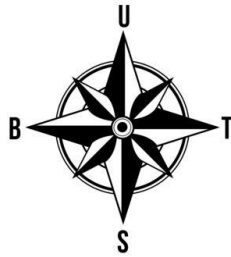


LAMPIRAN

Lampiran 1. *Layout* Percobaan



Ulangan 2

B2	P2
	P1
	P3
B1	P3
	P1
	P2
B0	P3
	P2
	P1

Ulangan 1

B1	P1
	P2
	P3
B0	P2
	P1
	P3
B2	P2
	P1
	P3

Ulangan 3

B0	P3
	P1
	P2
B2	P2
	P3
	P1
B1	P1
	P3
	P2

Pengacakan unit percobaan dilakukan dengan menggunakan *software spreadsheet*.

Keterangan :

Petak Utama Faktor konsentrasi ZPT BAP:

B0 = 0 ppm

B1 = 50 ppm

B2 = 100 ppm

Lampiran 1. (Lanjutan)

Anak Petak Faktor dosis pupuk NPK

P1 = 1,25 ton/ha

P2 = 2,50 ton/ha

P3 = 3,75 ton/ha

Ulangan:

U1 = Ulangan 1

U2 = Ulangan 2

U3 = Ulangan 3

Lampiran 2. Deskripsi Bawang Merah Varietas Bima Brebes

Asal	: lokal Brebes
Umur	: -mulai berbunga 50 hari -panen (60 % batang melemas)
Tinggi tanaman	: 34,5 cm (25 – 44 cm)
Kemampuan berbunga (alami)	: agak sukar
Banyak anakan	: 7 – 12 umbi per rumpun
Bentuk daun	: silindris, berlubang
Warna daun	: hijau
Banyak daun	: 14 – 50 helai
Bentuk bunga	: seperti payung
Warna bunga	: putih
Banyak buah/tangkai	: 60 – 100 (83)
Banyak bunga/tangkai	: 120 – 160
Banyak tangkai bunga/rumpun	: 2 – 4
Bentuk biji	: bulat, gepeng, berkeriput
Warna biji	: hitam
Bentuk umbi	: lonjong bercincin kecil pada leher cakram
Warna umbi	: merah muda
Produksi umbi	: 9,9 ton/ha umbi kering
Susut bobot umbi (basah-kering)	: 21,5 %
Ketahanan terhadap penyakit	: cukup tahan terhadap busuk umbi (<i>Botrytis allii</i>)
Kepekaan terhadap penyakit	: peka terhadap busuk ujung daun (<i>Phytophthora porri</i>)
Keterangan	: baik untuk dataran rendah
Peneliti	: Hendro Sunarjono, Prasodjo, Darliah dan Nasran Horizon Arbain

Lampiran 3. Kriteria Penilaian Sifat Kimia Tanah

Sifat Tanah	Sangat Rendah	Rendah	Sedang	Tinggi	Sangat Tinggi
N-Total (%)	< 0,1	0,1 – 0,2	0,21 – 0,5	0,51 – 0,75	>0,75
P-Tersedia (ppm P)	< 4,00	5,00 – 7,00	8,00 – 10,00	11,00 – 15,00	>15,00
K-Tersedia (me/100g tanah)	< 0,1	0,1 – 0,3	0,4 – 0,5	0,6 – 1,00	>1,00
C-Organik (%)	< 1,00	1,00 – 2,00	2,01 – 3,00	3,01 – 5,00	>5,00
C/N	< 5	5,00 – 10,00	11,00 – 15,00	16,00 – 25,00	>25,00
KTK (me/100g tanah)	<5	5 – 16	17 – 24	25 – 40	>40,00
Sifat tanah	Sangat masam	Masam	Agak masam	Netral	Alkalis
pH	< 4,5	4,5 – 5,5	5,6 – 6,5	6,6 – 7,5	>8,5

Berdasarkan Balai Pengujian Standar Instrumen Tanah dan Pupuk, (2023)

Lampiran 4. Perhitungan Kebutuhan Konsentrasi BAP

Perlakuan konsentrasi BAP:

B0 : Konsentrasi BAP 0 ppm

B1 : Konsentrasi BAP 50 ppm

B2 : Konsentrasi BAP 100 ppm

Pembuatan larutan sitokinin untuk perlakuan

Kemurnian sitokinin (BAP) = 100%.

1. Larutan sitokinin konsentrasi 50 ppm

$$M1 \times C1 = M2 \times C2$$

$$M1 \times 100\% = 50 \text{ mg} \times 100\%$$

$$M1 = (50 \text{ mg} \times 100\%) / 100\%$$

$$M1 = 50 \text{ mg}$$

$$M1 = 0,05 \text{ g}$$

Larutan sitokinin konsentrasi 50 ppm dibuat dengan cara sitokinin sebanyak 50 mg dilarutkan dengan menggunakan beberapa tetes HCl lalu ditambah akuades hingga volume mencapai 1.000 ml. Total larutan sitokinin konsentrasi 50 ppm yang dibutuhkan untuk aplikasi kepada 27 tanaman dengan volume aplikasi 100 ml adalah 2.700 ml.

Keterangan:

M1 = Massa BAP (mg)

M2 = Massa BAP 50 mg

C1 = Kemurnian BAP 100%

C2 = Kemurnian BAP 100%

Lampiran 4. (Lanjutan)

2. Larutan sitokinin konsentrasi 100 ppm

$$M1 \times C1 = M2 \times C2$$

$$M1 \times 100\% = 100 \text{ mg} \times 100\%$$

$$M1 = (100 \text{ mg} \times 100\%) / 100\%$$

$$M1 = 100 \text{ mg}$$

$$M1 = 0,1 \text{ g}$$

Larutan sitokinin konsentrasi 100 ppm dibuat dengan cara sitokinin sebanyak 100 mg dilarutkan dengan menggunakan beberapa tetes HCl lalu ditambah akuades hingga volume mencapai 1.000 ml. Total larutan sitokinin konsentrasi 100 ppm yang dibutuhkan untuk aplikasi kepada 27 tanaman dengan volume aplikasi 100 ml adalah 2.700 ml.

Keterangan:

M1 = Massa BAP (mg)

M2 = Massa BAP 100 mg

C1 = Kemurnian BAP 100%

C2 = Kemurnian BAP 100%

Lampiran 5. Perhitungan Taraf Perlakuan Pupuk NPK

Dosis Pupuk NPK per Tanaman

$$P1 = 5 \text{ g/tanaman}$$

$$P2 = 10 \text{ g/tanaman}$$

$$P3 = 15 \text{ g/tanaman}$$

$$\text{Jarak tanam tanaman bawang merah} = 20 \times 20 \text{ cm}$$

$$= 0,2 \times 0,2 \text{ m}$$

$$= 0,04 \text{ m}$$

$$\text{Populasi tanaman/ha} = \text{luas lahan/jarak tanam}$$

$$= 10.000\text{m}^2/0,04 \text{ m}^2$$

$$= 250.000 \text{ tanaman/ha}$$

Dosis Pupuk NPK

$$P1 = 5 \text{ g/tanaman} \times 250.000 = 1.250 \text{ kg/ha} = 1,25 \text{ ton/ha}$$

$$P2 = 10 \text{ g/tanaman} \times 250.000 = 2.500 \text{ kg/ha} = 2,50 \text{ ton/ha}$$

$$P3 = 15 \text{ g/tanaman} \times 250.000 = 3.750 \text{ kg/ha} = 3,75 \text{ ton/ha}$$

