

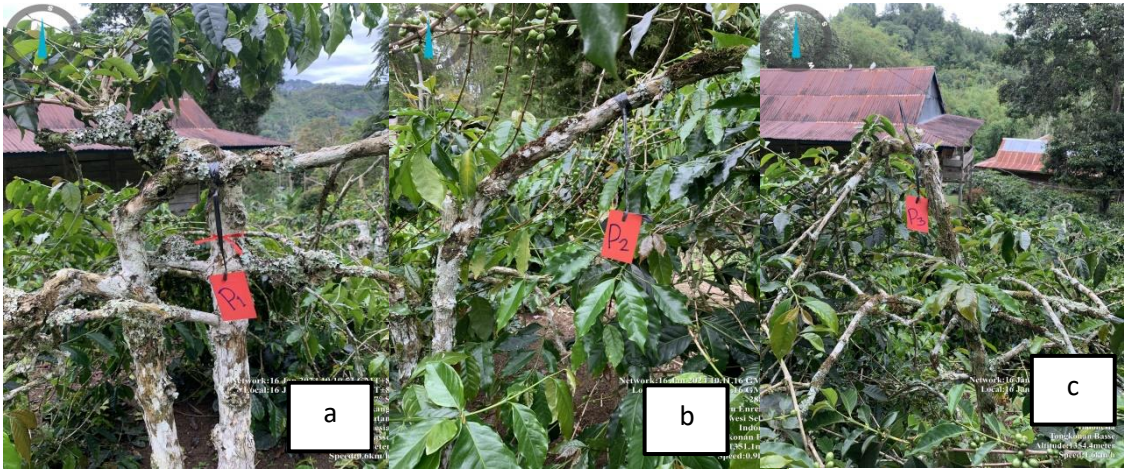
DAFTAR PUSTAKA

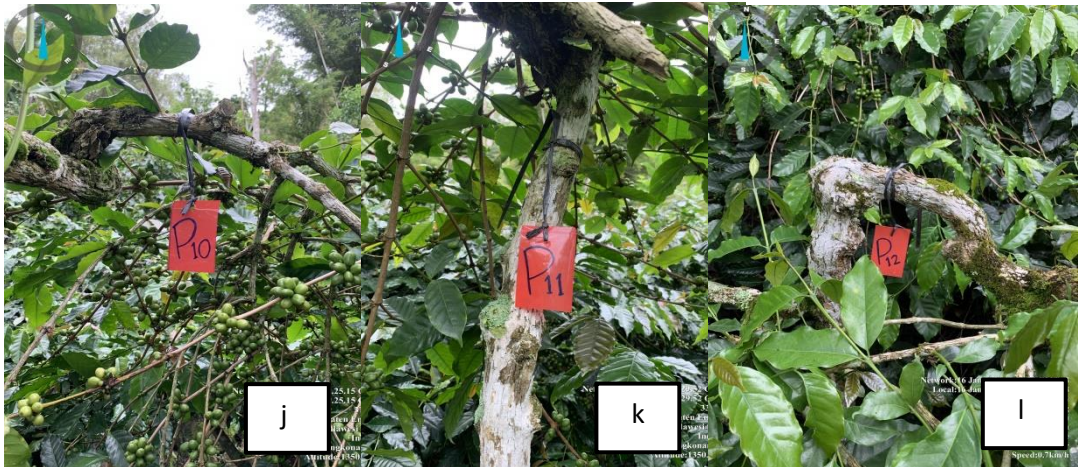
- Badan Pusat Statistik. 2021. Statistik Kopi Indonesia 2021. ISSN: 2714-8505
- Delgado, C., Couturier, G., Balcazar, L., dan Chichipe, A. 2023. *Insect pests of Theobroma cacao (Malvaceae) in the Peruvian Amazon. Tropical Agriculture, 100(2)*, 110–114.
- Drizd, Lara. 2003. *The Black Twig Borer: A Study of The Damage Done to Unprotected Hawaiian Coffe.*
- E. B. Greco, M. G. Wright, Ecology, Biology, and Management of *Xylosandrus compactus* (Coleoptera: Curculionidae: Scolytinae) with Emphasis on Coffee in Hawaii, *Journal of Integrated Pest Management*, Volume 6, Issue 1, March 2015, 7, <https://doi.org/10.1093/jipm/pmv007>
- Faizin, A. dan Maghfiroh, C. N. 2023. Pengaruh rorak terhadap serangan hama pada tanaman kopi Robusta (*Coffea robusta L.*). *AGROSAINTIFIKA, 5(2)*, 54–67.
- Greco, E. B., dan Wright, M. G. 2015. Ecology, biology, and management of *Xylosandrus compactus* (Coleoptera: Curculionidae: Scolytinae) with emphasis on coffee in Hawaii. *Journal of Integrated Pest Management*, 6(1), 1–8. <https://doi.org/10.1093/jipm/pmv007>
- Gugliuzzo, A., Criscione, G., Biondi, A., Aiello, D., Vitale, A., Polizzi, G., dan Tropea Garzia, G. 2020. Seasonal changes in population structure of the ambrosia beetle *Xylosandrus compactus* and its associated fungi in a southern Mediterranean environment. *PLoS One, 15(9)*, e0239011.
- Gugliuzzo, A., Mazzeo, G., Mansour, R., dan Tropea Garzia, G. 2019. Carob pests in the Mediterranean region: bio-ecology, natural enemies and management options. *Phytoparasitica, 47(5)*, 605–628.
- Hulcr, J., dan R. R. Dunn. 2011. The sudden emergence of pathogenicity in insect–fungus symbioses threatens naive forest. *Proc. R. Soc. Ser. B 278*: 2866–2873.
- Hulcr, J., T.H. Atkinson, A.I. Cognato, B.H. Jordal, dan D.D. McKenna. 2015. *Morphology, Taxonomy, and Phylogenetics of Bark Beetles.*
- Indriati, G., Sobari, I., dan Pranowo, D. B. P. T. I. dan P. J. R. P. K.. 2017. Intensitas Penggerek Cabang *Xylosandrus compactus* (Coleoptera: Curculionidae)

