

LAMPIRAN-LAMPIRAN



Perangkap Jebak
Pekarangan

No	Jumlah individu	Pi = ni/N	Pi ln Pi	Pi (ln Pi) ²
1	483	0.558	-0.326	0.190
2	268	0.310	-0.363	0.425
3	34	0.039	-0.127	0.410
4	21	0.024	-0.090	0.334
5	17	0.020	-0.078	0.306
6	17	0.020	-0.078	0.306
7	12	0.014	-0.060	0.225
8	3	0.003	-0.017	0.282
9	1	0.001	-0.007	0.048
Σ	865		-1.146	2.556

$$\begin{aligned}
 \text{var } H' \text{ pekarangan} &= \frac{\sum p_i(\ln p_i)^2 - (\sum p_i \ln p_i)^2}{N} - \frac{S-1}{2N^2} \\
 &= \frac{2.556 - (-1.146)^2}{865} - \frac{9-1}{(2 \times 865)^2} \\
 &= \frac{2.556 - 1.313}{865} - \frac{8}{2992900} \\
 &= \frac{1.243}{865} - 2.673 \cdot 10^{-3} \\
 &= 1.437 \cdot 10^{-3} - 2.673 \cdot 10^{-6} \\
 &= 1.434 \cdot 10^{-3}
 \end{aligned}$$

Sawah

No	Jumlah individu	Pi = ni/N	Pi ln Pi	Pi (ln Pi) ²
1	908	0.768	-0.203	0.054
2	165	0.140	-0.275	0.541
3	32	0.027	-0.098	0.352
4	23	0.019	-0.075	0.298
5	23	0.019	-0.075	0.298
6	17	0.014	-0.060	0.255
7	14	0.012	-0.053	0.352
Σ	1182		-0.839	2.033

$$\begin{aligned}
 \text{var } H' \text{ sawah} &= \frac{\sum p_i (\ln p_i)^2 - (\sum p_i \ln p_i)^2}{N} \cdot \frac{S-1}{2N^2} \\
 &= \frac{2.033 - (-0.839)^2}{1182} \cdot \frac{7-1}{(2 \times 1182)^2} \\
 &= \frac{2.033 - 0.704}{1182} \cdot \frac{6}{5588496} \\
 &= 1.010 \cdot 10^{-3} - 1.074 \cdot 10^{-6} \\
 &= 1.00910^{-3}
 \end{aligned}$$

Tegalan

No	Jumlah individu	Pi = ni/N	Pi ln Pi	Pi (ln Pi) ²
1	636	0.433	-0.362	0.303
2	565	0.385	-0.385	0.351
3	94	0.064	-0.176	0.484
4	73	0.050	-0.150	0.449
5	62	0.042	-0.133	0.422
6	25	0.017	-0.070	0.282
7	13	0.009	-0.042	0.200
Σ	1468		-1.300	2.491

$$\begin{aligned}
 \text{var } H' \text{ tegalan} &= \frac{\sum p_i (\ln p_i)^2 - (\sum p_i \ln p_i)^2}{N} \cdot \frac{S-1}{2N^2} \\
 &= \frac{2.491 - (-1.300)^2}{1468} \cdot \frac{7-1}{(2 \times 1468)^2} \\
 &= \frac{2.491 - 1.69}{1468} \cdot \frac{6}{8620096} \\
 &= 5.456 \cdot 10^{-4} - 5.449 \cdot 10^{-4} \\
 &= 7.000 \cdot 10^{-3}
 \end{aligned}$$

pekarangan terhadap sawah:

$$t = \frac{H'_1 - H'_2}{(\text{Var}H'_1 + \text{Var}H'_2)^{1/2}}$$

$$= \frac{0.307}{(2.443 \cdot 10^{-3})^{1/2}}$$

$$= \frac{0.307}{4.943 \cdot 10^{-2}}$$

$$= 6.211$$

$$df = \frac{(\text{Var}H_1' + \text{Var}H_2')^2}{\left[\frac{(\text{Var}H_1')^2}{N_1} \right] + \left[\frac{(\text{Var}H_2')^2}{N_2} \right]}$$