Lampiran 6. Data Suhu Lingkungan

Tanggal	Suhu (°C)				Rata-rata
	06.00 – 09.00	09.00 – 11.00	12.00 – 15.00	15.00 – 18.00	
04/11/2025	30,86	35,44	28,29	26,04	30,16
05/11/2025	30,52	33,03	24,29	24,50	28,09
06/11/2025	28,36	33,54	26,41	24,18	28,12
07/11/2025	28,86	35,40	36,48	28,55	32,32
08/11/2025	25,44	32,08	32,36	26,96	29,21
09/11/2025	27,16	35,32	32,69	28,07	30,81
10/11/2025	28,99	35,77	32,77	28,37	31,48
11/11/2025	26,28	33,69	29,21	24,52	28,43
12/11/2025	27,48	31,33	31,67	24,42	28,73
13/11/2025	28,62	32,93	30,20	26,97	29,68
14/11/2025	27,39	32,81	30,71	26,64	29,39
15/11/2025	29,83	33,96	30,84	26,68	30,33
16/11/2025	29,63	33,67	29,51	25,34	29,54
17/11/2025	28,53	33,93	30,41	24,08	29,24
18/11/2025	30,24	36,99	34,53	28,51	32,57
19/11/2025	28,84	32,93	31,88	27,78	30,36
20/11/2025	30,02	34,51	32,45	27,72	31,18
21/11/2025	30,89	31,21	29,37	24,81	29,07
22/11/2025	29,98	36,07	31,72	26,96	31,18
23/11/2025	29,99	32,67	33,50	27,07	30,81
24/11/2025	30,34	33,54	32,10	27,72	30,93
25/11/2025	30,61	33,69	31,94	28,53	31,19
26/11/2025	31,24	34,18	29,79	25,00	30,05
27/11/2025	30,07	33,61	31,13	28,27	30,77
28/11/2025	32,23	35,46	31,59	26,93	31,55
29/11/2025	31,76	36,68	35,36	29,18	33,25
30/11/2025	31,86	38,11	35,73	29,47	33,79
01/12/2025	29,21	34,62	28,54	24,03	29,10
02/12/2025	30,97	36,70	35,98	28,41	33,02
03/12/2025	28,08	33,64	35,97	30,00	31,92
04/12/2025	29,43	27,55	25,76	25,03	26,94
05/12/2025	31,82	35,82	28,84	27,13	30,90
06/12/2025	32,11	35,11	27,27	23,99	29,62
07/12/2025	30,71	36,08	30,32	27,72	31,21
08/12/2025	32,91	33,90	31,74	27,05	31,40
09/12/2025	28,38	33,85	30,68	25,36	29,57
10/12/2025	29,43	34,61	28,76	23,80	29,15
11/12/2025	27,78	33,78	32,97	25,09	29,91

Tanggal	Suhu (°C)				Rata-rata
	06.00 – 09.00	09.00 – 11.00	12.00 – 15.00	15.00 – 18.00	
12/12/2025	29,90	35,55	30,78	29,43	31,42
13/12/2025	29,30	33,75	33,44	27,28	30,94
14/12/2025	27,87	31,21	26,66	24,27	27,50
15/12/2025	29,84	33,07	31,74	29,65	31,08
16/12/2025	30,57	35,66	34,38	29,67	32,57
17/12/2025	32,63	36,52	33,02	27,51	32,42
18/12/2025	31,79	31,43	26,06	24,58	28,47
19/12/2025	26,31	32,07	30,88	27,76	29,26
20/12/2025	31,19	35,73	31,24	26,18	31,09
21/12/2025	31,95	36,63	30,00	24,47	30,76
22/12/2025	31,46	36,82	31,90	27,23	31,85
Rata-rata	29,79	34,22	31,10	26,71	

Lampiran 7. Data Kelembaban Lingkungan

Tanggal	Kelembaban Relatif (%RH)				Rata-rata
	06.00 – 09.00	09.00 – 11.00	12.00 – 15.00	15.00 – 18.00	
04/11/2025	72,02	55,58	76,16	90,89	73,66
05/11/2025	74,51	63,98	98,25	100,00	84,19
06/11/2025	100,00	100,00	100,00	100,00	100,00
07/11/2025	100,00	65,29	51,30	77,20	73,45
08/11/2025	98,22	70,88	68,14	88,22	81,37
09/11/2025	86,41	56,42	62,93	80,23	71,50
10/11/2025	82,60	55,26	64,52	82,27	71,16
11/11/2025	100,00	75,08	78,24	99,79	88,28
12/11/2025	85,69	67,56	68,20	98,61	80,02
13/11/2025	80,66	59,19	70,05	86,09	74,00
14/11/2025	92,82	65,54	72,54	88,86	79,94
15/11/2025	80,26	62,74	72,92	88,88	76,20
16/11/2025	81,60	63,61	77,24	99,31	80,44
17/11/2025	85,65	63,67	75,41	100,00	81,18
18/11/2025	93,09	53,87	56,86	80,39	71,05
19/11/2025	83,59	63,63	66,94	79,87	73,51
20/11/2025	79,53	56,28	62,53	86,37	71,18
21/11/2025	75,11	73,32	81,03	99,42	82,22
22/11/2025	82,31	54,30	65,63	83,66	71,48
23/11/2025	78,08	65,88	60,59	87,76	73,08
24/11/2025	78,36	64,83	68,49	82,33	73,50
25/11/2025	76,06	61,65	63,49	77,81	69,75
26/11/2025	74,68	62,25	78,52	98,87	78,58
27/11/2025	92,55	72,02	83,17	84,87	83,15
28/11/2025	72,87	55,31	67,48	84,27	69,98
29/11/2025	70,40	50,11	52,76	72,04	61,33
30/11/2025	68,98	47,72	53,29	71,54	60,38
01/12/2025	80,82	61,96	79,09	98,57	80,11
02/12/2025	77,44	51,59	52,45	80,02	65,38
03/12/2025	86,17	65,04	53,53	76,14	70,22
04/12/2025	82,39	81,52	91,71	94,08	87,43
05/12/2025	68,93	55,02	75,26	85,17	71,10
06/12/2025	69,69	55,75	84,48	100,00	77,48
07/12/2025	75,12	54,30	74,28	85,69	72,35
08/12/2025	68,02	61,42	68,44	91,97	72,46
09/12/2025	89,41	64,15	74,07	97,53	81,29
10/12/2025	81,96	61,55	80,46	100,00	80,99
11/12/2025	88,44	65,42	67,70	95,24	79,20

Lampiran 7. (Lanjutan)

Tanggal	Kelembaban Relatif (%RH)				Rata-rata
	06.00 – 09.00	09.00 – 11.00	12.00 – 15.00	15.00 – 18.00	
12/12/2025	82,42	57,68	75,77	80,54	74,10
13/12/2025	83,31	64,67	64,77	87,23	75,00
14/12/2025	87,54	75,60	91,06	100,00	88,55
15/12/2025	80,43	67,99	72,46	77,28	74,54
16/12/2025	74,25	58,03	56,83	70,26	64,84
17/12/2025	68,53	53,01	62,38	80,98	66,23
18/12/2025	71,64	73,86	96,12	99,97	85,40
19/12/2025	94,84	73,57	74,99	84,01	81,85
20/12/2025	72,23	54,91	70,79	92,34	72,57
21/12/2025	69,51	54,09	74,21	100,00	74,45
22/12/2025	74,89	53,93	71,01	87,89	71,93
Rata-rata	81,10	62,67	71,60	88,46	