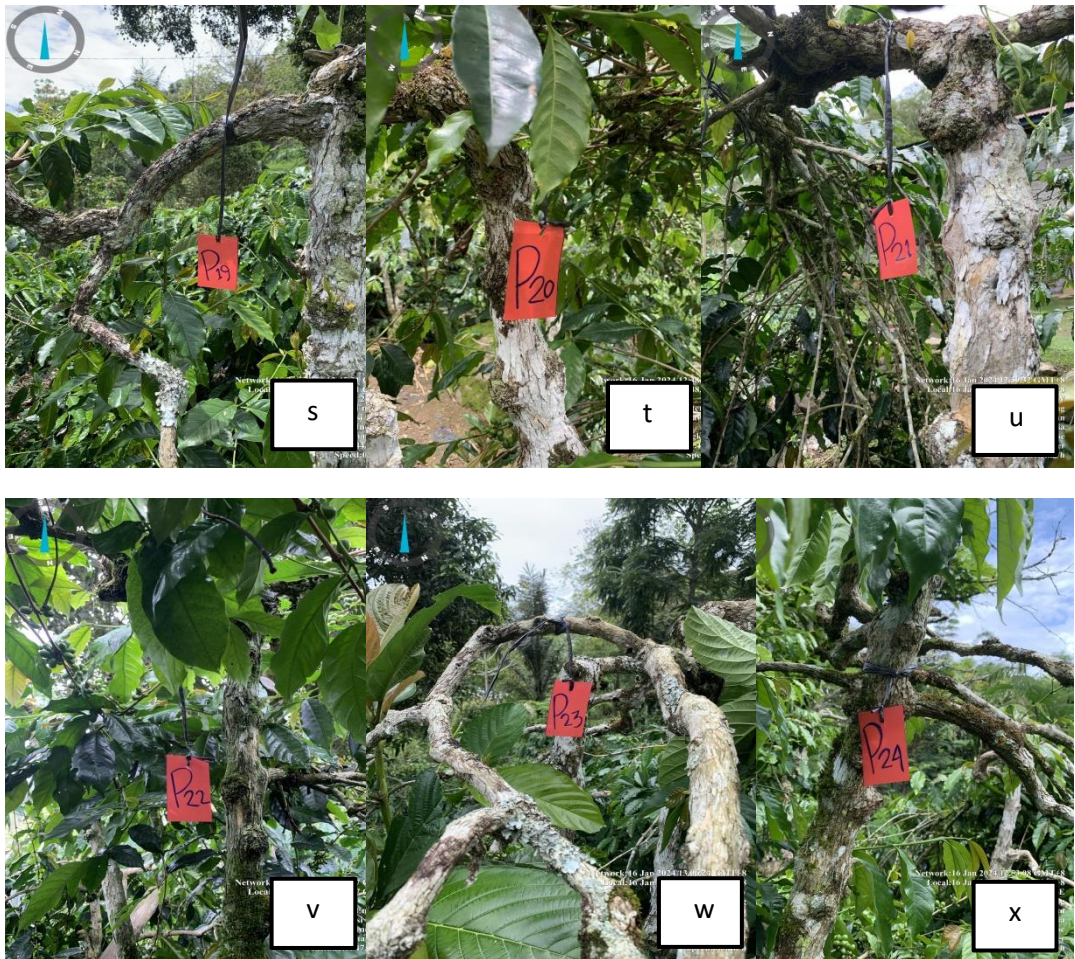
- Pada Empat Klon Kopi Robusta. *Jurnal Tanaman Industri Dan Penyegar*, 4(2), 99–106.
- Kalshoven, J. E., Korb, C. L., Schwemmer, G. K., dan Dombrowski, M. 1981. Laser remote sensing of atmospheric temperature by observing resonant absorption of oxygen. *Applied Optics*, 20(11), 1967-1971.
- Kii, E. B.. 2022. Analisis Pemasaran Dan Nilai Tambah Kopi Bubuk Arabika Di Cv. Gunung Catur (Doctoral Dissertation, Universitas Mahasaraswati Denpasar).
- Nurhapsa, N., Nuddin, A., Suherman, S., dan Barbara, B. 2020. Is input utilization inelastic to coffee production. *International Journal of Agriculture System*, 8(1), 26-33.
- Pennacchio, F., Santini, L., dan Francardi, V. 2012. Bioecological notes on *Xylosandrus compactus* (Eichhoff) (Coleoptera Curculionidae Scolytinae), a species recently recorded into Italy. *Redia*, 95, 67–77.
- Permana, R. D., dan Masrilurrahman, L. S. 2021. Identifikasi Tingkat Kerusakan Pada Tanaman Kopi Yang Di Sebabkan Oleh Hama Di Desa Karang Sidemen Kecamatan Batukliang Utara Kabupaten Lombok Tengah. *Jurnal Silva Samalas*, 4(1), 10-14.
- Rahayu, S., Setiawan, A., Husaeni, E. A., dan Suyanto, S. 2006. Pengendalian hama *Xylosandrus compactus* pada agroforestri kopi multistrata secara hayati: Studi kasus dari Kecamatan Sumberjaya, Lampung Barat. *Jurnal Agrivita*, 28(3).
- Riba-Flinch, J. M., Garreta, A., Aymamí, A., Lumbierres, B., Mas, H., dan Gallego, D. 2022. Current status and first detection of *Xylosandrus germanus* (Coleoptera: Curculionidae: Scolytinae) in live trees in the Iberian Peninsula. *EPPO Bulletin*, 52(2), 463–470.
- Sari, I. G. A. A. H., dan Sudiartha, G. M. 2019. *Pengendalian Kualitas Proses Produksi Kopi Arabika Pada Ud. Cipta Lestari Di Desa Pujungan* (Doctoral dissertation, Udayana University).
- Septiani, B. A., dan Kawuryan, I. S. S. 2021. Analisa Penyebab Turunnya Produksi Kopi Robusta Kabupaten Temanggung. *EKUITAS (Jurnal Ekonomi dan Keuangan)*, 5(3), 365-388.
- Silaen, S. 2021. Pengaruh Transpirasi Tumbuhan dan Komponen Didalamnya. Universitas HKBP Nommensen Pematangsiantar. *Agroprimatech* vol 5:1.