$$= \frac{(1.434 \cdot 10^{-3} + 1.009 \cdot 10^{-3})^2}{\left[\frac{(1.434 \cdot 10^{-3})^2}{865} \right] + \left[\frac{(1.009 \cdot 10^{-3})^2}{1182} \right]}$$

$$= \frac{5.968 \cdot 10^{-6}}{2.377 \cdot 10^{-9} + 8.613 \cdot 10^{-10}}$$

$$= \frac{5.968 \cdot 10^{-6}}{3.238 \cdot 10^{-9}}$$

$$= 1843.113$$

t hitung = 6.211 lebih besar dari t tabel = 1.96 pada taraf kepercayaan 95 %, berarti berbeda nyata, hal ini menunjukkan bahwa keanekaragaman Arthropoda tanah antara lokasi pekarangan dan lokasi sawah berbeda nyata

Tegalan terhadap Sawah:

$$t = \frac{H_1' - H_2'}{(\text{Var}H_1' + \text{Var}H_2')^{1/2}}$$

$$= \frac{1.300 - 0.839}{(7.000 \cdot 10^{-3} + 1.009 \cdot 10^{-3})^{1/2}}$$

$$= \frac{0.461}{0.089}$$

$$= 5.180$$

$$\begin{aligned}
 df &= \frac{(VarH_1' + VarH_2')^2}{\left[\frac{(VarH_1')^2}{N_1} \right] + \left[\frac{(VarH_2')^2}{N_2} \right]} \\
 &= \frac{(7.000.10^{-3} + 1.009.10^{-3})^2}{\left[\frac{(7.000.10^{-3})^2}{1468} \right] + \left[\frac{(1.009.10^{-3})^2}{1182} \right]} \\
 &= \frac{6.144.10^{-7}}{3.338.10^{-8} + 8.613.10^{-10}} \\
 &= \frac{6.144.10^{-7}}{3.424.10^{-8}} \\
 &= 1873.364
 \end{aligned}$$

t hitung = 5.180 lebih besar dari t tabel = 1.96 pada taraf kepercayaan 95 %, berarti berbeda nyata Hal ini menunjukkan bahwa keanekaragaman Arthropoda tanah antara lokasi tegalan dan lokasi sawah berbeda nyata. Kelimpahan Arthropoda tanah pada lokasi sawah lebih tinggi daripada lokasi tegalan.

Tegalan terhadap Pekarangan

$$\begin{aligned}
 t &= \frac{H_1' - H_2'}{(VarH_1' + VarH_2')^{1/2}} \\
 &= \frac{1.300 - 1.146}{(7.000.10^{-3} + 1.434.10^{-3})^{1/2}} \\
 &= \frac{0.15}{0.092} \\
 &= 1.678
 \end{aligned}$$

$$\begin{aligned}
 df &= \frac{(VarH_1' + VarH_2')^2}{\left[\frac{(VarH_1')^2}{N_1} \right] + \left[\frac{(VarH_2')^2}{N_2} \right]} \\
 &= \frac{(7.000.10^{-3} + 1.434.10^{-3})^2}{\left[\frac{(7.000.10^{-3})^2}{1468} \right] + \left[\frac{(1.434.10^{-3})^2}{865} \right]} \\
 &= \frac{7.113.10^{-7}}{3.338.10^{-8} + 2.377.10^{-9}} \\
 &= \frac{7.113.10^{-7}}{3.576.10^{-8}} \\
 &= 1989.150
 \end{aligned}$$

t hitung = 1.678 lebih kecil dari t tabel = 1.96 pada taraf kepercayaan 95 %, berarti berbeda tidak nyata. Hal ini menunjukkan bahwa keanekaragaman Arthropoda tanah antara lokasi tegalan dan pekarangan perbedaannya tidak secara nyata.