Lampiran 8. Analisis Ragam Data Tinggi Tanaman

Petak Utama	Petak Anakan	Ulangan			Total Interaksi	Rata - rata
		I	II	III		
B0	P1	38,40	39,80	40,10	118,30	39,43
	P2	36,70	37,30	39,20	113,20	37,73
	P3	34,80	34,20	38,80	107,80	35,93
	Jumlah	109,90	111,30	118,10	339,30	
	Rata-rata	36,63	37,10	39,37		37,70
B1	P1	38,90	41,80	38,40	119,10	39,70
	P2	43,20	36,60	37,40	117,20	39,07
	P3	33,60	35,50	36,70	105,80	35,27
	Jumlah	115,70	113,90	112,50	342,10	
	Rata-rata	38,57	37,97	37,50		38,01
B2	P1	42,00	42,40	38,00	122,40	40,80
	P2	35,90	38,90	37,00	111,80	37,27
	P3	38,90	40,10	37,90	116,90	38,97
	Jumlah	116,80	121,40	112,90	351,10	
	Rata-rata	38,93	40,47	37,63		39,01
Jumlah		342,40	346,60	343,50	1032,50	
Rata-rata		37,70	38,01	39,01		38,24

Keterangan. B0 : 0 ppm, B1 : 50 ppm, B2 : 100 ppm, P1 : 1,25 ton/ha, P2 : 2,50 ton/ha, P3 : 3,75 ton/ha

Lampiran 8. (Lanjutan)

Petak Utama	Anak Petak			Total	Rata-rata
	P1	P2	P3		
0 ppm (B0)	118,30	113,20	107,80	339,30	113,10
50 ppm (B1)	119,10	117,20	105,80	342,10	114,03
100 ppm (B2)	122,40	111,80	116,90	351,10	117,03
Total	359,80	342,20	330,50	1.032,50	
Rata-rata	39,98	38,02	36,72		114,72

3. Perhitungan Derajat Bebas (db)

$$B \text{ (BAP)} = 3$$

$$P \text{ (NPK)} = 3$$

$$db \text{ BAP (B)} = B - 1 = 3 - 1 = 2$$

$$db \text{ Galat B} = (B - 1) \times r = (3 - 1) \times 3 = 6$$

$$db \text{ NPK (P)} = P - 1 = 3 - 1 = 2$$

$$db \text{ Interaksi (B} \times \text{P)} = (B - 1)(P - 1) = (3 - 1)(3 - 1) = 2 \times 2 = 4$$

$$db \text{ Galat P} = B(r - 1)(P - 1) = 3(3 - 1)(3 - 1) = 3 \times 2 \times 2 = 12$$

$$db \text{ Total} = BPr - 1 = 3 \times 3 \times 3 - 1 = 26$$

4. Faktor Koreksi (FK)

$$FK = \frac{Y_{\dots}^2}{B \times P \times r} = \frac{(1032,50)^2}{3 \times 3 \times 3} = 39.483,56$$

5. Perhitungan Jumlah Kuadrat Total (JK)

$$\begin{aligned} JKT &= \sum Y_{ij}^2 - FK \\ &= (38,40)^2 + (39,80)^2 + \dots + (37,90)^2 - 39.483,56 \\ &= 154,07 \end{aligned}$$

6. Jumlah Kuadrat Perlakuan BAP (B)

$$\begin{aligned} JK(B) &= \sum_i \frac{Y_{i\dots}^2}{B \times r} - FK \\ &= \frac{(339,30)^2 + (342,10)^2 + (351,10)^2}{3 \times 3} - 39.483,56 \\ &= 8,45 \end{aligned}$$

Lampiran 8. (Lanjutan)**7. Jumlah Kuadrat Galat Perlakuan BAP (B)**

$$\begin{aligned}
 \text{JK (Galat B)} &= \sum_{i,k} \frac{Y_{i,k}^2}{p} - \text{FK} - \text{JK (B)} \\
 &= \frac{(109,90)^2 + (111,30)^2 + \dots + (112,90)^2}{3} - 39.483,56 - 8,45 \\
 &= 26,61
 \end{aligned}$$

8. Jumlah Kuadrat Perlakuan NPK (P)

$$\begin{aligned}
 \text{JK (P)} &= \sum_i \frac{Y_{j \dots}^2}{p \times r} - \text{FK} \\
 &= \frac{(359,80)^2 + (342,20)^2 + (330,50)^2}{3 \times 3} - 39.483,56 \\
 &= 48,34
 \end{aligned}$$

7. Jumlah Kuadrat Interaksi

$$\begin{aligned}
 \text{JK (B} \times \text{P)} &= \sum_{i,j} \frac{Y_{ij \dots}^2}{r} - \text{FK} - \text{JK (B)} - \text{JK (P)} \\
 &= \frac{(118,30)^2 + (113,20)^2 + \dots + (116,90)^2}{3} - 39.483,56 - 8,45 - 48,34 \\
 &= 23,27
 \end{aligned}$$

8. Jumlah Kuadrat Galat Perlakuan NPK

$$\begin{aligned}
 \text{JK (Galat P)} &= \text{JKT} - \text{JK (B)} - \text{JK (Galat B)} - \text{JK (P)} - \text{JK (B} \times \text{P)} \\
 &= 154,07 - 8,45 - 26,61 - 48,34 - 23,27 \\
 &= 47,40
 \end{aligned}$$

9. Perhitungan Kuadrat Tengah Perlakuan BAP (B)

$$\begin{aligned}
 \text{KT (B)} &= \frac{\text{JK (B)}}{B-1} = \frac{7,85}{3-1} = 4,22 \\
 \text{KT (Galat B)} &= \frac{\text{JK (Galat B)}}{r(B-1)} = \frac{26,61}{3(3-1)} = 4,44
 \end{aligned}$$

10. Perhitungan Kuadrat Tengah Perlakuan NPK (P)

$$\text{KT (P)} = \frac{\text{JK (P)}}{P-1} = \frac{48,34}{3-1} = 24,17$$

Lampiran 8. (Lanjutan)

11. Perhitungan Kuadrat Tengah Interaksi

$$KT (B \times P) = \frac{JK (B \times P)}{(B-1)(P-1)} = \frac{23,27}{(3-1)(3-1)} = 5,82$$

12. Perhitungan Kuadrat Tengah Galat

$$KT (Galat P) = \frac{JK (Galat P)}{r(B-1)(P-1)} = \frac{47,40}{3(3-1)(3-1)} = 5,82$$

13. F-Hitung Perlakuan BAP (B)

$$F\text{-Hitung (B)} = \frac{KT (B)}{KT (Galat B)} = \frac{4,22}{4,44} = 0,95$$

14. F-Hitung Perlakuan NPK (P)

$$F\text{-Hitung (P)} = \frac{KT (P)}{KT (Galat P)} = \frac{24,17}{5,82} = 6,12$$

15. F-Hitung Perlakuan Interaksi

$$F\text{-Hitung (B} \times P) = \frac{KT (B \times P)}{KT (Galat P)} = \frac{5,82}{3,95} = 1,47$$

Tabel ANOVA

SK	DB	JK	KT	Fhit	F tab 0.05
B	2	8,45	4,22	0,95 ^{tn}	5,14
Galat B	6	26,61111	4,44		
P	2	48,34	24,17	6,12*	3,89
BxP	4	23,27	5,82	1,47 ^{tn}	3,26
Galat	12	47,40	3,95		
Total	26	154,07			

Keterangan : * = signifikan, tn = tidak signifikan

16. Koefisien Keragaman (KK)

$$KK (B) = \frac{\sqrt{KT (Galat B)}}{\bar{X}} \times 100\% = \frac{4,44}{38,24} \times 100\% = 5,51\%$$

$$KK (P) = \frac{\sqrt{KT (Galat P)}}{\bar{X}} \times 100\% = \frac{3,95}{38,24} \times 100\% = 5,20\%$$

