 40 | 55 | 70 | 80 | 80 |
| T10 | BVR Recommendation | 0,15 g/L | 2 | 10 | 15 | 35 | 45 | 60 | 75 | 85 | 85 |
| T10 | BVR Recommendation | 0,15 g/L | 3 | 10 | 15 | 30 | 40 | 55 | 75 | 85 | 85 |
| | | | | 8.333333 | 13.333333 | 30 | 41.666666 | 56.666666 | 73.333333 | 83.333333 | 83.333333 |
| T11 | BVR (2x) | 0,3 g/L | 1 | 15 | 20 | 25 | 45 | 65 | 75 | 90 | 90 |
| T11 | BVR (2x) | 0,3 g/L | 2 | 15 | 15 | 30 | 40 | 65 | 80 | 95 | 95 |
| T11 | BVR (2x) | 0,3 g/L | 3 | 10 | 15 | 30 | 45 | 60 | 75 | 90 | 90 |
| | | | | 13.333333 | 16.666666 | 28.333333 | 43.333333 | 63.333333 | 76.666666 | 91.666666 | 91.666666 |
| T12 | BVR (1/2) | 0,075 g/L | 1 | 0 | 10 | 20 | 30 | 40 | 55 | 65 | 65 |
| T12 | BVR (1/2) | 0,075 g/L | 2 | 0 | 10 | 15 | 30 | 45 | 60 | 70 | 70 |

| Treatment | Description | Concentration | Replication | Mortality 1 | Mortality 2 | Mortality 3 | Mortality 4 | Mortality 5 | Mortality 6 | Mortality 7 | Mortality 8 |
|-----------|-----------------------------|---------------|-------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| T12 | BVR (1/2) | 0,075 g/L | 3 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 70 |
| | | | | 3.333333 3 | 13.333333 3 | 21.666666 7 | 33.333333 3 | 45 | 58.333333 3 | 68.333333 3 | 68.333333 3 |
| T13 | Bio – Killer Recommendation | 0,5 ml/L | 1 | 10 | 20 | 25 | 45 | 65 | 75 | 85 | 85 |
| T13 | Bio – Killer Recommendation | 0,5 ml/L | 2 | 20 | 30 | 35 | 55 | 75 | 80 | 90 | 90 |
| T13 | Bio – Killer Recommendation | 0,5 ml/L | 3 | 15 | 25 | 35 | 60 | 75 | 85 | 90 | 90 |
| | | | | 15 | 25 | 31.666666 7 | 53.333333 3 | 71.666666 7 | 80 | 88.333333 3 | 88.333333 3 |
| T14 | Bio – Killer (2x) | 1 ml/L | 1 | 20 | 40 | 65 | 80 | 85 | 95 | 100 | 100 |
| T14 | Bio – Killer (2x) | 1 ml/L | 2 | 20 | 35 | 65 | 75 | 80 | 90 | 100 | 100 |
| T14 | Bio – Killer (2x) | 1 ml/L | 3 | 15 | 40 | 60 | 75 | 85 | 95 | 100 | 100 |
| | | | | 18.333333 3 | 38.333333 3 | 63.333333 3 | 76.666666 7 | 83.333333 3 | 93.333333 3 | 100 | 100 |
| T15 | Bio – Killer (1/2) | 0,25 ml/L | 1 | 5 | 10 | 20 | 40 | 55 | 65 | 75 | 75 |
| T15 | Bio – Killer (1/2) | 0,25 ml/L | 2 | 10 | 15 | 25 | 45 | 60 | 70 | 80 | 80 |
| T15 | Bio – Killer (1/2) | 0,25 ml/L | 3 | 10 | 10 | 25 | 40 | 60 | 70 | 80 | 80 |
| | | | | 8.333333 3 | 11.666666 7 | 23.333333 3 | 41.666666 7 | 58.333333 3 | 68.333333 3 | 78.333333 3 | 78.333333 3 |
| T16 | Neem Oil Recommendation | 2,5 ml/L | 1 | 10 | 30 | 50 | 70 | 80 | 90 | 100 | 100 |
| T16 | Neem Oil Recommendation | 2,5 ml/L | 2 | 10 | 30 | 60 | 70 | 75 | 85 | 95 | 100 |
| T16 | Neem Oil Recommendation | 2,5 ml/L | 3 | 15 | 35 | 55 | 65 | 80 | 85 | 95 | 100 |
| | | | | 11.666666 7 | 31.666666 7 | 55 | 68.333333 3 | 78.333333 3 | 86.666666 7 | 96.666666 7 | 100 |

| Treatment | Description | Concentration | Replication | Mortality 1 | Mortality 2 | Mortality 3 | Mortality 4 | Mortality 5 | Mortality 6 | Mortality 7 | Mortality 8 |
|-----------|----------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| T17 | Neem Oil (2x) | 5 ml/L | 1 | 25 | 45 | 75 | 90 | 95 | 100 | 100 | 100 |
| T17 | Neem Oil (2x) | 5 ml/L | 2 | 25 | 40 | 70 | 85 | 95 | 95 | 100 | 100 |
| T17 | Neem Oil (2x) | 5 ml/L | 3 | 30 | 45 | 75 | 90 | 95 | 100 | 100 | 100 |
| | | | | 26.666667 | 43.33333333 | 73.33333333 | 88.33333333 | 95 | 98.33333333 | 100 | 100 |
| T18 | Neem Oil (1/2) | 1,25 ml/L | 1 | 10 | 10 | 30 | 40 | 60 | 70 | 85 | 85 |
| T18 | Neem Oil (1/2) | 1,25 ml/L | 2 | 5 | 15 | 35 | 50 | 70 | 80 | 90 | 90 |
| T18 | Neem Oil (1/2) | 1,25 ml/L | 3 | 5 | 15 | 35 | 50 | 70 | 80 | 90 | 90 |
| | | | | 6.66666667 | 13.33333333 | 33.33333333 | 46.66666666 | 66.66666666 | 76.66666666 | 88.33333333 | 88.33333333 |
| T19 | SOP | 1 ml/L | 1 | 15 | 25 | 40 | 60 | 75 | 85 | 95 | 100 |
| T19 | SOP | 1 ml/L | 2 | 10 | 30 | 50 | 65 | 75 | 85 | 100 | 100 |
| T19 | SOP | 1 ml/L | 3 | 10 | 30 | 40 | 60 | 80 | 85 | 95 | 100 |
| | | | | 11.66666667 | 28.33333333 | 43.33333333 | 61.66666666 | 76.66666666 | 85 | 96.66666666 | 100 |

Keterangan:

DAT : Hari Pengamatan

T : Perlakuan

Lampiran 2 . Hasil Uji Analisis Menggunakan SPSS (Mortalitas)

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|----------------|----|-------------|--------|------|
| Between Groups | 18061,856 | 7 | 2580,265 | 30,292 | ,000 |
| Within Groups | 1362,893 | 16 | 85,181 | | |
| Total | 19424,750 | 23 | | | |

| Perlakuan | N | Subset for alpha = 0.05 | | |
|--------------------------------|---|-------------------------|---------|----------|
| | | 1 | 2 | 3 |
| Duncan ^a Air Bersih | 3 | 10,0000 | | |
| BVR | 3 | | 81,0667 | |
| Bio Killer | 3 | | 88,8667 | 88,8667 |
| GMN - Metarhizium | 3 | | 91,1000 | 91,1000 |
| Metarizep | 3 | | 91,1000 | 91,1000 |
| Entomobac | 3 | | 92,2000 | 92,2000 |
| Neem Oil | 3 | | 96,1000 | 96,1000 |
| SOP | 3 | | | 100,0000 |
| Sig. | | 1,000 | ,093 | ,205 |