Lampiran 2. Uji-t Indeks Keanekaragaman Artropoda Tanah dengan Metode Bor Tanah

Bor pencuplik (core sampler)

Pekarangan

No	Jumlah	Pi = ni/N	Pi ln Pi	Pi (ln Pi) ²
1.	1260	0.316	-0.364	0.419
2.	1050	0.263	-0.351	0.469
3.	840	0.211	-0.328	0.511
4.	840	0.211	-0.328	0.511
Σ	3990		-1.364	1.910

$$\begin{aligned}
 \text{var H' pekarangan} &= \frac{\sum pi(\ln pi)^2 - (\sum pi \ln pi)^2}{N} - \frac{S-1}{2N^2} \\
 &= \frac{1.910 - (-1.371)^2}{3990} - \frac{4-1}{(2 \times 3990)^2} \\
 &= \frac{1.910 - 1.879}{3990} - \frac{3}{63680400} \\
 &= 7.769 \cdot 10^{-6} - 4.711 \cdot 10^{-8} \\
 &= 7.722 \cdot 10^{-6}
 \end{aligned}$$

Sawah

No	Jumlah	Pi = ni/N	Pi ln Pi	Pi (ln Pi) ²
1.	1470	0.318	-0.364	0.417
2.	1470	0.318	-0.364	0.417
3.	840	0.182	-0.310	0.528
4.	630	0.136	-0.271	0.541
5.	210	0.045	-0.140	0.433
Σ	4620		-0.999	2.336

$$\begin{aligned}
 \text{var H' sawah} &= \frac{\sum pi(\ln pi)^2 - (\sum pi \ln pi)^2}{N} - \frac{S-1}{2N^2} \\
 &= \frac{2.336 - (-1.449)^2}{4620} - \frac{5-1}{(2 \times 4620)^2} \\
 &= \frac{2.336 - 2.190}{4620} - \frac{4}{85377600} \\
 &= 5.108 \cdot 10^{-5} - 4.685 \cdot 10^{-8} \\
 &= 5.103 \cdot 10^{-5}
 \end{aligned}$$

Tegalan

No	Jumlah	Pi = ni/N	Pi ln Pi	Pi (ln Pi) ²
1.	27090	0.733	-0.228	0.071
2.	2730	0.074	-0.193	0.502
3.	5040	0.136	-0.271	0.541
4.	1050	0.028	-0.100	0.358
5.	840	0.023	-0.087	0.327
6.	210	0.006	-0.031	0.157
Σ	36960		-0.910	1.956

$$\begin{aligned}
 \text{var } H' \text{ tegalan} &= \frac{\sum pi(\ln pi)^2 - (\sum pi \ln pi)^2}{N} \cdot \frac{S-1}{2N^2} \\
 &= \frac{1.956 - (-0.910)^2}{36960} \cdot \frac{6-1}{(2 \times 36960)^2} \\
 &= \frac{1.956 - 0.828}{36960} \cdot \frac{5}{5464166400} \\
 &= 3.052 \cdot 10^{-5} - 9.151 \cdot 10^{-10} \\
 &= 3.052 \cdot 10^{-5}
 \end{aligned}$$

Sawah terhadap Pekarangan

$$\begin{aligned}
 t &= \frac{H'_1 - H'_2}{(\text{Var}H'_1 + \text{Var}H'_2)^{1/2}} \\
 &= \frac{1.449 - 1.371}{(5.103 \cdot 10^{-5} + 7.722 \cdot 10^{-6})^{1/2}} \\
 &= \frac{0.078}{0.766 \cdot 10^{-2}} \\
 &= 10.183
 \end{aligned}$$

$$\begin{aligned}
 df &= \frac{(\text{Var}H'_1 + \text{Var}H'_2)^2}{\left[(\text{Var}H'_1)^2 / N_1 \right] + \left[(\text{Var}H'_2)^2 / N_2 \right]} \\
 &= \frac{(5.103 \cdot 10^{-5} + 7.722 \cdot 10^{-6})^2}{\left[(5.103 \cdot 10^{-5})^2 / 4620 \right] + \left[(7.722 \cdot 10^{-6})^2 / 3990 \right]}
 \end{aligned}$$

$$\begin{aligned}
 &= \frac{(3.452 \cdot 10^{-10})^2}{(5.637 \cdot 10^{-13}) + (1.494 \cdot 10^{-14})} \\
 &= \frac{3.452 \cdot 10^{-10}}{5.786 \cdot 10^{-13}} \\
 &= 5965.434
 \end{aligned}$$

t hitung = 10.183 lebih besar dari t tabel = 1.96 pada taraf kepercayaan 95 %, berarti berbeda nyata. Hal ini menunjukkan bahwa keanekaragaman Arthropoda tanah antara lokasi pekarangan dan lokasi sawah berbeda secara nyata. Keanekaragaman di lokasi sawah lebih tinggi daripada lokasi pekarangan.