Lampiran 8. (Lanjutan)**17. Analisis Uji Lanjut BNJ (0,05) Perlakuan NPK Terhadap Tinggi Tanaman**

$$Sd = \sqrt{\frac{KT \text{ (Galat J)}}{r \times P}} = \sqrt{\frac{3,95}{3 \times 3}} = 0,66$$

$$HSD_{(0,05)} = q(0,05; 2; 12) \\ = 3,08$$

$$BNJ \text{ hitung} = \text{Nilai sd} \times \text{Tabel Tukey} \\ = 0,66 \times 3,08 \\ = 2,04$$

Tabel Matriks Nilai Tengah

Perlakuan	Nilai tengah	Selisih			Notasi
		P1	P2	P3	
		39,98	38,02	36,72	
P1	39,98	0,00			a
P2	38,02	1,96	0,00		ab
P3	36,72	3,26	1,30	0,00	b

Keterangan : * : signifikan ($|\mu_1 - \mu_2| > HSD_{0,05}$), tn : ($|\mu_1 - \mu_2| < HSD_{0,05}$)

Lampiran 9. Analisis Ragam Data Diameter pangkal tajuk anakan tertinggi

Petak Utama	Petak Anakan	Ulangan			Total Interaksi	Rata - rata
		I	II	III		
B0	P1	3,83	3,37	3,57	10,76	3,59
	P2	3,60	3,37	4,27	11,23	3,74
	P3	3,70	3,67	4,20	11,57	3,86
	Jumlah	11,13	10,40	12,03	33,56	
	Rata-rata	3,71	3,47	4,01		3,73
B1	P1	3,37	3,83	3,27	10,47	3,49
	P2	3,87	3,63	3,97	11,47	3,82
	P3	3,60	3,50	3,60	10,70	3,57
	Jumlah	10,48	10,97	10,83	32,64	
	Rata-rata	3,61	3,66	3,61		3,63
B2	P1	3,47	3,77	4,10	11,34	3,78
	P2	3,03	3,60	3,43	10,06	3,35
	P3	3,40	3,93	4,47	11,80	3,93
	Jumlah	9,90	11,30	12,00	33,20	
	Rata-rata	3,30	3,77	4,00		3,69
Jumlah		31,87	32,67	34,87	99,40	
Rata-rata		3,73	3,63	3,69		3,68

Keterangan. B0 : 0 ppm, B1 : 50 ppm, B2 : 100 ppm, P1 : 1,25 ton/ha, P2 : 2,50 ton/ha, P3 : 3,75 ton/ha

Lampiran 9. (Lanjutan)

Petak Utama	Anak Petak			Total	Rata-rata
	P1	P2	P3		
0 ppm (B0)	10,76	11,23	11,57	33,56	11,19
50 ppm (B1)	10,47	11,47	10,70	32,64	10,88
100 ppm (B2)	11,34	10,06	11,80	33,20	11,07
Total	32,57	32,77	34,07	33,13	
Rata-rata	3,62	3,64	3,79		11,04

1. Perhitungan Derajat Bebas (db)

$$B \text{ (BAP)} = 3$$

$$P \text{ (NPK)} = 3$$

$$db \text{ BAP (B)} = B - 1 = 3 - 1 = 2$$

$$db \text{ Galat B} = (B - 1) \times r = (3 - 1) \times 3 = 6$$

$$db \text{ NPK (P)} = P - 1 = 3 - 1 = 2$$

$$db \text{ Interaksi (B} \times \text{P)} = (B - 1)(P - 1) = (3 - 1)(3 - 1) = 2 \times 2 = 4$$

$$db \text{ Galat P} = B(r - 1)(P - 1) = 3(3 - 1)(3 - 1) = 3 \times 2 \times 2 = 12$$

$$db \text{ Total} = BPr - 1 = 3 \times 3 \times 3 - 1 = 26$$

2. Faktor Koreksi (FK)

$$FK = \frac{Y_{\dots}^2}{B \times P \times r} = \frac{(99,40)^2}{3 \times 3 \times 3} = 365,96$$

3. Perhitungan Jumlah Kuadrat Total (JK)

$$\begin{aligned} JKT &= \sum Y_{ij}^2 - FK \\ &= (3,83)^2 + (3,37)^2 + \dots + (4,47)^2 - 365,96 \\ &= 154,07 \end{aligned}$$

4. Jumlah Kuadrat Perlakuan BAP (B)

$$\begin{aligned} JK(B) &= \sum_i \frac{Y_{i\dots}^2}{B \times r} - FK \\ &= \frac{(33,56)^2 + (32,64)^2 + (33,20)^2}{3 \times 3} - 365,96 \\ &= 0,05 \end{aligned}$$

Lampiran 9. (Lanjutan)

5. Jumlah Kuadrat Galat Perlakuan BAP (B)

$$\begin{aligned}
 \text{JK (Galat B)} &= \sum_{i,k} \frac{Y_{i,k}^2}{p} - \text{FK} - \text{JK (B)} \\
 &= \frac{(11,13)^2 + (10,40)^2 + \dots + (12,00)^2}{3} - 365,96 - 0,05 \\
 &= 1,21
 \end{aligned}$$

6. Jumlah Kuadrat Perlakuan NPK (P)

$$\begin{aligned}
 \text{JK (P)} &= \sum_i \frac{Y_{j \dots}^2}{p \times r} - \text{FK} \\
 &= \frac{(32,57)^2 + (32,77)^2 + (34,07)^2}{3 \times 3} - 365,96 \\
 &= 0,15
 \end{aligned}$$

7. Jumlah Kuadrat Interaksi

$$\begin{aligned}
 \text{JK (B} \times \text{P)} &= \sum_{i,j} \frac{Y_{ij \dots}^2}{r} - \text{FK} - \text{JK (B)} - \text{JK (P)} \\
 &= \frac{(10,76)^2 + (11,23)^2 + \dots + (11,80)^2}{3} - 365,96 - 0,05 - 0,15 \\
 &= 0,68
 \end{aligned}$$

8. Jumlah Kuadrat Galat Perlakuan NPK

$$\begin{aligned}
 \text{JK (Galat P)} &= \text{JKT} - \text{JK (B)} - \text{JK (Galat B)} - \text{JK (P)} - \text{JK (B} \times \text{P)} \\
 &= 2,79 - 0,05 - 1,21 - 0,15 - 0,68 \\
 &= 0,70
 \end{aligned}$$

9. Perhitungan Kuadrat Tengah Perlakuan BAP (B)

$$\begin{aligned}
 \text{KT (B)} &= \frac{\text{JK (B)}}{B-1} = \frac{0,05}{3-1} = 0,02 \\
 \text{KT (Galat B)} &= \frac{\text{JK (Galat B)}}{r(B-1)} = \frac{1,21}{3(3-1)} = 0,20
 \end{aligned}$$

10. Perhitungan Kuadrat Tengah Perlakuan NPK (P)

$$\text{KT (P)} = \frac{\text{JK (P)}}{P-1} = \frac{0,15}{3-1} = 0,07$$

Lampiran 9. (Lanjutan)**11. Perhitungan Kuadrat Tengah Interaksi**

$$KT (B \times P) = \frac{JK (B \times P)}{(B-1)(P-1)} = \frac{0,68}{(3-1)(3-1)} = 0,17$$

12. Perhitungan Kuadrat Tengah Galat

$$KT (Galat P) = \frac{JK (Galat P)}{r(B-1)(P-1)} = \frac{0,68}{3(3-1)(3-1)} = 0,17$$