**Lampiran 3. Severity (Tingkat Serangan) Hama *Tetranychus sp.* Pada Tanaman *Acacia crassicarpa*
Pada Berbagai Hari Pengamatan di *Nursery***

| Treatment | Pre-Assessment Severity | 2 DAT Severity | 4 DAT Severity | 6 DAT Severity | 8 DAT Severity |
|------------------|--------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| T0 | 65.28% | 67.59% | 76.39% | 75.00% | 78.70% |
| T1 | 67.13% | 62.96% | 50.46% | 31.48% | 20.37% |
| T2 | 63.89% | 65.74% | 54.17% | 37.04% | 28.24% |
| T3 | 69.44% | 71.30% | 55.09% | 36.57% | 20.83% |
| T4 | 58.80% | 59.72% | 47.22% | 30.09% | 16.20% |
| T5 | 67.59% | 67.13% | 48.61% | 29.63% | 9.72% |
| T6 | 46.76% | 50.00% | 50.46% | 37.50% | 27.31% |
| T7 | 67.13% | 69.91% | 59.26% | 53.24% | 25.93% |
| T8 | 71.30% | 55.09% | 35.65% | 15.28% | 7.87% |

Keterangan:

Pre-Assessment : Pengamatan Sebelum Aplikasi

DAT : Hari Pengamatan

Lampiran 4. Severity (Tingkat Serangan) Hama *Tetranychus* sp. Pada Tanaman *Acacia crassicarpa* Pada Hari Pengamatan

| | Treatment | Pre-Assement Severity | 2 DAT Severity | 4 DAT Severity | 6 DAT Severity | 8 DAT Severity |
|--|-----------|-----------------------|----------------|----------------|----------------|----------------|
| | T0R1P1 | 3 | 3 | 3 | 3 | 3 |
| | T0R1 | 2 | 2 | 2 | 2 | 2 |
| | T0R1 | 2 | 2 | 3 | 2 | 2 |
| | T0R1 | 1 | 1 | 2 | 2 | 3 |
| | T0R1 | 3 | 3 | 3 | 2 | 3 |
| | T0R1 | 2 | 2 | 2 | 2 | 2 |
| | T0R1 | 2 | 2 | 3 | 2 | 2 |
| | T0R1 | 2 | 2 | 2 | 1 | 1 |
| | T0R1P2 | 2 | 2 | 3 | 3 | 3 |
| | T0R1 | 2 | 2 | 2 | 2 | 2 |
| | T0R1 | 3 | 3 | 3 | 3 | 3 |
| | T0R1 | 2 | 2 | 2 | 2 | 2 |
| | T0R1 | 3 | 3 | 3 | 3 | 3 |
| | T0R1 | 2 | 2 | 2 | 2 | 2 |
| | T0R1 | 1 | 2 | 2 | 2 | 2 |
| | T0R1 | 2 | 2 | 2 | 2 | 2 |
| | T0R1P3 | 2 | 2 | 2 | 2 | 2 |
| | T0R1 | 1 | 2 | 3 | 3 | 3 |
| | T0R1 | 1 | 1 | 2 | 2 | 2 |
| | T0R1 | 2 | 2 | 3 | 3 | 3 |
| | T0R1 | 3 | 3 | 3 | 3 | 3 |
| | T0R1 | 2 | 2 | 2 | 2 | 2 |
| | T0R1 | 3 | 3 | 3 | 3 | 3 |

| | | | | | |
|--------|---|---|---|---|---|
| T0R1 | 2 | 2 | 2 | 2 | 2 |
| T0R2P1 | 1 | 2 | 2 | 2 | 2 |
| T0R2 | 1 | 1 | 2 | 2 | 2 |
| T0R2 | 3 | 3 | 3 | 3 | 3 |
| T0R2 | 2 | 2 | 3 | 3 | 3 |
| T0R2 | 1 | 1 | 1 | 1 | 1 |
| T0R2 | 2 | 2 | 2 | 2 | 2 |
| T0R2 | 3 | 3 | 3 | 3 | 3 |
| T0R2 | 3 | 3 | 3 | 3 | 3 |
| T0R2P2 | 2 | 2 | 2 | 2 | 2 |
| T0R2 | 2 | 2 | 2 | 2 | 2 |
| T0R2 | 3 | 3 | 3 | 3 | 3 |
| T0R2 | 1 | 1 | 2 | 2 | 2 |
| T0R2 | 2 | 2 | 2 | 2 | 2 |
| T0R2 | 2 | 2 | 3 | 3 | 3 |
| T0R2 | 1 | 2 | 2 | 2 | 2 |
| T0R2 | 2 | 2 | 2 | 2 | 2 |
| T0R2P3 | 3 | 3 | 3 | 3 | 3 |
| T0R2 | 2 | 2 | 3 | 3 | 3 |
| T0R2 | 2 | 2 | 3 | 3 | 3 |
| T0R2 | 2 | 2 | 2 | 2 | 2 |
| T0R2 | 2 | 2 | 3 | 3 | 3 |
| T0R2 | 3 | 3 | 3 | 3 | 3 |
| T0R2 | 2 | 2 | 2 | 2 | 2 |
| T0R2 | 1 | 1 | 1 | 2 | 2 |
| T0R3P1 | 2 | 2 | 2 | 1 | 1 |

| | | | | | | |
|-------|--------|----|----|----|----|----|
| | T0R3 | 1 | 1 | 1 | 1 | 1 |
| | T0R3 | 1 | 2 | 2 | 2 | 2 |
| | T0R3 | 1 | 1 | 1 | 2 | 2 |
| | T0R3 | 2 | 2 | 2 | 2 | 3 |
| | T0R3 | 2 | 2 | 3 | 3 | 3 |
| | T0R3 | 2 | 2 | 3 | 3 | 3 |
| | T0R3 | 2 | 2 | 2 | 2 | 3 |
| | T0R3P2 | 1 | 1 | 2 | 2 | 2 |
| | T0R3 | 1 | 1 | 1 | 1 | 2 |
| | T0R3 | 2 | 2 | 2 | 2 | 2 |
| | T0R3 | 2 | 2 | 2 | 2 | 2 |
| | T0R3 | 1 | 1 | 1 | 1 | 2 |
| | T0R3 | 2 | 2 | 2 | 2 | 2 |
| | T0R3 | 3 | 3 | 3 | 3 | 3 |
| | T0R3 | 3 | 3 | 3 | 3 | 3 |
| | T0R3P3 | 2 | 2 | 3 | 3 | 3 |
| | T0R3 | 2 | 2 | 2 | 2 | 2 |
| | T0R3 | 1 | 1 | 2 | 2 | 2 |
| | T0R3 | 2 | 2 | 2 | 2 | 3 |
| | T0R3 | 3 | 3 | 3 | 3 | 3 |
| | T0R3 | 2 | 2 | 2 | 2 | 2 |
| | T0R3 | 1 | 1 | 1 | 1 | 2 |
| | T0R3 | 2 | 2 | 2 | 2 | 2 |
| | 1 | 18 | 13 | 7 | 7 | 4 |
| Total | 2 | 39 | 44 | 37 | 40 | 38 |
| | 3 | 15 | 15 | 28 | 25 | 30 |

| | | 0.652777778 | 0.675925926 | 0.763888889 | 0.75 | 0.787037037 |
|--|--------|-------------|-------------|-------------|------|-------------|
| | T1R1P1 | 2 | 2 | 2 | 1 | 0 |
| | T1R1 | 2 | 2 | 2 | 2 | 2 |
| | T1R1 | 1 | 1 | 1 | 0 | 1 |
| | T1R1 | 3 | 3 | 3 | 2 | 2 |
| | T1R1 | 3 | 3 | 3 | 2 | 2 |
| | T1R1 | 2 | 2 | 2 | 2 | 1 |
| | T1R1 | 1 | 0 | 0 | 0 | 0 |
| | T1R1 | 2 | 2 | 1 | 0 | 0 |
| | T1R1P2 | 2 | 2 | 2 | 2 | 1 |
| | T1R1 | 2 | 2 | 2 | 2 | 2 |
| | T1R1 | 2 | 2 | 2 | 1 | 0 |
| | T1R1 | 1 | 1 | 0 | 0 | 0 |
| | T1R1 | 1 | 1 | 2 | 1 | 1 |
| | T1R1 | 2 | 2 | 2 | 0 | 0 |
| | T1R1 | 3 | 3 | 3 | 2 | 2 |
| | T1R1 | 2 | 2 | 2 | 1 | 1 |
| | T1R1P3 | 3 | 2 | 2 | 1 | 1 |
| | T1R1 | 2 | 2 | 1 | 0 | 0 |
| | T1R1 | 2 | 2 | 2 | 1 | 0 |
| | T1R1 | 1 | 1 | 0 | 0 | 0 |
| | T1R1 | 2 | 2 | 2 | 1 | 1 |
| | T1R1 | 1 | 1 | 0 | 0 | 0 |
| | T1R1 | 3 | 3 | 3 | 3 | 2 |
| | T1R1 | 2 | 2 | 1 | 0 | 0 |
| | T1R2P1 | 2 | 2 | 2 | 2 | 0 |