- Solichah, C., Wicaksono, D., Waluya, W., dan Brotodjojo, R. R. 2020. Pengendalian Hayati Hama Dan Penyakit Tanaman Kopi. Lppm Upn "Veteran" Yogyakarta, Yogyakarta.
- Supiyandi, S., Hasibuan, M. S., dan Harahap, H. 2024. Penerapan Metode HAAR-LIKE Feature dan Algoritma Adaboost dalam Penentuan Klasifikasi Hama Tanaman Kopi. *Journal of Science and Social Research*, 7(1), 87–93.
- Urvois T, Auger-Rozenberg MA, dan Roques A. 2021. Climate change impact on the potential geographical distribution of two invading *Xylosandrus ambrosia* beetles. *Sci Rep* 11:1339
- Urvois, T., Perrier, C., Roques, A., Sauné, L., Courtin, C., Li, Y., dan Kerdelhué, C. 2022. A first inference of the phylogeography of the worldwide invader *Xylosandrus compactus*. *Journal of Pest Science*, 95(3), 1217-1231.
- Wood, S.L. 2007. Bark and Ambrosia Beetles of South America (Coleoptera, Scolytinae). Print and Mail Production Center, Brigham Young University, Utah.
- Yuhendra, A., dan Pebrian, S. 2023. Analisis Daya Saing Ekspor Kopi Indonesia Di Pasar Dunia. *Jurnal Ilmiah Ekonomi, Manajemen dan Syariah (JIEMAS)*, 2(2), 155-160.