13. F-Hitung Perlakuan BAP (B)

$$F\text{-Hitung (B)} = \frac{KT (B)}{KT (Galat B)} = \frac{0,02}{0,20} = 0,12$$

14. F-Hitung Perlakuan NPK (P)

$$F\text{-Hitung (P)} = \frac{KT (P)}{KT (Galat P)} = \frac{0,07}{0,06} = 1,26$$

15. F-Hitung Perlakuan Interaksi

$$F\text{-Hitung (B} \times P) = \frac{KT (B \times P)}{KT (Galat P)} = \frac{0,17}{0,06} = 2,94$$

Tabel ANOVA

SK	DB	JK	KT	Fhit	F tab 0.05
B	2	0,05	0,02	0,12 ^{tn}	5,14
Galat B	6	1,212284	0,20		
P	2	0,15	0,07	1,26 ^{tn}	3,89
BxP	4	0,68	0,17	2,94 ^{tn}	3,26
Galat	12	0,70	0,06		
Total	26	2,79			

Keterangan : * = signifikan, tn = tidak signifikan

16. Koefisien Keragaman (KK)

$$KK (B) = \frac{\sqrt{KT (Galat B)}}{\bar{X}} \times 100\% = \frac{\sqrt{0,20}}{3,68} \times 100\% = 12,21\%$$

$$KK (P) = \frac{\sqrt{KT (Galat P)}}{\bar{X}} \times 100\% = \frac{\sqrt{0,06}}{3,68} \times 100\% = 6,55\%$$

Lampiran 10. Analisis Ragam Data Jumlah Daun

Petak Utama	Petak Anakan	Ulangan			Total Interaksi	Rata - rata
		I	II	III		
B0	P1	18,00	21,30	23,70	63,00	21,00
	P2	19,70	22,00	21,00	62,70	20,90
	P3	16,00	17,70	21,30	55,00	18,33
	Jumlah	53,70	61,00	66,00	180,70	
	Rata-rata	17,90	20,33	22,00		20,08
B1	P1	23,70	25,00	15,70	64,40	21,47
	P2	26,30	22,30	15,30	63,90	21,30
	P3	21,00	18,80	16,70	56,50	18,83
	Jumlah	71,00	66,10	47,70	184,80	
	Rata-rata	23,67	22,03	15,90		20,53
B2	P1	18,00	23,00	15,30	56,30	18,77
	P2	18,70	14,00	21,30	54,00	18,00
	P3	17,30	17,70	12,70	47,70	15,90
	Jumlah	54,00	54,70	49,30	158,00	
	Rata-rata	18,00	18,23	16,43		17,56
Jumlah		178,70	181,80	163,00	523,50	
Rata-rata		20,08	20,53	17,56		19,39

Keterangan. B0 : 0 ppm, B1 : 50 ppm, B2 : 100 ppm, P1 : 1,25 ton/ha, P2 : 2,50 ton/ha, P3 : 3,75 ton/ha

Lampiran 10. (Lanjutan)

Petak Utama	Anak Petak			Total	Rata-rata
	P1	P2	P3		
0 ppm (B0)	63,00	62,70	55,00	180,70	60,23
50 ppm (B1)	64,40	63,90	56,50	184,80	61,60
100 ppm (B2)	56,30	54,00	47,70	158,00	52,67
Total	183,70	180,60	159,20	523,50	
Rata-rata	20,41	20,07	17,69		58,17

1. Perhitungan Derajat Bebas (db)

$$B \text{ (BAP)} = 3$$

$$P \text{ (NPK)} = 3$$

$$db \text{ BAP (B)} = B - 1 = 3 - 1 = 2$$

$$db \text{ Galat B} = (B - 1) \times r = (3 - 1) \times 3 = 6$$

$$db \text{ NPK (P)} = P - 1 = 3 - 1 = 2$$

$$db \text{ Interaksi (B} \times \text{P)} = (B - 1)(P - 1) = (3 - 1)(3 - 1) = 2 \times 2 = 4$$

$$db \text{ Galat P} = B(r - 1)(P - 1) = 3(3 - 1)(3 - 1) = 3 \times 2 \times 2 = 12$$

$$db \text{ Total} = BPr - 1 = 3 \times 3 \times 3 - 1 = 26$$

2. Faktor Koreksi (FK)

$$FK = \frac{Y_{\dots}^2}{B \times P \times r} = \frac{(523,50)^2}{3 \times 3 \times 3} = 10.150,08$$

3. Perhitungan Jumlah Kuadrat Total (JK)

$$\begin{aligned} JKT &= \sum Y_{ij}^2 - FK \\ &= (18,00)^2 + (21,30)^2 + \dots + (12,70)^2 - 10.150,08 \\ &= 315,29 \end{aligned}$$

4. Jumlah Kuadrat Perlakuan BAP (B)

$$\begin{aligned} JK(B) &= \sum_i \frac{Y_{i\dots}^2}{B \times r} - FK \\ &= \frac{(180,70)^2 + (184,80)^2 + (158,00)^2}{3 \times 3} - 10.150,08 \\ &= 46,31 \end{aligned}$$

Lampiran 10. (Lanjutan)

5. Jumlah Kuadrat Galat Perlakuan BAP (B)

$$\begin{aligned}
 \text{JK (Galat B)} &= \sum_{i,k} \frac{Y_{i,k}^2}{p} - \text{FK} - \text{JK (B)} \\
 &= \frac{(53,70)^2 + (61,00)^2 + \dots + (49,30)^2}{3} - 10.150,08 - 46,31 \\
 &= 131,86
 \end{aligned}$$

6. Jumlah Kuadrat Perlakuan NPK (P)

$$\begin{aligned}
 \text{JK (P)} &= \sum_i \frac{Y_{j \dots}^2}{p \times r} - \text{FK} \\
 &= \frac{(183,70)^2 + (180,60)^2 + (159,20)^2}{3 \times 3} - 10.150,08 \\
 &= 39,55
 \end{aligned}$$

7. Jumlah Kuadrat Interaksi

$$\begin{aligned}
 \text{JK (B} \times \text{P)} &= \sum_{i,j} \frac{Y_{ij \dots}^2}{r} - \text{FK} - \text{JK (B)} - \text{JK (P)} \\
 &= \frac{(63,00)^2 + (62,70)^2 + \dots + (42,70)^2}{3} - 10.150,08 - 46,31 - 39,55 \\
 &= 0,68
 \end{aligned}$$

8. Jumlah Kuadrat Galat Perlakuan NPK

$$\begin{aligned}
 \text{JK (Galat P)} &= \text{JKT} - \text{JK (B)} - \text{JK (Galat B)} - \text{JK (P)} - \text{JK (B} \times \text{P)} \\
 &= 315,29 - 46,31 - 131,86 - 39,55 - 0,42 \\
 &= 97,14
 \end{aligned}$$

9. Perhitungan Kuadrat Tengah Perlakuan BAP (B)

$$\begin{aligned}
 \text{KT (B)} &= \frac{\text{JK (B)}}{B-1} = \frac{46,31}{3-1} = 23,15 \\
 \text{KT (Galat B)} &= \frac{\text{JK (Galat B)}}{r(B-1)} = \frac{131,86}{3(3-1)} = 21,98
 \end{aligned}$$

10. Perhitungan Kuadrat Tengah Perlakuan NPK (P)

$$\text{KT (P)} = \frac{\text{JK (P)}}{P-1} = \frac{39,55}{3-1} = 19,77$$

Lampiran 10. (Lanjutan)**11. Perhitungan Kuadrat Tengah Interaksi**

$$KT (B \times P) = \frac{JK (B \times P)}{(B-1)(P-1)} = \frac{0,41}{(3-1)(3-1)} = 0,11$$