| | | | | | |
|--------|---|---|---|---|---|
| T1R2 | 3 | 2 | 1 | 1 | 1 |
| T1R2 | 1 | 1 | 0 | 0 | 0 |
| T1R2 | 3 | 3 | 3 | 2 | 2 |
| T1R2 | 2 | 2 | 2 | 1 | 0 |
| T1R2 | 2 | 2 | 2 | 1 | 1 |
| T1R2 | 2 | 2 | 2 | 0 | 0 |
| T1R2 | 2 | 1 | 0 | 0 | 0 |
| T1R2P2 | 2 | 2 | 2 | 2 | 1 |
| T1R2 | 2 | 2 | 2 | 2 | 1 |
| T1R2 | 1 | 1 | 0 | 0 | 0 |
| T1R2 | 1 | 2 | 2 | 2 | 1 |
| T1R2 | 2 | 2 | 1 | 0 | 0 |
| T1R2 | 1 | 1 | 1 | 0 | 0 |
| T1R2 | 2 | 2 | 2 | 2 | 1 |
| T1R2 | 3 | 3 | 2 | 2 | 1 |
| T1R2P3 | 2 | 2 | 1 | 0 | 0 |
| T1R2 | 1 | 1 | 0 | 0 | 0 |
| T1R2 | 2 | 2 | 1 | 1 | 0 |
| T1R2 | 2 | 2 | 2 | 2 | 1 |
| T1R2 | 2 | 1 | 1 | 1 | 0 |
| T1R2 | 3 | 3 | 3 | 2 | 2 |
| T1R2 | 1 | 1 | 1 | 0 | 0 |
| T1R2 | 2 | 2 | 1 | 0 | 0 |
| T1R3 | 2 | 2 | 1 | 0 | 1 |
| T1R3 | 3 | 3 | 2 | 2 | 1 |
| T1R3 | 2 | 2 | 2 | 1 | 1 |

| | | | | | | |
|-------|------|-------------|------------|------------|-------------|-------------|
| | T1R3 | 2 | 2 | 2 | 0 | 1 |
| | T1R3 | 3 | 3 | 2 | 1 | 1 |
| | T1R3 | 2 | 1 | 0 | 0 | 0 |
| | T1R3 | 3 | 3 | 2 | 1 | 0 |
| | T1R3 | 3 | 3 | 2 | 1 | 0 |
| | T1R3 | 2 | 2 | 1 | 0 | 0 |
| | T1R3 | 2 | 2 | 2 | 2 | 1 |
| | T1R3 | 1 | 1 | 1 | 0 | 0 |
| | T1R3 | 2 | 2 | 1 | 0 | 0 |
| | T1R3 | 3 | 2 | 2 | 2 | 2 |
| | T1R3 | 2 | 2 | 1 | 1 | 1 |
| | T1R3 | 1 | 1 | 1 | 0 | 0 |
| | T1R3 | 2 | 2 | 1 | 1 | 0 |
| | T1R3 | 3 | 2 | 1 | 1 | 0 |
| | T1R3 | 3 | 2 | 2 | 2 | 1 |
| | T1R3 | 2 | 2 | 2 | 2 | 1 |
| | T1R3 | 1 | 1 | 1 | 1 | 0 |
| | T1R3 | 2 | 2 | 2 | 2 | 1 |
| | T1R3 | 3 | 2 | 2 | 1 | 1 |
| | T1R3 | 2 | 2 | 1 | 0 | 0 |
| | T1R3 | 1 | 1 | 1 | 0 | 0 |
| Total | 1 | 16 | 17 | 23 | 21 | 26 |
| | 2 | 39 | 43 | 34 | 22 | 9 |
| | 3 | 17 | 11 | 6 | 1 | 0 |
| | | 0.671296296 | 0.62962963 | 0.50462963 | 0.314814815 | 0.203703704 |
| | T2R1 | 2 | 2 | 3 | 2 | 2 |

| | | | | | |
|------|---|---|---|---|---|
| T2R1 | 1 | 1 | 1 | 0 | 0 |
| T2R1 | 2 | 2 | 2 | 1 | 1 |
| T2R1 | 3 | 3 | 3 | 3 | 3 |
| T2R1 | 2 | 3 | 3 | 3 | 3 |
| T2R1 | 1 | 1 | 1 | 0 | 0 |
| T2R1 | 1 | 1 | 1 | 0 | 0 |
| T2R1 | 1 | 2 | 2 | 1 | 2 |
| T2R1 | 2 | 2 | 2 | 1 | 1 |
| T2R1 | 1 | 1 | 1 | 0 | 0 |
| T2R1 | 2 | 2 | 2 | 1 | 0 |
| T2R1 | 3 | 3 | 2 | 2 | 1 |
| T2R1 | 2 | 2 | 1 | 1 | 1 |
| T2R1 | 1 | 1 | 1 | 0 | 0 |
| T2R1 | 2 | 2 | 2 | 2 | 2 |
| T2R1 | 2 | 2 | 1 | 0 | 0 |
| T2R1 | 3 | 2 | 2 | 1 | 1 |
| T2R1 | 2 | 2 | 2 | 1 | 0 |
| T2R1 | 1 | 1 | 1 | 0 | 0 |
| T2R1 | 1 | 1 | 0 | 0 | 0 |
| T2R1 | 2 | 2 | 2 | 1 | 1 |
| T2R1 | 2 | 2 | 2 | 1 | 0 |
| T2R1 | 3 | 3 | 2 | 2 | 1 |
| T2R1 | 3 | 3 | 2 | 2 | 1 |
| T2R2 | 0 | 0 | 0 | 0 | 0 |
| T2R2 | 2 | 2 | 2 | 1 | 1 |
| T2R2 | 1 | 1 | 1 | 0 | 0 |

| | | | | | |
|------|---|---|---|---|---|
| T2R2 | 0 | 0 | 0 | 0 | 0 |
| T2R2 | 3 | 3 | 2 | 1 | 0 |
| T2R2 | 3 | 3 | 2 | 2 | 2 |
| T2R2 | 2 | 2 | 2 | 1 | 0 |
| T2R2 | 3 | 3 | 2 | 2 | 2 |
| T2R2 | 2 | 2 | 2 | 2 | 1 |
| T2R2 | 2 | 2 | 1 | 1 | 0 |
| T2R2 | 2 | 2 | 1 | 0 | 0 |
| T2R2 | 3 | 3 | 3 | 2 | 1 |
| T2R2 | 2 | 2 | 2 | 2 | 2 |
| T2R2 | 3 | 3 | 2 | 2 | 1 |
| T2R2 | 2 | 2 | 2 | 2 | 1 |
| T2R2 | 1 | 1 | 1 | 1 | 0 |
| T2R2 | 1 | 1 | 0 | 0 | 0 |
| T2R2 | 2 | 2 | 2 | 1 | 0 |
| T2R2 | 3 | 3 | 2 | 1 | 1 |
| T2R2 | 2 | 2 | 2 | 2 | 2 |
| T2R2 | 2 | 2 | 1 | 1 | 1 |
| T2R2 | 1 | 1 | 1 | 0 | 0 |
| T2R2 | 2 | 2 | 1 | 0 | 0 |
| T2R2 | 3 | 3 | 3 | 2 | 2 |
| T2R3 | 1 | 1 | 0 | 0 | 0 |
| T2R3 | 0 | 0 | 0 | 0 | 0 |
| T2R3 | 1 | 1 | 2 | 0 | 0 |
| T2R3 | 2 | 3 | 3 | 3 | 3 |
| T2R3 | 2 | 3 | 2 | 0 | 0 |