Sawah terhadap Tegalan

$$\begin{aligned}
 t &= \frac{H'_1 - H'_2}{(\text{Var}H'_1 + \text{Var}H'_2)^{1/2}} \\
 &= \frac{1.449 - 0.910}{(5.103 \cdot 10^{-5} + 3.052 \cdot 10^{-5})^{1/2}} \\
 &= \frac{0.539}{0.903 \cdot 10^{-2}} \\
 &= 59.690 \\
 df &= \frac{(\text{Var}H'_1 + \text{Var}H'_2)^2}{\left[\frac{(\text{Var}H'_1)^2}{N_1} \right] + \left[\frac{(\text{Var}H'_2)^2}{N_2} \right]} \\
 &= \frac{(5.103 \cdot 10^{-5} + 3.052 \cdot 10^{-5})^2}{\left[\frac{(5.103 \cdot 10^{-5})^2}{4620} \right] + \left[\frac{(3.052 \cdot 10^{-5})^2}{36960} \right]} \\
 &= \frac{6.650 \cdot 10^{-9}}{5.637 \cdot 10^{-13} + 2.520 \cdot 10^{-14}} \\
 &= \frac{6.650 \cdot 10^{-9}}{5.889 \cdot 10^{-13}} \\
 &= 11292.919
 \end{aligned}$$

t hitung = 59.690 lebih besar dari t tabel = 1.96 pada taraf kepercayaan 95 %, berarti berbeda nyata. Hal ini menunjukkan bahwa keanekaragaman Arthropoda tanah antara lokasi sawah dan lokasi tegalan berbeda secara nyata.

Pekarangan terhadap Tegalan

$$\begin{aligned}
 t &= \frac{H_1' - H_2'}{(\text{Var}H_1' + \text{Var}H_2')^{1/2}} \\
 &= \frac{1.371 - 0.910}{(7.722 \cdot 10^{-6} + 3.052 \cdot 10^{-5})^{1/2}} \\
 &= \frac{0.461}{(3.824 \cdot 10^{-5})^{1/2}} \\
 &= \frac{0.461}{0.618 \cdot 10^{-2}} \\
 &= 74.595
 \end{aligned}$$

$$\begin{aligned}
 df &= \frac{(\text{Var}H_1' + \text{Var}H_2')^2}{\left[\frac{(\text{Var}H_1')^2}{N_1} \right] + \left[\frac{(\text{Var}H_2')^2}{N_2} \right]} \\
 &= \frac{(7.722 \cdot 10^{-6} + 3.052 \cdot 10^{-5})^2}{\left[\frac{(7.722 \cdot 10^{-6})^2}{3990} \right] + \left[\frac{(3.052 \cdot 10^{-5})^2}{36960} \right]} \\
 &= \frac{1.462 \cdot 10^{-10}}{1.494 \cdot 10^{-14} + 2.520 \cdot 10^{-14}} \\
 &= \frac{1.462 \cdot 10^{-10}}{4.014 \cdot 10^{-14}} \\
 &= 36429.995
 \end{aligned}$$

t hitung = 74.595 lebih besar dari t tabel = 1.96 pada taraf kepercayaan 95 %, berarti berbeda nyata. Hal ini menunjukkan bahwa keanekaragaman Arthropoda tanah antara lokasi pekarangan dan lokasi tegalan berbeda secara nyata.

Lampiran 3. Analisis Regresi Kelimpahan Individu Artropoda Tanah dengan Metode Perangkap Jebak.

data file: ANIK_W.STA [9 cases with 9 variables]

VARIABLE SPECIFICATIONS:

No	Name	Format	MD Code	Long Label
3	A	8.2	-9999	
4	P	8.2	-9999	
5	T	8.2	-9999	
6	D	8.2	-9999	
7	E	8.2	-9999	
8	F	8.2	-9999	
9	G	8.2	-9999	
1	JMINDI_1	8.3	-9999	

Missing data casewise deleted

data file: ANIK_W.STA [9 cases with 9 variables]

MULTIPLE REGRESSION PRINTS:

Forward stepwise regression, no. of steps: 9

Dependent Variable: JMINDI_1

Multiple R: .652562262

Multiple R-Square: .726862445

Adjusted R-Square: .562979912

Number of cases: 9

F(3, 5) = 4.435265 p < .071216

Standard Error of Estimate: .149046544

Intercept: -4.734657932 Std. Error: 3.731484 t(5) = -1.269 p < .260358

no other s to enter exceeds specified limit

SIAT. Regression Summary for Dependent Variable: JMINDI_1

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Multiple R: .652562262 Multiple R-Square: .726862445 Adjusted R-Square: .562979912

F(3, 5) = 4.435265 p < .071216 Std. Error of Estimate: .149046544

Var	BETA	St. Err. of BETA	B	St. Err. of B	t(5)	p-level
Intercept			-4.73466	3.731484	-1.26884	.260358
1	.157727	.037017	.04603	.037017	1.24393	.260358
2	.773473	.031173	.03203	.031173	1.02762	.320322
3	.000000	.000000	.000000	.000000	.000000	.000000

VARIABLE SPECIFICATIONS:

No	Name	Format	MD Code	Long Label
3	A	8.2	-9999	
4	B	8.2	-9999	
5	C	8.2	-9999	
6	D	8.2	-9999	
7	E	8.2	-9999	
8	F	8.2	-9999	
9	G	8.2	-9999	
2	JMIND_2	8.3	-9999	

Missing data casewise deleted

Data file: ANIK_W.STA [9 cases with 9 variables]

MULTIPLE REGRESSION RESULTS:

Forward stepwise regression, no. of steps: 6

Dependent Variable: JMIND_2

Multiple R: .995345557

Multiple R-Square: .990712779

Adjusted R-Square: .982951113

Number of cases: 9

F(6, 2) = 35.55828 p < .027604

Standard Error of Estimate: .093114014

Intercept: -3.269869068 Std. Error: 3.381217 t(2) = -.9671 p < .435535

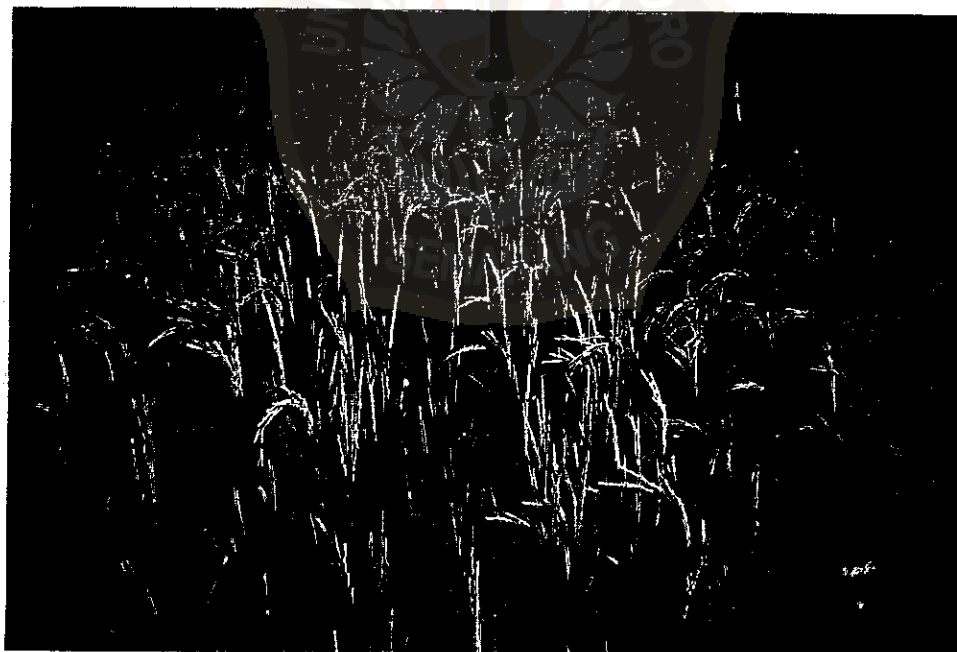
Other F to enter exceeds specified limit