12. Perhitungan Kuadrat Tengah Galat

$$KT (Galat P) = \frac{JK (Galat P)}{r(B-1)(P-1)} = \frac{97,14}{3(3-1)(3-1)} = 8,10$$

13. F-Hitung Perlakuan BAP (B)

$$F\text{-Hitung (B)} = \frac{KT (B)}{KT (Galat B)} = \frac{23,15}{21,98} = 1,05$$

14. F-Hitung Perlakuan NPK (P)

$$F\text{-Hitung (P)} = \frac{KT (P)}{KT (Galat P)} = \frac{19,77}{8,10} = 2,44$$

15. F-Hitung Perlakuan Interaksi

$$F\text{-Hitung (B} \times P) = \frac{KT (B \times P)}{KT (Galat P)} = \frac{0,11}{8,10} = 0,01$$

Tabel ANOVA

SK	DB	JK	KT	Fhit	F tab 0.05
B	2	46,31	23,15	1,05 ^{tn}	5,14
Galat B	6	131,8644	21,98		
P	2	39,55	19,77	2,44 ^{tn}	3,89
BxP	4	0,42	0,11	0,01 ^{tn}	3,26
Galat	12	97,14	8,10		
Total	26	315,29			

Keterangan : * = signifikan, tn = tidak signifikan

16. Koefisien Keragaman (KK)

$$KK (B) = \frac{\sqrt{KT (Galat B)}}{\bar{X}} \times 100\% = \frac{\sqrt{21,98}}{19,39} \times 100\% = 24,18\%$$

$$KK (P) = \frac{\sqrt{KT (Galat P)}}{\bar{X}} \times 100\% = \frac{\sqrt{8,10}}{19,39} \times 100\% = 14,67\%$$

Lampiran 11. Transformasi ($\sqrt{\text{Data}}$) Jumlah Daun

Petak Utama	Petak Anakan	Ulangan			Total Interaksi	Rata - rata
		I	II	III		
B0	P1	4,24	4,62	4,87	13,73	4,58
	P2	4,44	4,69	4,58	13,71	4,57
	P3	4,00	4,21	4,62	12,82	4,27
	Jumlah	12,68	13,51	14,07	40,26	
	Rata-rata	4,23	4,50	4,69		4,47
B1	P1	4,87	5,00	3,96	13,83	4,61
	P2	5,13	4,72	3,91	13,76	4,59
	P3	4,58	4,34	4,09	13,01	4,34
	Jumlah	14,58	14,06	11,96	40,60	
	Rata-rata	4,86	4,69	3,99		4,51
B2	P1	4,24	4,80	3,91	12,95	4,32
	P2	4,32	3,74	4,62	12,68	4,23
	P3	4,16	4,21	3,56	11,93	3,98
	Jumlah	12,73	12,74	12,09	37,56	
	Rata-rata	4,24	4,25	4,03		4,17
Jumlah		39,99	40,32	38,12	118,42	
Rata-rata		4,47	4,51	4,17		4,39

Keterangan. B0 : 0 ppm, B1 : 50 ppm, B2 : 100 ppm, P1 : 1,25 ton/ha, P2 : 2,50 ton/ha, P3 : 3,75 ton/ha

Lampiran 11. (Lanjutan)

Petak Utama	Anak Petak			Total	Rata-rata
	P1	P2	P3		
0 ppm (B0)	13,73	13,71	12,82	40,26	13,42
50 ppm (B1)	13,83	13,76	13,01	40,60	13,53
100 ppm (B2)	12,95	12,68	11,93	37,56	12,52
Total	40,51	40,15	37,76	118,42	
Rata-rata	4,50	4,46	4,20		13,16

1. Perhitungan Derajat Bebas (db)

$$B \text{ (BAP)} = 3$$

$$P \text{ (NPK)} = 3$$

$$db \text{ BAP (B)} = B - 1 = 3 - 1 = 2$$

$$db \text{ Galat B} = (B - 1) \times r = (3 - 1) \times 3 = 6$$

$$db \text{ NPK (P)} = P - 1 = 3 - 1 = 2$$

$$db \text{ Interaksi (B} \times \text{P)} = (B - 1)(P - 1) = (3 - 1)(3 - 1) = 2 \times 2 = 4$$

$$db \text{ Galat P} = B(r - 1)(P - 1) = 3(3 - 1)(3 - 1) = 3 \times 2 \times 2 = 12$$

$$db \text{ Total} = BPr - 1 = 3 \times 3 \times 3 - 1 = 26$$

2. Faktor Koreksi (FK)

$$FK = \frac{Y_{\dots}^2}{B \times P \times r} = \frac{(118,42)^2}{3 \times 3 \times 3} = 519,37$$

3. Perhitungan Jumlah Kuadrat Total (JK)

$$\begin{aligned} JKT &= \sum Y_{ij}^2 - FK \\ &= (4,24)^2 + (4,62)^2 + \dots + (3,56)^2 - 519,37 \\ &= 315,29 \end{aligned}$$

4. Jumlah Kuadrat Perlakuan BAP (B)

$$\begin{aligned} JK(B) &= \sum_i \frac{Y_{i\dots}^2}{B \times r} - FK \\ &= \frac{(40,26)^2 + (40,60)^2 + (37,56)^2}{3 \times 3} - 519,37 \\ &= 0,62 \end{aligned}$$

Lampiran 11. (Lanjutan)**5. Jumlah Kuadrat Galat Perlakuan BAP (B)**

$$\begin{aligned}
 \text{JK (Galat B)} &= \sum_{i,k} \frac{Y_{i,k}^2}{p} - \text{FK} - \text{JK (B)} \\
 &= \frac{(12,68)^2 + (13,51)^2 + \dots + (12,09)^2}{3} - 519,37 - 0,62 \\
 &= 1,70
 \end{aligned}$$

6. Jumlah Kuadrat Perlakuan NPK (P)

$$\begin{aligned}
 \text{JK (P)} &= \sum_i \frac{Y_{j \dots}^2}{p \times r} - \text{FK} \\
 &= \frac{(40,51)^2 + (40,15)^2 + (37,76)^2}{3 \times 3} - 519,37 \\
 &= 0,50
 \end{aligned}$$

7. Jumlah Kuadrat Interaksi

$$\begin{aligned}
 \text{JK (B} \times \text{P)} &= \sum_{i,j} \frac{Y_{ij \dots}^2}{r} - \text{FK} - \text{JK (B)} - \text{JK (P)} \\
 &= \frac{(13,73)^2 + (13,71)^2 + \dots + (11,93)^2}{3} - 519,37 - 0,62 - 0,50 \\
 &= 0,01
 \end{aligned}$$

8. Jumlah Kuadrat Galat Perlakuan NPK

$$\begin{aligned}
 \text{JK (Galat P)} &= \text{JKT} - \text{JK (B)} - \text{JK (Galat B)} - \text{JK (P)} - \text{JK (B} \times \text{P)} \\
 &= 4,13 - 0,62 - 1,70 - 0,50 - 0,01 \\
 &= 97,14
 \end{aligned}$$

9. Perhitungan Kuadrat Tengah Perlakuan BAP (B)

$$\begin{aligned}
 \text{KT (B)} &= \frac{\text{JK (B)}}{B-1} = \frac{0,62}{3-1} = 0,31 \\
 \text{KT (Galat B)} &= \frac{\text{JK (Galat B)}}{r(B-1)} = \frac{1,70}{3(3-1)} = 0,28
 \end{aligned}$$