| | | | | | | |
|-------|------|-------------|-------------|-------------|------------|-------------|
| | T2R3 | 1 | 1 | 1 | 0 | 0 |
| | T2R3 | 2 | 2 | 2 | 2 | 2 |
| | T2R3 | 2 | 3 | 2 | 2 | 2 |
| | T2R3 | 2 | 2 | 2 | 2 | 2 |
| | T2R3 | 3 | 3 | 2 | 2 | 1 |
| | T2R3 | 2 | 2 | 2 | 1 | 1 |
| | T2R3 | 3 | 3 | 2 | 2 | 2 |
| | T2R3 | 3 | 3 | 2 | 2 | 1 |
| | T2R3 | 3 | 3 | 2 | 2 | 1 |
| | T2R3 | 2 | 2 | 2 | 1 | 0 |
| | T2R3 | 2 | 2 | 1 | 0 | 0 |
| | T2R3 | 2 | 2 | 1 | 0 | 0 |
| | T2R3 | 3 | 3 | 2 | 2 | 2 |
| | T2R3 | 1 | 1 | 1 | 1 | 1 |
| | T2R3 | 1 | 1 | 0 | 0 | 0 |
| | T2R3 | 2 | 2 | 2 | 2 | 2 |
| | T2R3 | 3 | 3 | 3 | 3 | 2 |
| | T2R3 | 2 | 2 | 2 | 2 | 2 |
| | T2R3 | 1 | 1 | 1 | 0 | 0 |
| Total | 1 | 18 | 17 | 20 | 20 | 20 |
| | 2 | 33 | 31 | 38 | 24 | 16 |
| | 3 | 18 | 21 | 7 | 4 | 3 |
| | | 0.638888889 | 0.657407407 | 0.541666667 | 0.37037037 | 0.282407407 |
| | T3R1 | 3 | 3 | 3 | 2 | 0 |
| | T3R1 | 3 | 3 | 2 | 2 | 0 |
| | T3R1 | 3 | 3 | 2 | 2 | 0 |

| | | | | | |
|------|---|---|---|---|---|
| T3R1 | 2 | 2 | 1 | 0 | 0 |
| T3R1 | 2 | 2 | 1 | 0 | 0 |
| T3R1 | 2 | 3 | 2 | 2 | 2 |
| T3R1 | 1 | 1 | 1 | 0 | 0 |
| T3R1 | 2 | 3 | 2 | 2 | 1 |
| T3R1 | 1 | 1 | 0 | 0 | 0 |
| T3R1 | 2 | 2 | 2 | 1 | 1 |
| T3R1 | 2 | 2 | 2 | 1 | 0 |
| T3R1 | 3 | 3 | 2 | 2 | 0 |
| T3R1 | 2 | 2 | 2 | 2 | 2 |
| T3R1 | 2 | 2 | 1 | 1 | 0 |
| T3R1 | 3 | 3 | 3 | 2 | 1 |
| T3R1 | 3 | 3 | 3 | 2 | 1 |
| T3R1 | 2 | 2 | 2 | 2 | 2 |
| T3R1 | 1 | 1 | 0 | 0 | 0 |
| T3R1 | 1 | 1 | 0 | 0 | 0 |
| T3R1 | 2 | 2 | 2 | 2 | 2 |
| T3R1 | 3 | 3 | 2 | 1 | 0 |
| T3R1 | 2 | 2 | 2 | 1 | 0 |
| T3R1 | 1 | 1 | 0 | 0 | 0 |
| T3R1 | 2 | 2 | 2 | 2 | 2 |
| T3R2 | 3 | 3 | 3 | 3 | 3 |
| T3R2 | 1 | 1 | 1 | 0 | 0 |
| T3R2 | 3 | 3 | 3 | 3 | 3 |
| T3R2 | 2 | 3 | 3 | 0 | 0 |
| T3R2 | 2 | 2 | 2 | 0 | 0 |

| | | | | | |
|------|---|---|---|---|---|
| T3R2 | 1 | 1 | 1 | 0 | 0 |
| T3R2 | 3 | 3 | 3 | 3 | 1 |
| T3R2 | 3 | 3 | 3 | 3 | 2 |
| T3R2 | 2 | 2 | 2 | 2 | 1 |
| T3R2 | 3 | 3 | 2 | 2 | 1 |
| T3R2 | 3 | 3 | 2 | 2 | 1 |
| T3R2 | 2 | 2 | 2 | 1 | 0 |
| T3R2 | 2 | 2 | 2 | 1 | 0 |
| T3R2 | 1 | 1 | 1 | 0 | 0 |
| T3R2 | 2 | 2 | 2 | 1 | 0 |
| T3R2 | 3 | 3 | 2 | 2 | 1 |
| T3R2 | 3 | 3 | 2 | 2 | 1 |
| T3R2 | 3 | 3 | 2 | 2 | 1 |
| T3R2 | 2 | 2 | 1 | 0 | 0 |
| T3R2 | 2 | 2 | 1 | 0 | 0 |
| T3R2 | 1 | 1 | 1 | 0 | 0 |
| T3R2 | 3 | 3 | 2 | 1 | 1 |
| T3R2 | 2 | 2 | 2 | 1 | 0 |
| T3R2 | 3 | 3 | 3 | 2 | 1 |
| T3R3 | 3 | 3 | 3 | 3 | 2 |
| T3R3 | 1 | 1 | 1 | 0 | 0 |
| T3R3 | 1 | 1 | 1 | 0 | 0 |
| T3R3 | 2 | 3 | 3 | 3 | 3 |
| T3R3 | 3 | 3 | 3 | 3 | 2 |
| T3R3 | 1 | 1 | 1 | 0 | 0 |
| T3R3 | 1 | 1 | 1 | 0 | 0 |

| | | | | | | |
|-------|------|-------------|-------------|-------------|-------------|-------------|
| | T3R3 | 2 | 2 | 1 | 1 | 0 |
| | T3R3 | 1 | 1 | 0 | 0 | 0 |
| | T3R3 | 2 | 2 | 2 | 1 | 0 |
| | T3R3 | 2 | 2 | 2 | 1 | 0 |
| | T3R3 | 3 | 3 | 2 | 1 | 1 |
| | T3R3 | 2 | 2 | 1 | 0 | 0 |
| | T3R3 | 1 | 1 | 0 | 0 | 0 |
| | T3R3 | 2 | 2 | 2 | 1 | 1 |
| | T3R3 | 2 | 2 | 1 | 0 | 0 |
| | T3R3 | 2 | 2 | 1 | 0 | 0 |
| | T3R3 | 3 | 3 | 2 | 1 | 1 |
| | T3R3 | 2 | 2 | 1 | 0 | 0 |
| | T3R3 | 1 | 1 | 0 | 0 | 0 |
| | T3R3 | 2 | 2 | 1 | 1 | 1 |
| | T3R3 | 2 | 2 | 1 | 1 | 1 |
| | T3R3 | 1 | 1 | 0 | 0 | 0 |
| | T3R3 | 3 | 3 | 2 | 2 | 2 |
| | 1 | 17 | 17 | 21 | 18 | 18 |
| Total | 2 | 32 | 28 | 31 | 20 | 9 |
| | 3 | 23 | 27 | 12 | 7 | 3 |
| | | 0.694444444 | 0.712962963 | 0.550925926 | 0.365740741 | 0.208333333 |
| | T4R1 | 2 | 2 | 2 | 1 | 0 |
| | T4R1 | 2 | 2 | 2 | 1 | 1 |
| | T4R1 | 3 | 3 | 2 | 1 | 1 |
| | T4R1 | 2 | 2 | 2 | 2 | 1 |
| | T4R1 | 3 | 3 | 2 | 1 | 1 |