LAMPIRAN



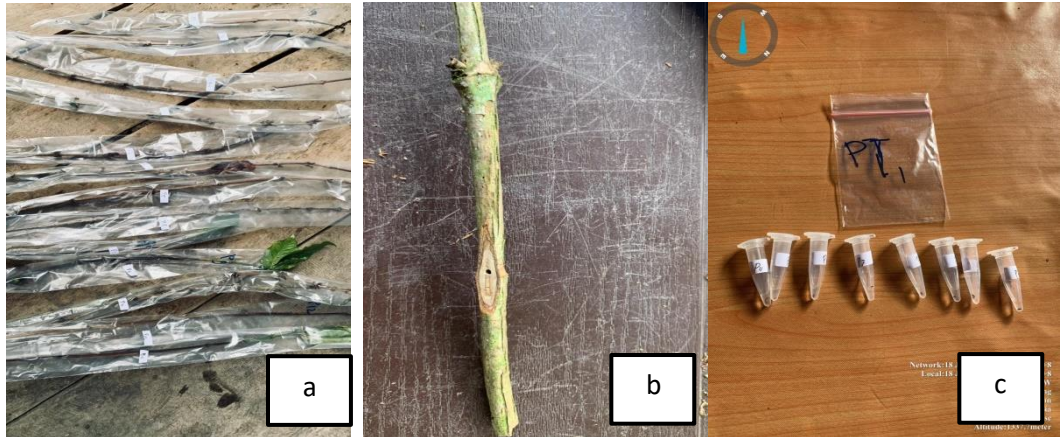




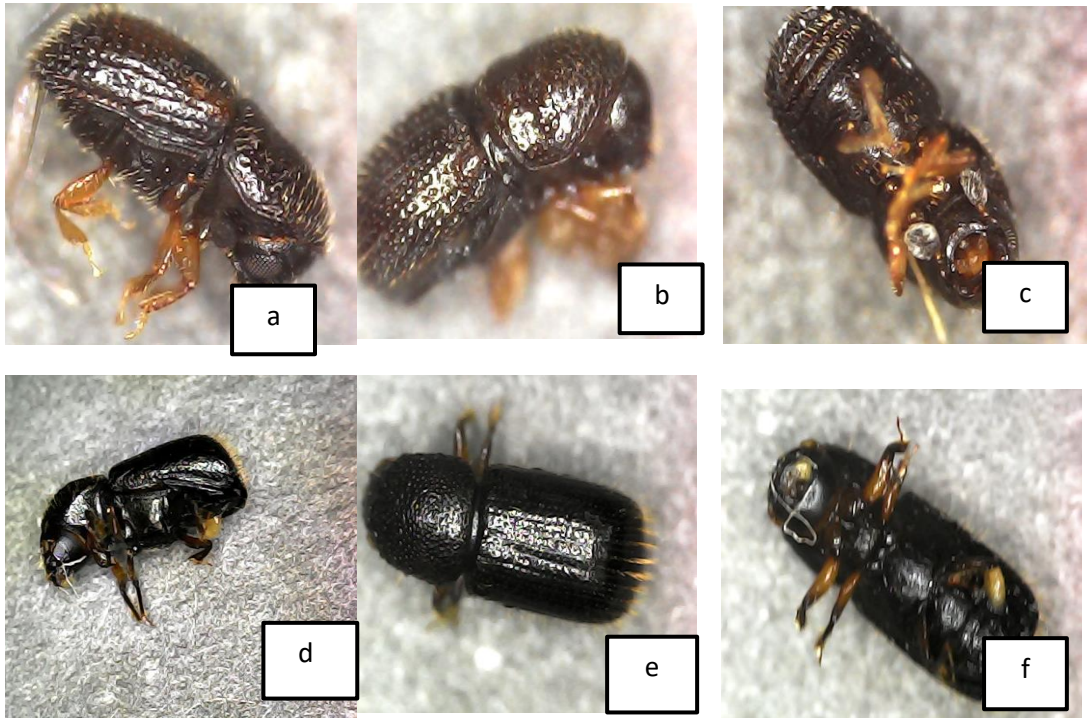
Lampiran 1. Tanaman sampel yang digunakan.



Lampiran 2. Pengamatan *X. compactus*



Lampiran 3. Gejala serangan *X. compactus*, (a) ranting yang bergejala serangan *X. compactus* dari beberapa tanaman sampel, (b) lubang bekas gerakan *X. compactus*, (c) sampel *X. compactus* yang diambil lalu dimasukkan dalam tube.



Lampiran 4. Penampakan *X. Compactus* dengan perbesaran 1600X pada mikroskop (a) *X. compactus* jantan Tampak lateral (b) *X. compactus* jantan Tampak dorsal, (c) *X. compactus* jantan tampak ventral, (d) *X. compactus* betina tampak lateral, (e) *X. compactus* betina tampak dorsal, (f) *X. compactus* betina tampak ventral.

Lampiran 5. Hasil pengamatan Intensitas serangan *X. Compactus* minggu pertama

Pengamatan 1			