STAT. Regression Summary for Dependent Variable: JMIND_2						
MULTIPLE R= .99534556 R ² = .99071278 Adjusted R ² = .98295111						
REGRESS. F(6,2)=35.558 p<.02760 Std. Error of estimate: .09311						
N=9	BETA	St. Err. OF BETA	B	St. Err. OF B	t(2)	p-level
Intercept			-3.26987	3.381217	-.9671	.435535
C	-.21693	.185993	-1.14234	.095924	-11.9001	.000004
E	1.38492	.123004	1.09930	.097849	11.2510	.000007
D	1.71552	.164448	1.35267	.145430	9.3008	.011363
A	1.11053	.154570	1.11404	.155057	7.1847	.019827
B	-.50134	.127246	-.16864	.1042803	-3.9399	.053796
G	.22894	.104638	.76121	.347913	2.1879	.160159

Lampiran 5. Lokasi Penelitian



Gambar 1. Lokasi Pekarangan



Gambar 2. Lokasi Sawah



Gambar 3. Lokasi Tegalan



Lampiran 6. Ordo-ordo Artropoda Predominan



Gambar 1. Ordo Collembola pada perbesaran 10x



Gambar 2. Ordo Hymenoptera pada perbesaran 10x

LAMPIRAN 7

DATA KELIMPAHAN INDIVIDU ARTHROPODA TANAH

1. PEKARANGAN

NO	NAMA ORDO	JUMLAH INDIVIDU		Di (%)	
		P. JEBAK	B. TANAH	P. JEBAK	B. TANAH
1.	Collembola	483	-	55.8	-
2.	Hymenoptera	268	840	31.0	21.1
3.	Araneidea	34	-	3.9	-
4.	Diptera	21	1260	2.4	31.6
5.	Coleoptera	17	1050	2.0	26.3
6.	Orthoptera	17	-	2.0	-
7.	Acarina	12	-	1.4	-
8.	Opilliones	3	-	0.3	-
9.	Centipoda	1	-	0.1	-
10.	Isoptera	-	840	-	21.1
	Jml total	865	3990		
	H' P. jebak = 1.146		e = 0.665		
	H' B. tanah = 1.371		e = 0.165		

2. SAWAH

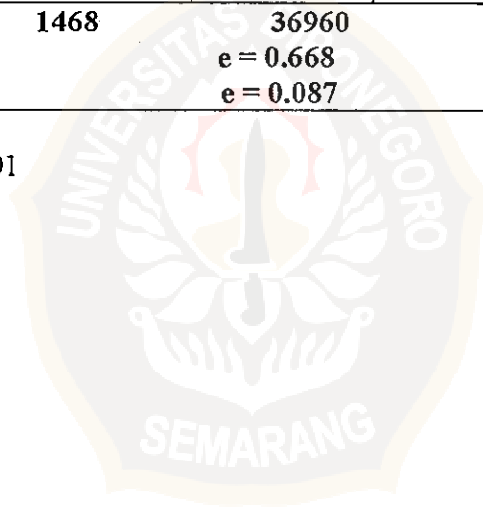
NO	NAMA ORDO	JUMLAH INDIVIDU		Di (%)	
		P. JEBAK	B. TANAH	P. JEBAK	B. TANAH
1.	Collembola	908	630	76.8	31.8
2.	Hymenoptera	165	1470	14.0	31.8
3.	Acarina	32	-	2.7	-
4.	Araneidea	23	-	1.9	-
5.	Diptera	23	840	1.9	18.2
6.	Coleoptera	17	1470	1.4	31.8
7.	Orthoptera	14	210	1.2	4.5
	Jml total	1182	4620		
	H' P. jebak = 0.839		e = 0.431		
	H' B. tanah = 1.449		e = 0.172		