| | | | | | |
|------|---|---|---|---|---|
| T4R1 | 2 | 2 | 2 | 1 | 1 |
| T4R1 | 1 | 1 | 1 | 0 | 0 |
| T4R1 | 2 | 2 | 1 | 0 | 0 |
| T4R1 | 1 | 1 | 0 | 0 | 0 |
| T4R1 | 2 | 2 | 2 | 1 | 0 |
| T4R1 | 2 | 2 | 2 | 2 | 2 |
| T4R1 | 2 | 2 | 2 | 2 | 1 |
| T4R1 | 3 | 3 | 2 | 1 | 0 |
| T4R1 | 2 | 2 | 1 | 1 | 1 |
| T4R1 | 3 | 3 | 2 | 2 | 1 |
| T4R1 | 2 | 2 | 1 | 0 | 0 |
| T4R1 | 2 | 2 | 1 | 0 | 0 |
| T4R1 | 3 | 3 | 3 | 2 | 1 |
| T4R1 | 1 | 1 | 0 | 0 | 0 |
| T4R1 | 2 | 2 | 2 | 2 | 2 |
| T4R1 | 3 | 3 | 3 | 3 | 2 |
| T4R1 | 2 | 2 | 1 | 0 | 0 |
| T4R1 | 2 | 2 | 1 | 0 | 0 |
| T4R1 | 1 | 1 | 0 | 0 | 0 |
| T4R2 | 1 | 1 | 1 | 0 | 0 |
| T4R2 | 1 | 1 | 1 | 0 | 0 |
| T4R2 | 3 | 3 | 3 | 2 | 2 |
| T4R2 | 3 | 3 | 3 | 2 | 2 |
| T4R2 | 1 | 2 | 2 | 2 | 0 |
| T4R2 | 3 | 3 | 3 | 3 | 2 |
| T4R2 | 0 | 0 | 0 | 0 | 0 |

| | | | | | |
|------|---|---|---|---|---|
| T4R2 | 0 | 1 | 1 | 0 | 0 |
| T4R2 | 2 | 2 | 2 | 2 | 1 |
| T4R2 | 2 | 2 | 2 | 1 | 0 |
| T4R2 | 1 | 1 | 0 | 0 | 0 |
| T4R2 | 1 | 1 | 0 | 0 | 0 |
| T4R2 | 2 | 2 | 2 | 1 | 0 |
| T4R2 | 3 | 3 | 2 | 1 | 1 |
| T4R2 | 2 | 2 | 2 | 1 | 1 |
| T4R2 | 1 | 1 | 1 | 0 | 0 |
| T4R2 | 2 | 2 | 2 | 1 | 1 |
| T4R2 | 2 | 2 | 1 | 0 | 0 |
| T4R2 | 3 | 3 | 2 | 2 | 1 |
| T4R2 | 2 | 2 | 2 | 2 | 1 |
| T4R2 | 1 | 1 | 0 | 0 | 0 |
| T4R2 | 2 | 2 | 1 | 1 | 0 |
| T4R2 | 3 | 3 | 2 | 2 | 1 |
| T4R2 | 2 | 2 | 2 | 1 | 0 |
| T4R3 | 1 | 1 | 1 | 0 | 0 |
| T4R3 | 3 | 3 | 3 | 2 | 0 |
| T4R3 | 3 | 3 | 3 | 2 | 1 |
| T4R3 | 0 | 0 | 0 | 0 | 0 |
| T4R3 | 0 | 0 | 1 | 0 | 0 |
| T4R3 | 1 | 1 | 1 | 0 | 0 |
| T4R3 | 2 | 2 | 2 | 1 | 0 |
| T4R3 | 1 | 1 | 1 | 1 | 1 |
| T4R3 | 2 | 2 | 2 | 1 | 1 |

| | | | | | | |
|-------|------|-------------|-------------|-------------|-------------|-------------|
| | T4R3 | 1 | 1 | 0 | 0 | 0 |
| | T4R3 | 1 | 1 | 0 | 0 | 0 |
| | T4R3 | 2 | 2 | 1 | 1 | 0 |
| | T4R3 | 1 | 1 | 0 | 0 | 0 |
| | T4R3 | 0 | 0 | 0 | 0 | 0 |
| | T4R3 | 1 | 1 | 1 | 1 | 1 |
| | T4R3 | 2 | 2 | 2 | 1 | 0 |
| | T4R3 | 0 | 0 | 0 | 0 | 0 |
| | T4R3 | 2 | 2 | 2 | 1 | 0 |
| | T4R3 | 3 | 3 | 2 | 2 | 1 |
| | T4R3 | 2 | 2 | 2 | 2 | 1 |
| | T4R3 | 1 | 1 | 1 | 0 | 0 |
| | T4R3 | 2 | 2 | 1 | 1 | 0 |
| | T4R3 | 2 | 2 | 2 | 2 | 1 |
| | T4R3 | 1 | 1 | 0 | 0 | 0 |
| | 1 | 20 | 20 | 21 | 23 | 23 |
| Total | 2 | 31 | 32 | 30 | 18 | 6 |
| | 3 | 15 | 15 | 7 | 2 | 0 |
| | | 0.587962963 | 0.597222222 | 0.472222222 | 0.300925926 | 0.162037037 |
| | T5R1 | 2 | 2 | 2 | 2 | 1 |
| | T5R1 | 2 | 2 | 2 | 1 | 0 |
| | T5R1 | 1 | 1 | 0 | 0 | 0 |
| | T5R1 | 2 | 2 | 2 | 1 | 0 |
| | T5R1 | 2 | 2 | 2 | 1 | 0 |
| | T5R1 | 3 | 3 | 2 | 2 | 2 |
| | T5R1 | 3 | 3 | 2 | 1 | 0 |

| | | | | | |
|------|---|---|---|---|---|
| T5R1 | 2 | 2 | 1 | 0 | 0 |
| T5R1 | 2 | 2 | 2 | 2 | 1 |
| T5R1 | 1 | 1 | 0 | 0 | 0 |
| T5R1 | 2 | 2 | 1 | 1 | 0 |
| T5R1 | 3 | 3 | 1 | 0 | 0 |
| T5R1 | 2 | 2 | 1 | 0 | 0 |
| T5R1 | 2 | 2 | 2 | 1 | 0 |
| T5R1 | 3 | 3 | 2 | 1 | 0 |
| T5R1 | 2 | 2 | 2 | 2 | 1 |
| T5R1 | 1 | 1 | 0 | 0 | 0 |
| T5R1 | 2 | 2 | 1 | 0 | 0 |
| T5R1 | 3 | 3 | 2 | 1 | 0 |
| T5R1 | 2 | 2 | 2 | 2 | 1 |
| T5R1 | 2 | 2 | 2 | 1 | 0 |
| T5R1 | 3 | 3 | 2 | 1 | 0 |
| T5R1 | 2 | 2 | 2 | 2 | 1 |
| T5R1 | 1 | 1 | 0 | 0 | 0 |
| T5R2 | 3 | 3 | 2 | 2 | 1 |
| T5R2 | 2 | 2 | 1 | 1 | 0 |
| T5R2 | 3 | 3 | 2 | 1 | 1 |
| T5R2 | 1 | 1 | 1 | 0 | 0 |
| T5R2 | 2 | 2 | 2 | 1 | 0 |
| T5R2 | 0 | 0 | 0 | 0 | 0 |
| T5R2 | 3 | 2 | 2 | 1 | 1 |
| T5R2 | 3 | 3 | 2 | 1 | 0 |
| T5R2 | 2 | 2 | 1 | 0 | 0 |