Sampel	Jumlah Total Ranting	J. Ranting Terserang	IS
1	22	0	0.00
2	30	1	3.33
3	17	1	5.88
4	35	0	0.00
5	39	0	0.00
6	16	0	0.00
7	25	0	0.00
8	17	1	5.88
9	27	1	3.70
10	14	0	0.00
11	19	0	0.00
12	18	1	5.56
13	25	1	4.00
14	12	0	0.00
15	18	0	0.00
16	18	1	5.56
17	16	0	0.00
18	23	1	4.35
19	11	0	0.00
20	14	1	7.14
21	12	0	0.00
22	11	0	0.00
23	14	0	0.00
24	19	1	5.26
Total	472	10	50.67
Rata-Rata	19.67	0.42	2.11

Lampiran 6. Hasil pengamatan Intensitas serangan *X. Compactus* minggu kedua

Pengamatan 2			
Sampel	Jumlah Total Ranting	J. Ranting Terserang	IS
1	22	1	4.55
2	29	0	0.00
3	16	1	6.25
4	35	2	5.71
5	39	1	2.56
6	16	0	0.00
7	25	1	4.00
8	16	1	6.25
9	26	1	3.85
10	14	0	0.00
11	19	0	0.00
12	17	1	5.88
13	24	1	4.17
14	12	0	0.00
15	18	0	0.00
16	17	1	5.88
17	16	0	0.00
18	22	1	4.55
19	11	0	0.00
20	13	1	7.69
21	12	0	0.00
22	11	0	0.00
23	14	0	0.00
24	18	1	5.56
Total	462	14	66.89
Rata-Rata	19.25	0.58	2.79