Lanjutan LAMPIRAN 7

3. TEGALAN

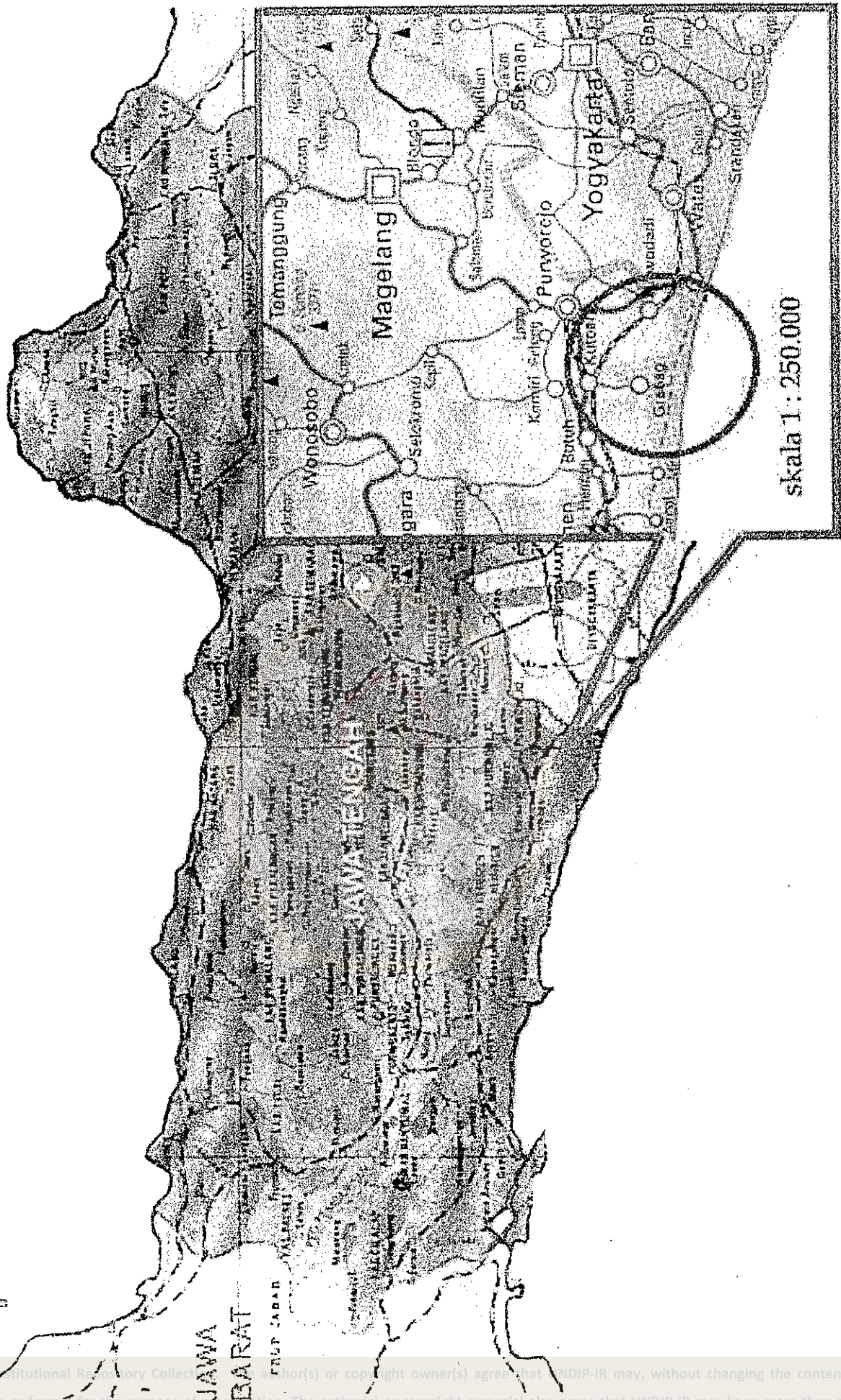
NO	NAMA ORDO	JUMLAH INDIVIDU		Di (%)	
		P. JEBAK	B. TANAH	P. JEBAK	B. TANAH
1.	Collembola	636	840	43.3	8.7
2.	Hymenoptera	565	27090	38.5	22.8
3.	Coleoptera	94	5040	6.4	27.1
4.	Araneidea	73	-	5.0	-
5.	Orthoptera	62	-	4.2	-
6.	Acarina	25	-	1.7	-
7.	Diptera	13	2730	0.9	19.3
8.	Isoptera	-	1050		10.0
9.	Centipoda	-	210	-	3.1
	Jml total	1468	36960		
	H' P. jebak = 1.300		e = 0.668		
	H' B. tanah = 0.910		e = 0.087		

Data primer, Mei' 2001



PETA LOKASI PENELITIAN

skala 1 : 2.250.000



skala 1 : 250.000