| | | | | | |
|------|---|---|---|---|---|
| T5R2 | 1 | 1 | 0 | 0 | 0 |
| T5R2 | 2 | 2 | 2 | 1 | 0 |
| T5R2 | 2 | 2 | 2 | 1 | 0 |
| T5R2 | 3 | 3 | 2 | 2 | 1 |
| T5R2 | 2 | 2 | 1 | 1 | 1 |
| T5R2 | 2 | 2 | 1 | 0 | 0 |
| T5R2 | 2 | 2 | 2 | 1 | 0 |
| T5R2 | 3 | 3 | 2 | 2 | 1 |
| T5R2 | 2 | 2 | 1 | 1 | 0 |
| T5R2 | 3 | 3 | 2 | 1 | 0 |
| T5R2 | 2 | 2 | 1 | 0 | 0 |
| T5R2 | 2 | 2 | 1 | 0 | 0 |
| T5R2 | 1 | 1 | 0 | 0 | 0 |
| T5R2 | 2 | 2 | 1 | 1 | 0 |
| T5R2 | 3 | 3 | 2 | 1 | 1 |
| T5R3 | 1 | 1 | 1 | 0 | 0 |
| T5R3 | 2 | 2 | 2 | 2 | 1 |
| T5R3 | 1 | 1 | 1 | 0 | 0 |
| T5R3 | 0 | 0 | 0 | 0 | 0 |
| T5R3 | 1 | 1 | 1 | 0 | 0 |
| T5R3 | 2 | 2 | 2 | 1 | 0 |
| T5R3 | 2 | 2 | 2 | 1 | 1 |
| T5R3 | 3 | 3 | 2 | 2 | 1 |
| T5R3 | 2 | 2 | 1 | 0 | 0 |
| T5R3 | 3 | 3 | 3 | 2 | 1 |
| T5R3 | 2 | 2 | 2 | 1 | 0 |

| | | | | | | |
|-------|------|-------------|-------------|-------------|-------------|-------------|
| | T5R3 | 1 | 1 | 1 | 0 | 0 |
| | T5R3 | 2 | 2 | 1 | 1 | 0 |
| | T5R3 | 3 | 3 | 3 | 2 | 1 |
| | T5R3 | 2 | 2 | 2 | 1 | 0 |
| | T5R3 | 2 | 2 | 2 | 1 | 0 |
| | T5R3 | 3 | 3 | 2 | 2 | 1 |
| | T5R3 | 2 | 2 | 2 | 2 | 1 |
| | T5R3 | 2 | 2 | 2 | 1 | 0 |
| | T5R3 | 1 | 1 | 0 | 0 | 0 |
| | T5R3 | 1 | 1 | 0 | 0 | 0 |
| | T5R3 | 2 | 2 | 1 | 1 | 0 |
| | T5R3 | 3 | 3 | 2 | 2 | 1 |
| | T5R3 | 2 | 2 | 2 | 1 | 0 |
| | 1 | 13 | 13 | 21 | 32 | 19 |
| Total | 2 | 38 | 39 | 39 | 16 | 1 |
| | 3 | 19 | 18 | 2 | 0 | 0 |
| | | 0.675925926 | 0.671296296 | 0.486111111 | 0.296296296 | 0.097222222 |
| | T6R1 | 1 | 1 | 2 | 2 | 1 |
| | T6R1 | 1 | 2 | 2 | 2 | 1 |
| | T6R1 | 1 | 2 | 3 | 2 | 2 |
| | T6R1 | 2 | 3 | 3 | 2 | 2 |
| | T6R1 | 1 | 1 | 2 | 2 | 2 |
| | T6R1 | 0 | 0 | 0 | 1 | 1 |
| | T6R1 | 1 | 1 | 2 | 1 | 0 |
| | T6R1 | 1 | 2 | 2 | 2 | 1 |
| | T6R1 | 1 | 1 | 2 | 1 | 1 |

| | | | | | |
|------|---|---|---|---|---|
| T6R1 | 2 | 2 | 2 | 1 | 1 |
| T6R1 | 0 | 0 | 0 | 0 | 0 |
| T6R1 | 1 | 1 | 1 | 0 | 0 |
| T6R1 | 2 | 2 | 2 | 2 | 1 |
| T6R1 | 1 | 2 | 2 | 1 | 1 |
| T6R1 | 2 | 2 | 2 | 2 | 2 |
| T6R1 | 0 | 0 | 0 | 0 | 0 |
| T6R1 | 1 | 1 | 1 | 0 | 0 |
| T6R1 | 0 | 0 | 0 | 0 | 0 |
| T6R1 | 2 | 2 | 2 | 1 | 1 |
| T6R1 | 3 | 3 | 2 | 2 | 2 |
| T6R1 | 2 | 2 | 3 | 2 | 2 |
| T6R1 | 1 | 1 | 1 | 1 | 0 |
| T6R1 | 2 | 2 | 2 | 1 | 1 |
| T6R1 | 0 | 0 | 0 | 0 | 0 |
| T6R2 | 0 | 0 | 0 | 0 | 0 |
| T6R2 | 2 | 0 | 2 | 2 | 1 |
| T6R2 | 0 | 0 | 0 | 1 | 1 |
| T6R2 | 1 | 1 | 1 | 0 | 0 |
| T6R2 | 2 | 2 | 2 | 2 | 2 |
| T6R2 | 3 | 3 | 2 | 2 | 1 |
| T6R2 | 3 | 3 | 3 | 3 | 2 |
| T6R2 | 2 | 2 | 2 | 1 | 0 |
| T6R2 | 2 | 2 | 2 | 1 | 0 |
| T6R2 | 1 | 1 | 1 | 0 | 0 |
| T6R2 | 2 | 2 | 2 | 1 | 1 |

| | | | | | |
|------|---|---|---|---|---|
| T6R2 | 2 | 2 | 2 | 2 | 2 |
| T6R2 | 3 | 3 | 2 | 2 | 1 |
| T6R2 | 2 | 2 | 2 | 2 | 2 |
| T6R2 | 2 | 2 | 2 | 1 | 0 |
| T6R2 | 3 | 3 | 3 | 2 | 2 |
| T6R2 | 2 | 2 | 2 | 1 | 1 |
| T6R2 | 2 | 2 | 2 | 1 | 1 |
| T6R2 | 3 | 3 | 2 | 2 | 2 |
| T6R2 | 2 | 2 | 2 | 2 | 2 |
| T6R2 | 2 | 2 | 1 | 0 | 0 |
| T6R2 | 3 | 3 | 2 | 2 | 2 |
| T6R2 | 2 | 2 | 1 | 0 | 0 |
| T6R2 | 1 | 1 | 0 | 0 | 0 |
| T6R3 | 0 | 0 | 0 | 0 | 0 |
| T6R3 | 1 | 2 | 2 | 2 | 2 |
| T6R3 | 1 | 1 | 1 | 1 | 1 |
| T6R3 | 0 | 0 | 0 | 0 | 0 |
| T6R3 | 1 | 1 | 1 | 1 | 0 |
| T6R3 | 1 | 2 | 2 | 1 | 0 |
| T6R3 | 1 | 2 | 3 | 2 | 2 |
| T6R3 | 1 | 2 | 2 | 2 | 1 |
| T6R3 | 2 | 2 | 2 | 1 | 1 |
| T6R3 | 1 | 1 | 0 | 0 | 0 |
| T6R3 | 1 | 1 | 1 | 0 | 0 |
| T6R3 | 2 | 2 | 2 | 1 | 0 |
| T6R3 | 3 | 3 | 2 | 2 | 2 |