Lampiran 7. Hasil pengamatan Intensitas serangan *X. Compactus* minggu ketiga

Pengamatan 3			
Sampel	Jumlah Total Ranting	J. Ranting Terserang	IS
1	21	1	4.76
2	29	1	3.45
3	15	1	6.67
4	33	0	0.00
5	38	1	2.63
6	16	2	12.50
7	24	0	0.00
8	15	1	6.67
9	25	1	4.00
10	14	0	0.00
11	19	0	0.00
12	16	2	12.50
13	23	1	4.35
14	12	0	0.00
15	18	1	5.56
16	16	1	6.25
17	16	1	6.25
18	21	0	0.00
19	11	0	0.00
20	12	0	0.00
21	12	1	8.33
22	11	1	9.09
23	14	0	0.00
24	17	1	5.88
Total	448	17	98.89
Rata-Rata	18.67	0.71	4.12

Lampiran 8. Hasil pengamatan Intensitas serangan *X. Compactus* minggu keempat.

Pengamatan 4			
Sampel	Jumlah Total Ranting	J. Ranting Terserang	IS
1	20	1	5.00
2	28	2	7.14
3	14	0	0.00
4	33	0	0.00
5	37	1	2.70
6	14	1	7.14
7	24	0	0.00
8	14	1	7.14
9	24	2	8.33
10	14	1	7.14
11	19	0	0.00
12	14	1	7.14
13	22	1	4.55
14	12	0	0.00
15	17	1	5.88
16	15	1	6.67
17	15	2	13.33
18	21	1	4.76
19	11	1	9.09
20	12	2	16.67
21	11	0	0.00
22	10	0	0.00
23	14	0	0.00
24	16	0	0.00
Total	431	19	112.70
Rata-Rata	17.96	0.79	4.70

Lampiran 9. Hasil pengamatan Intensitas serangan *X. Compactus* minggu kelima

Pengamatan 5			
Sampel	Jumlah Total Ranting	J. Ranting Terserang	IS
1	19	1	5.26
2	26	0	0.00
3	14	0	0.00
4	33	1	3.03
5	36	1	2.78
6	13	1	7.69
7	24	1	4.17
8	13	0	0.00
9	22	2	9.09
10	13	0	0.00
11	19	0	0.00
12	13	1	7.69
13	21	2	9.52
14	12	1	8.33
15	16	1	6.25
16	14	1	7.14
17	13	1	7.69
18	20	1	5.00
19	10	1	10.00
20	10	1	10.00
21	11	0	0.00
22	10	0	0.00
23	14	0	0.00
24	16	1	6.25
Total	412	18	109.91
Rata-Rata	17.17	0.75	4.58

Lampiran 10. Hasil pengamatan Intensitas serangan *X. Compactus* minggu keenam

Pengamatan 6			
Sampel	Jumlah Total Ranting	J. Ranting Terserang	IS
1	18	1	5.56
2	26	0	0.00
3	14	0	0.00
4	32	1	3.13
5	35	1	2.86
6	12	1	8.33
7	23	0	0.00
8	13	1	7.69
9	20	2	10.00
10	13	1	7.69
11	19	0	0.00
12	12	1	8.33
13	19	3	15.79
14	11	1	9.09
15	15	1	6.67
16	13	1	7.69
17	12	1	8.33
18	19	1	5.26
19	9	0	0.00
20	9	0	0.00
21	11	0	0.00
22	10	1	10.00
23	14	0	0.00
24	15	0	0.00
Total	394	18	116.42
Rata-Rata	16.42	0.75	4.85

Lampiran 11. Hasil pengamatan Intensitas serangan *X. Compactus* minggu ketujuh

Pengamatan 7			
Sampel	Jumlah Total Ranting	J. Ranting Terserang	IS
1	17	0	0.00
2	26	2	7.69
3	14	0	0.00
4	31	0	0.00
5	34	1	2.94
6	11	1	9.09
7	23	0	0.00
8	12	1	8.33
9	18	3	16.67
10	12	0	0.00
11	19	2	10.53
12	11	2	18.18
13	16	3	18.75
14	10	0	0.00
15	14	2	14.29
16	12	3	25.00
17	11	2	18.18
18	18	1	5.56
19	9	0	0.00
20	9	2	22.22
21	11	0	0.00
22	9	1	11.11
23	14	0	0.00
24	15	2	13.33
Total	376	28	201.87
Rata-Rata	15.67	1.17	8.41