10. Perhitungan Kuadrat Tengah Perlakuan NPK (P)

$$\text{KT (P)} = \frac{\text{JK (P)}}{P-1} = \frac{0,50}{3-1} = 0,25$$

Lampiran 11. (Lanjutan)**11. Perhitungan Kuadrat Tengah Interaksi**

$$KT (B \times P) = \frac{JK (B \times P)}{(B-1)(P-1)} = \frac{0,01}{(3-1)(3-1)} = 0,002$$

12. Perhitungan Kuadrat Tengah Galat

$$KT (Galat P) = \frac{JK (Galat P)}{r(B-1)(P-1)} = \frac{1,31}{3(3-1)(3-1)} = 0,11$$

13. F-Hitung Perlakuan BAP (B)

$$F\text{-Hitung (B)} = \frac{KT (B)}{KT (Galat B)} = \frac{0,31}{21,98} = 1,09$$

14. F-Hitung Perlakuan NPK (P)

$$F\text{-Hitung (P)} = \frac{KT (P)}{KT (Galat P)} = \frac{0,25}{8,10} = 2,28$$

15. F-Hitung Perlakuan Interaksi

$$F\text{-Hitung (B} \times P) = \frac{KT (B \times P)}{KT (Galat P)} = \frac{0,002}{8,10} = 0,02$$

Tabel ANOVA

SK	DB	JK	KT	Fhit	F tab 0.05
B	2	0,62	0,31	1,09 ^{tn}	5,14
Galat B	6	1,70	0,28		
P	2	0,50	0,25	2,28 ^{tn}	3,89
BxP	4	0,01	0,002	0,02 ^{tn}	3,26
Galat	12	1,31	0,11		
Total	26	4,13			

Keterangan : * = signifikan, tn = tidak signifikan

16. Koefisien Keragaman (KK)

$$KK (B) = \frac{\sqrt{KT (Galat B)}}{\bar{X}} \times 100\% = \frac{\sqrt{0,28}}{4,39} \times 100\% = 12,13\%$$

$$KK (P) = \frac{\sqrt{KT (Galat P)}}{\bar{X}} \times 100\% = \frac{\sqrt{0,11}}{4,39} \times 100\% = 7,53\%$$

Lampiran 12. Analisis Ragam Data Jumlah Anakan

Petak Utama	Petak Anakan	Ulangan			Total Interaksi	Rata - rata
		I	II	III		
B0	P1	5,00	5,70	7,00	17,70	5,90
	P2	5,30	5,70	6,00	17,00	5,67
	P3	6,00	5,30	6,70	18,00	6,00
	Jumlah	16,30	16,70	19,70	52,70	
	Rata-rata	5,43	5,57	6,57		5,86
B1	P1	7,00	6,30	5,30	18,60	6,20
	P2	5,70	5,70	4,70	16,10	5,37
	P3	6,00	4,80	4,30	15,10	5,03
	Jumlah	18,70	16,80	14,30	49,80	
	Rata-rata	6,23	5,60	4,77		5,53
B2	P1	4,70	6,00	5,00	15,70	5,23
	P2	5,00	5,30	5,70	16,00	5,33
	P3	3,70	4,70	4,00	12,40	4,13
	Jumlah	13,40	16,00	14,70	44,10	
	Rata-rata	4,47	5,33	4,90		4,90
Jumlah		48,40	49,50	48,70	146,60	
Rata-rata		5,86	5,53	4,90		5,43

Keterangan. B0 : 0 ppm, B1 : 50 ppm, B2 : 100 ppm, P1 : 1,25 ton/ha, P2 : 2,50 ton/ha, P3 : 3,75 ton/ha

Lampiran 12. (Lanjutan)

Petak Utama	Anak Petak			Total	Rata-rata
	P1	P2	P3		
0 ppm (B0)	17,70	17,00	18,00	52,70	17,57
50 ppm (B1)	18,60	16,10	15,10	49,80	16,60
100 ppm (B2)	15,70	16,00	12,40	44,10	14,70
Total	52,00	49,10	45,50	146,60	
Rata-rata	5,78	5,46	5,06		16,29

1. Perhitungan Derajat Bebas (db)

$$B \text{ (BAP)} = 3$$

$$P \text{ (NPK)} = 3$$

$$db \text{ BAP (B)} = B - 1 = 3 - 1 = 2$$

$$db \text{ Galat B} = (B - 1) \times r = (3 - 1) \times 3 = 6$$

$$db \text{ NPK (P)} = P - 1 = 3 - 1 = 2$$

$$db \text{ Interaksi (B} \times \text{P)} = (B - 1)(P - 1) = (3 - 1)(3 - 1) = 2 \times 2 = 4$$

$$db \text{ Galat P} = B(r - 1)(P - 1) = 3(3 - 1)(3 - 1) = 3 \times 2 \times 2 = 12$$

$$db \text{ Total} = BPr - 1 = 3 \times 3 \times 3 - 1 = 26$$

2. Faktor Koreksi (FK)

$$FK = \frac{Y_{\dots}^2}{B \times P \times r} = \frac{(146,60)^2}{3 \times 3 \times 3} = 795,98$$

3. Perhitungan Jumlah Kuadrat Total (JK)

$$\begin{aligned} JKT &= \sum Y_{ij}^2 - FK \\ &= (5,00)^2 + (5,70)^2 + \dots + (4,00)^2 - 795,98 \\ &= 17,90 \end{aligned}$$

4. Jumlah Kuadrat Perlakuan BAP (B)

$$\begin{aligned} JK(B) &= \sum_i \frac{Y_{i\dots}^2}{B \times r} - FK \\ &= \frac{(52,70)^2 + (49,80)^2 + (44,10)^2}{3 \times 3} - 795,98 \\ &= 4,25 \end{aligned}$$

Lampiran 12. (Lanjutan)**5. Jumlah Kuadrat Galat Perlakuan BAP (B)**

$$\begin{aligned}
 \text{JK (Galat B)} &= \sum_{i,k} \frac{Y_{i,k}^2}{p} - \text{FK} - \text{JK (B)} \\
 &= \frac{(16,30)^2 + (16,70)^2 + \dots + (14,70)^2}{3} - 795,98 - 4,25 \\
 &= 6,68
 \end{aligned}$$

6. Jumlah Kuadrat Perlakuan NPK (P)

$$\begin{aligned}
 \text{JK (P)} &= \sum_i \frac{Y_{j \dots}^2}{p \times r} - \text{FK} \\
 &= \frac{(52,00)^2 + (49,10)^2 + (45,50)^2}{3 \times 3} - 795,98 \\
 &= 2,36
 \end{aligned}$$

7. Jumlah Kuadrat Interaksi

$$\begin{aligned}
 \text{JK (B} \times \text{P)} &= \sum_{i,j} \frac{Y_{ij \dots}^2}{r} - \text{FK} - \text{JK (B)} - \text{JK (P)} \\
 &= \frac{(17,70)^2 + (17,00)^2 + \dots + (12,40)^2}{3} - 795,98 - 4,25 - 2,36 = \\
 &2,65
 \end{aligned}$$

8. Jumlah Kuadrat Galat Perlakuan NPK

$$\begin{aligned}
 \text{JK (Galat P)} &= \text{JKT} - \text{JK (B)} - \text{JK (Galat B)} - \text{JK (P)} - \text{JK (B} \times \text{P)} \\
 &= 17,90 - 4,25 - 6,68 - 2,36 - 2,65 \\
 &= 1,96
 \end{aligned}$$