| | | | | | | |
|-------|------|-------------|-----|------------|-------|-------------|
| | T6R3 | 2 | 2 | 2 | 2 | 1 |
| | T6R3 | 1 | 1 | 1 | 0 | 0 |
| | T6R3 | 1 | 1 | 2 | 2 | 1 |
| | T6R3 | 0 | 0 | 0 | 0 | 0 |
| | T6R3 | 2 | 2 | 2 | 2 | 1 |
| | T6R3 | 1 | 1 | 2 | 2 | 1 |
| | T6R3 | 1 | 1 | 1 | 0 | 0 |
| | T6R3 | 2 | 2 | 2 | 2 | 1 |
| | T6R3 | 0 | 0 | 0 | 0 | 0 |
| | T6R3 | 0 | 0 | 0 | 0 | 0 |
| | T6R3 | 1 | 1 | 1 | 0 | 0 |
| | 1 | 27 | 19 | 13 | 20 | 25 |
| Total | 2 | 25 | 31 | 39 | 29 | 17 |
| | 3 | 8 | 9 | 6 | 1 | 0 |
| | | 0.467592593 | 0.5 | 0.50462963 | 0.375 | 0.273148148 |
| | T7R1 | 1 | 2 | 2 | 2 | 0 |
| | T7R1 | 2 | 2 | 3 | 3 | 3 |
| | T7R1 | 1 | 1 | 1 | 2 | 0 |
| | T7R1 | 1 | 1 | 1 | 2 | 0 |
| | T7R1 | 3 | 3 | 3 | 3 | 3 |
| | T7R1 | 3 | 3 | 2 | 1 | 0 |
| | T7R1 | 3 | 3 | 2 | 2 | 0 |
| | T7R1 | 3 | 3 | 2 | 3 | 2 |
| | T7R1 | 2 | 2 | 2 | 1 | 1 |
| | T7R1 | 2 | 2 | 2 | 1 | 0 |
| | T7R1 | 1 | 1 | 0 | 0 | 0 |

| | | | | | |
|------|---|---|---|---|---|
| T7R1 | 2 | 2 | 2 | 2 | 2 |
| T7R1 | 3 | 3 | 2 | 2 | 2 |
| T7R1 | 2 | 2 | 1 | 1 | 0 |
| T7R1 | 2 | 2 | 1 | 1 | 0 |
| T7R1 | 1 | 1 | 0 | 0 | 0 |
| T7R1 | 2 | 2 | 1 | 1 | 0 |
| T7R1 | 3 | 3 | 3 | 3 | 2 |
| T7R1 | 2 | 2 | 2 | 2 | 1 |
| T7R1 | 2 | 2 | 2 | 2 | 1 |
| T7R1 | 1 | 1 | 0 | 0 | 0 |
| T7R1 | 2 | 2 | 2 | 2 | 1 |
| T7R1 | 2 | 2 | 1 | 1 | 0 |
| T7R1 | 2 | 2 | 1 | 0 | 0 |
| T7R2 | 1 | 2 | 3 | 3 | 3 |
| T7R2 | 1 | 2 | 2 | 2 | 1 |
| T7R2 | 0 | 1 | 2 | 2 | 0 |
| T7R2 | 2 | 2 | 2 | 3 | 0 |
| T7R2 | 1 | 2 | 2 | 3 | 0 |
| T7R2 | 3 | 3 | 2 | 2 | 1 |
| T7R2 | 2 | 3 | 2 | 2 | 1 |
| T7R2 | 3 | 3 | 3 | 3 | 3 |
| T7R2 | 3 | 3 | 3 | 2 | 1 |
| T7R2 | 2 | 2 | 2 | 2 | 1 |
| T7R2 | 2 | 2 | 2 | 1 | 0 |
| T7R2 | 2 | 2 | 2 | 2 | 1 |
| T7R2 | 3 | 3 | 3 | 3 | 2 |

| | | | | | |
|------|---|---|---|---|---|
| T7R2 | 2 | 2 | 2 | 1 | 1 |
| T7R2 | 1 | 1 | 1 | 0 | 0 |
| T7R2 | 2 | 2 | 2 | 1 | 1 |
| T7R2 | 3 | 3 | 3 | 2 | 1 |
| T7R2 | 2 | 2 | 2 | 1 | 0 |
| T7R2 | 2 | 2 | 2 | 1 | 0 |
| T7R2 | 3 | 3 | 3 | 3 | 2 |
| T7R2 | 2 | 2 | 2 | 2 | 1 |
| T7R2 | 2 | 2 | 2 | 2 | 1 |
| T7R2 | 2 | 2 | 2 | 2 | 1 |
| T7R2 | 2 | 2 | 2 | 1 | 0 |
| T7R3 | 0 | 0 | 1 | 1 | 0 |
| T7R3 | 0 | 0 | 0 | 1 | 0 |
| T7R3 | 3 | 3 | 3 | 3 | 3 |
| T7R3 | 0 | 0 | 1 | 1 | 0 |
| T7R3 | 2 | 2 | 2 | 2 | 1 |
| T7R3 | 3 | 3 | 3 | 3 | 2 |
| T7R3 | 3 | 3 | 2 | 2 | 1 |
| T7R3 | 3 | 3 | 3 | 2 | 1 |
| T7R3 | 2 | 2 | 2 | 2 | 1 |
| T7R3 | 2 | 2 | 1 | 0 | 0 |
| T7R3 | 3 | 3 | 2 | 2 | 2 |
| T7R3 | 2 | 2 | 2 | 2 | 1 |
| T7R3 | 2 | 2 | 1 | 1 | 0 |
| T7R3 | 3 | 3 | 2 | 2 | 1 |
| T7R3 | 2 | 2 | 2 | 2 | 1 |

| | | | | | | |
|-------|------|-------------|-------------|-------------|-------------|-------------|
| | T7R3 | 1 | 1 | 0 | 0 | 0 |
| | T7R3 | 2 | 2 | 1 | 0 | 0 |
| | T7R3 | 3 | 3 | 2 | 1 | 1 |
| | T7R3 | 2 | 2 | 1 | 1 | 0 |
| | T7R3 | 3 | 3 | 2 | 2 | 1 |
| | T7R3 | 2 | 2 | 1 | 0 | 0 |
| | T7R3 | 1 | 1 | 0 | 0 | 0 |
| | T7R3 | 2 | 2 | 1 | 1 | 0 |
| | T7R3 | 3 | 3 | 2 | 1 | 0 |
| | 1 | 12 | 9 | 16 | 21 | 25 |
| Total | 2 | 35 | 38 | 38 | 29 | 8 |
| | 3 | 21 | 22 | 12 | 12 | 5 |
| | | 0.671296296 | 0.699074074 | 0.592592593 | 0.532407407 | 0.259259259 |
| | T8R1 | 2 | 2 | 2 | 1 | 1 |
| | T8R1 | 2 | 2 | 0 | 0 | 0 |
| | T8R1 | 2 | 2 | 0 | 0 | 0 |
| | T8R1 | 3 | 3 | 2 | 1 | 1 |
| | T8R1 | 2 | 3 | 3 | 1 | 1 |
| | T8R1 | 2 | 2 | 0 | 0 | 0 |
| | T8R1 | 3 | 3 | 3 | 0 | 0 |
| | T8R1 | 3 | 3 | 3 | 1 | 1 |
| | T8R1 | 3 | 3 | 2 | 1 | 0 |
| | T8R1 | 2 | 2 | 2 | 1 | 0 |
| | T8R1 | 2 | 1 | 1 | 0 | 0 |
| | T8R1 | 3 | 2 | 2 | 1 | 0 |
| | T8R1 | 2 | 1 | 1 | 0 | 0 |