Lampiran 12. Hasil pengamatan Intensitas serangan *X. Compactus* minggu kedelapan

Pengamatan 8			
Sampel	Jumlah Total Ranting	J. Ranting Terserang	IS
1	17	1	5.88
2	24	0	0.00
3	14	0	0.00
4	31	1	3.23
5	33	1	3.03
6	10	1	10.00
7	23	0	0.00
8	11	1	9.09
9	15	2	13.33
10	12	1	8.33
11	17	0	0.00
12	9	1	11.11
13	13	3	23.08
14	10	1	10.00
15	12	1	8.33
16	9	1	11.11
17	9	1	11.11
18	17	0	0.00
19	9	1	11.11
20	7	0	0.00
21	11	0	0.00
22	8	1	12.50
23	14	0	0.00
24	13	0	0.00
Total	348	18	151.25
Rata-Rata	14.50	0.75	6.30

Lampiran 13. Hasil pengamatan Intensitas serangan *X. Compactus* minggu kesembilan

Pengamatan 9			
Sampel	Jumlah Total Ranting	J. Ranting Terserang	IS
1	16	0	0.00
2	24	2	8.33
3	14	0	0.00
4	30	1	3.33
5	32	2	6.25
6	9	1	11.11
7	23	1	4.35
8	10	0	0.00
9	13	2	15.38
10	11	0	0.00
11	17	1	5.88
12	8	0	0.00
13	10	1	10.00
14	9	1	11.11
15	11	1	9.09
16	8	1	12.50
17	8	1	12.50
18	17	2	11.76
19	8	0	0.00
20	7	0	0.00
21	11	1	9.09
22	7	0	0.00
23	14	1	7.14
24	13	0	0.00
Total	330	19	137.84
Rata-Rata	13.75	0.79	5.74

Lampiran 14. Populasi *X. Compactus* berdasarkan jumlah imago

Populasi X.compactus Berdasarkan Jumlah Imago											
Sampel	Pengamatan									Total	Rata-Rata
	1	2	3	4	5	6	7	8	9		
1	0	1	1	0	1	1	0	1	0	5	0,56
2	1	0	0	1	0	0	1	0	0	3	0,33
3	0	1	0	0	0	0	0	0	0	1	0,11
4	0	1	0	0	0	1	0	1	0	3	0,33
5	0	1	1	0	1	1	0	0	0	4	0,44
6	0	0	0	0	0	1	0	1	0	2	0,22
7	0	0	0	0	0	0	1	0	0	1	0,11
8	0	0	0	1	0	0	1	0	0	2	0,22
9	0	0	0	0	0	1	1	0	0	2	0,22
10	0	0	0	0	0	0	0	1	0	1	0,11
11	0	0	0	0	0	0	1	0	0	1	0,11
12	0	0	1	0	1	1	1	0	0	4	0,44
13	0	0	0	1	1	0	1	0	0	3	0,33
14	0	0	0	0	0	0	0	1	0	1	0,11
15	0	0	0	1	0	0	1	0	0	2	0,22
16	0	0	1	1	0	1	0	0	1	4	0,44
17	1	0	0	0	1	1	1	0	0	4	0,44
18	0	0	0	0	0	0	1	0	1	2	0,22
19	0	0	0	0	1	0	0	0	0	1	0,11
20	1	0	0	0	1	0	1	0	0	3	0,33
21	0	0	0	1	0	0	0	0	1	2	0,22
22	0	0	1	0	0	0	0	1	0	2	0,22
23	0	0	0	0	0	0	0	0	1	1	0,11
24	0	1	0	0	1	0	1	0	0	3	0,33
Total	3	5	5	6	8	8	12	6	4	57	6,33

Lampiran 15. Populasi jantan dan betina *X. Compactus*

Pengamatan	Jantan	Betina	Total
1	0	3	3
2	1	4	5
3	2	3	5
4	2	4	6
5	1	7	8
6	3	5	8
7	3	9	12
8	2	4	6
9	0	4	4
Total	14	43	57
1: 3	1	3	