| | | | | | |
|------|---|---|---|---|---|
| T8R1 | 1 | 0 | 0 | 0 | 0 |
| T8R1 | 2 | 1 | 1 | 0 | 0 |
| T8R1 | 3 | 3 | 2 | 1 | 0 |
| T8R1 | 2 | 2 | 2 | 1 | 1 |
| T8R1 | 3 | 3 | 3 | 2 | 2 |
| T8R1 | 2 | 1 | 1 | 0 | 0 |
| T8R1 | 2 | 2 | 2 | 1 | 0 |
| T8R1 | 3 | 3 | 3 | 2 | 1 |
| T8R1 | 2 | 2 | 0 | 0 | 0 |
| T8R1 | 2 | 1 | 0 | 0 | 0 |
| T8R1 | 1 | 0 | 0 | 0 | 0 |
| T8R2 | 2 | 1 | 0 | 0 | 0 |
| T8R2 | 3 | 2 | 1 | 0 | 0 |
| T8R2 | 2 | 1 | 0 | 0 | 0 |
| T8R2 | 2 | 1 | 1 | 0 | 0 |
| T8R2 | 3 | 2 | 2 | 1 | 1 |
| T8R2 | 2 | 1 | 0 | 0 | 0 |
| T8R2 | 2 | 2 | 0 | 0 | 0 |
| T8R2 | 3 | 2 | 2 | 1 | 1 |
| T8R2 | 2 | 2 | 2 | 1 | 0 |
| T8R2 | 3 | 2 | 1 | 0 | 0 |
| T8R2 | 2 | 1 | 0 | 0 | 0 |
| T8R2 | 2 | 2 | 1 | 1 | 0 |
| T8R2 | 3 | 3 | 2 | 2 | 1 |
| T8R2 | 2 | 1 | 0 | 0 | 0 |
| T8R2 | 1 | 1 | 0 | 0 | 0 |

| | | | | | |
|------|---|---|---|---|---|
| T8R2 | 2 | 2 | 1 | 0 | 0 |
| T8R2 | 1 | 0 | 0 | 0 | 0 |
| T8R2 | 1 | 0 | 0 | 0 | 0 |
| T8R2 | 2 | 2 | 2 | 1 | 1 |
| T8R2 | 3 | 2 | 1 | 0 | 0 |
| T8R2 | 2 | 2 | 1 | 0 | 0 |
| T8R2 | 1 | 0 | 0 | 0 | 0 |
| T8R2 | 1 | 0 | 0 | 0 | 0 |
| T8R2 | 1 | 0 | 0 | 0 | 0 |
| T8R3 | 2 | 2 | 1 | 0 | 0 |
| T8R3 | 3 | 2 | 2 | 1 | 1 |
| T8R3 | 3 | 2 | 2 | 0 | 0 |
| T8R3 | 2 | 2 | 0 | 0 | 0 |
| T8R3 | 1 | 1 | 0 | 0 | 0 |
| T8R3 | 2 | 1 | 1 | 0 | 0 |
| T8R3 | 2 | 1 | 1 | 1 | 1 |
| T8R3 | 3 | 2 | 2 | 1 | 0 |
| T8R3 | 2 | 2 | 2 | 1 | 0 |
| T8R3 | 2 | 2 | 1 | 0 | 0 |
| T8R3 | 3 | 2 | 1 | 1 | 0 |
| T8R3 | 1 | 0 | 0 | 0 | 0 |
| T8R3 | 2 | 2 | 1 | 0 | 0 |
| T8R3 | 2 | 1 | 0 | 0 | 0 |
| T8R3 | 3 | 3 | 2 | 2 | 2 |
| T8R3 | 2 | 2 | 1 | 1 | 0 |
| T8R3 | 1 | 0 | 0 | 0 | 0 |

| | | | | | | |
|-------|------|-------------|-------------|-------------|-------------|-------------|
| | T8R3 | 2 | 2 | 1 | 1 | 0 |
| | T8R3 | 3 | 2 | 2 | 1 | 0 |
| | T8R3 | 2 | 2 | 1 | 0 | 0 |
| | T8R3 | 1 | 0 | 0 | 0 | 0 |
| | T8R3 | 2 | 2 | 1 | 0 | 0 |
| | T8R3 | 3 | 3 | 2 | 2 | 1 |
| | T8R3 | 3 | 2 | 1 | 0 | 0 |
| | 1 | 12 | 16 | 22 | 23 | 13 |
| Total | 2 | 38 | 35 | 20 | 5 | 2 |
| | 3 | 22 | 11 | 5 | 0 | 0 |
| | | 0.712962963 | 0.550925926 | 0.356481481 | 0.152777778 | 0.078703704 |

Keterangan:

T : Perlakuan

R : Ulangan

Total : Jumlah tanaman yang terinfeksi

DAT : Hari Pengamatan

Lampiran 5. Hasil Uji Analisis Menggunakan SPSS (Severity)

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|----------------|----|-------------|---------|------|
| Between Groups | 10596,368 | 8 | 1324,546 | 357,627 | ,000 |
| Within Groups | 66,667 | 18 | 3,704 | | |
| Total | 10663,035 | 26 | | | |

| Perlakuan | N | Subset for alpha = 0.05 | | | | |
|------------------------|---|-------------------------|---------|---------|---------|---------|
| | | 1 | 2 | 3 | 4 | 5 |
| Duncan ^a T8 | 3 | 7,8700 | | | | |
| T5 | 3 | 9,7200 | | | | |
| T4 | 3 | | 16,2000 | | | |
| T1 | 3 | | | 20,3700 | | |
| T3 | 3 | | | 20,8300 | | |
| T7 | 3 | | | | 25,8367 | |
| T6 | 3 | | | | 27,3100 | |
| T2 | 3 | | | | 28,2400 | |
| T0 | 3 | | | | | 78,7000 |
| Sig. | | ,254 | 1,000 | ,773 | ,164 | 1,000 |

Lampiran 6. Contoh Perhitungan Mortalitas dan Severitas GMN-Metarhizium 1 g/L

1. Mortalitas

$$M = \frac{a}{b} \times 100\%$$

Keterangan:

M = Persentase Mortalitas (%)

a = Jumlah hama yang mati

b = Jumlah hama yang diamati

$$M = \frac{3}{20} \times 100\%$$

$$M = 0,15 \times 100\%$$

$$M = 15\%$$

2. Severitas

$$S = \frac{(n \times \text{Score 1}) + (n \times \text{Score 2}) + (n \times \text{Score 3})}{N \times 3} \times 100\%$$

Keterangan:

S = Severitas (tingkat keparahan (%))

n = Jumlah tanaman yang terinfeksi

N = Jumlah total tanaman sampel yang dinilai

$$S = \frac{((16 \times \text{Score 1}) + (39 \times \text{Score 2}) + (17 \times \text{Score 3}))}{72 \times 3} \times 100\%$$

$$S = \frac{((16) + (78) + (51))}{216} \times 100\%$$

$$S = \frac{145}{216} \times 100\%$$

$$S = 0,67 \times 100\%$$

$$S = 67\%$$

Lampiran 7. Alat dan Bahan Penelitian



Lampiran 8. Pengambilan Sampel Hama Tungau (*Tetranychus* sp.) dari *Nursery* dan *Rearing* ke dalam *Petridish*



Pengambilan Hama Tungau (*Tetranychus* sp.)



Rearing Hama Tungau (*Tetranychus* sp.) Kedalam *Petridish*

Lampiran 9. Pembagian Dosis Beberapa Bahan Pengendali



Pembagian Dosis Uji Laboratorium



Pembagian Dosis Uji *Nursery*

Lampiran 10. Lokasi dan Pembuatan Plot Penelitian



Lokasi Areal Penelitian



Pemberian Penandaan Sampel Tanaman



Pembuatan Plot Pengamatan

Lampiran 11. Pengaplikasian Beberapa Bahan Pengendali



Pengaplikasian di Laboratorium



Pengaplikasian di *Nursery*

Lampiran 12. Inkubasi dan Observasi Infeksi Jamur Entomopatogen



Pengambilan Hama Tungau (*Tetranychus* sp.) Yang Mati



Inkubasi Hama Pada *Petridish*



Observasi Jamur

Lampiran 13. Hasil Inkubasi Jamur Entomopatogen



Masa Inkubasi



Hasil Inkubasi

Lampiran 14. Pengambilan Data Tingkat Kematian (Mortalitas) di Laboratorium



**Lampiran 15. Pengambilan Data Penurunan Tingkat Keparahan (Severitas) di
*Nursery***



Lampiran 16. Tanaman *Acacia crassicarpa* Terserang Hama Tungau