9. Perhitungan Kuadrat Tengah Perlakuan BAP (B)

$$\begin{aligned}
 \text{KT (B)} &= \frac{\text{JK (B)}}{B-1} = \frac{4,25}{3-1} = 2,13 \\
 \text{KT (Galat B)} &= \frac{\text{JK (Galat B)}}{r(B-1)} = \frac{6,68}{3(3-1)} = 1,11
 \end{aligned}$$

10. Perhitungan Kuadrat Tengah Perlakuan NPK (P)

$$\text{KT (P)} = \frac{\text{JK (P)}}{P-1} = \frac{2,36}{3-1} = 1,18$$

Lampiran 12. (Lanjutan)**11. Perhitungan Kuadrat Tengah Interaksi**

$$KT (B \times P) = \frac{JK (B \times P)}{(B-1)(P-1)} = \frac{2,65}{(3-1)(3-1)} = 0,66$$

12. Perhitungan Kuadrat Tengah Galat

$$KT (Galat P) = \frac{JK (Galat P)}{r(B-1)(P-1)} = \frac{1,96}{3(3-1)(3-1)} = 0,16$$

13. F-Hitung Perlakuan BAP (B)

$$F\text{-Hitung (B)} = \frac{KT (B)}{KT (Galat B)} = \frac{2,13}{1,11} = 1,91$$

14. F-Hitung Perlakuan NPK (P)

$$F\text{-Hitung (P)} = \frac{KT (P)}{KT (Galat P)} = \frac{1,18}{0,16} = 7,20$$

15. F-Hitung Perlakuan Interaksi

$$F\text{-Hitung (B} \times P) = \frac{KT (B \times P)}{KT (Galat P)} = \frac{0,66}{0,16} = 4,04$$

Tabel ANOVA

SK	DB	JK	KT	Fhit	F tab 0.05
B	2	4,25	2,13	1,91 ^{tn}	5,14
Galat B	6	6,68	1,11		
P	2	2,36	1,18	7,20*	3,89
BxP	4	2,65	0,66	4,04*	3,26
Galat	12	1,96	0,16		
Total	26	17,90			

Keterangan : * = signifikan, tn = tidak signifikan

16. Koefisien Keragaman (KK)

$$KK (B) = \frac{\sqrt{KT (Galat B)}}{\bar{X}} \times 100\% = \frac{\sqrt{1,11}}{5,43} \times 100\% = 19,43\%$$

$$KK (P) = \frac{\sqrt{KT (Galat P)}}{\bar{X}} \times 100\% = \frac{\sqrt{0,16}}{5,43} \times 100\% = 25,81\%$$

Lampiran 12. (Lanjutan)**17. Analisis Uji Lanjut BNJ (0,05) Perlakuan NPK Terhadap Jumlah Anakan**

$$Sd = \sqrt{\frac{KT \text{ (Galat P)}}{r \times P}} = \sqrt{\frac{0,16}{3 \times 3}} = 0,13$$

$$HSD_{(0,05)} = q(0,05 ; 2 ; 12) \\ = 4,20$$

$$BNJ \text{ hitung} = \text{Nilai sd} \times \text{Tabel Tukey} \\ = 0,13 \times 4,20 \\ = 0,57$$

Tabel Matriks Nilai Tengah

Perlakuan	Nilai tengah	Selisih			Notasi
		P1	P2	P3	
		5,78	5,46	5,06	
P1	5,78	0,00			a
P2	5,46	0,32	0,00		ab
P3	5,06	0,72	0,40	0,00	b

Keterangan : * : signifikan ($|\mu_1 - \mu_2| > HSD_{0,05}$), tn : ($|\mu_1 - \mu_2| < HSD_{0,05}$)

18. Analisis Uji Lanjut BNJ (0,05) Interaksi Perlakuan BAP (B) dan NPK (P) Terhadap Jumlah Anakan

$$Sd = \sqrt{\frac{KTG}{r}} = \sqrt{\frac{0,16}{3}} = 0,23$$

$$HSD_{(0,05)} = q(0,05 ; 2 ; 12) \\ = 4,20$$

$$BNJ \text{ hitung} = \text{Nilai sd} \times \text{Tabel Tukey} \\ = 0,23 \times 4,20 \\ = 0,98$$

Lampiran 12. (Lanjutan)

Perlakuan	Nilai Tengah	B1P1 6,20	B0P3 6,00	B0P1 5,90	B0P2 5,67	B1P2 5,37	B2P2 5,33	B2P1 5,23	B1P3 5,03	B2P3 4,13	Notasi
B1P1	6,20	0,00									a
B0P3	6,00	0,20	0,00								ab
B0P1	5,90	0,30	0,10	0,00							ab
B0P2	5,67	0,53	0,33	0,23	0,00						ab
B1P2	5,37	0,83	0,63	0,53	0,30	0,00					ab
B2P2	5,33	0,87	0,67	0,57	0,34	0,04	0,00				ab
B2P1	5,23	0,97	0,77	0,67	0,44	0,14	0,10	0,00			ab
B1P3	5,03	1,17	0,97	0,87	0,64	0,34	0,30	0,20	0,00		bc
B2P3	4,13	2,07	1,87	1,77	1,54	1,24	1,20	1,10	0,90	0,00	c

Lampiran 13. Transformasi ($\sqrt{\text{Data}}$) Jumlah Anakan

Petak Utama	Petak Anakan	Ulangan			Total Interaksi	Rata - rata
		I	II	III		
B0	P1	2,24	2,39	2,65	7,27	2,42
	P2	2,30	2,39	2,45	7,14	2,38
	P3	2,45	2,30	2,59	7,34	2,45
	Jumlah	6,99	7,08	7,68	21,75	
	Rata-rata	2,33	2,36	2,56		2,42
B1	P1	2,65	2,51	2,30	7,46	2,49
	P2	2,39	2,39	2,17	6,94	2,31
	P3	2,45	2,19	2,07	6,71	2,24
	Jumlah	7,48	7,09	6,54	21,11	
	Rata-rata	2,49	2,36	2,18		2,35
B2	P1	2,17	2,45	2,24	6,85	2,28
	P2	2,24	2,30	2,39	6,93	2,31
	P3	1,92	2,17	2,00	6,09	2,03
	Jumlah	6,33	6,92	6,62	19,87	
	Rata-rata	2,11	2,31	2,21		2,21
Jumlah		20,80	21,09	20,85	62,73	
Rata-rata		2,42	2,35	2,21		2,32

Keterangan. B0 : 0 ppm, B1 : 50 ppm, B2 : 100 ppm, P1 : 1,25 ton/ha, P2 : 2,50 ton/ha, P3 : 3,75 ton/ha

Lampiran 13. (Lanjutan)

Petak Utama	Anak Petak			Total	Rata-rata
	P1	P2	P3		
0 ppm (B0)	7,27	7,14	7,34	21,75	7,25
50 ppm (B1)	7,46	6,94	6,71	21,11	7,04
100 ppm (B2)	6,85	6,93	6,09	19,87	6,62
Total	21,58	21,01	20,15	62,73	
Rata-rata	2,40	2,33	2,24		6,97

1. Perhitungan Derajat Bebas (db)

$$B \text{ (BAP)} = 3$$

$$P \text{ (NPK)} = 3$$

$$db \text{ BAP (B)} = B - 1 = 3 - 1 = 2$$

$$db \text{ Galat B} = (B - 1) \times r = (3 - 1) \times 3 = 6$$

$$db \text{ NPK (P)} = P - 1 = 3 - 1 = 2$$

$$db \text{ Interaksi (B} \times \text{P)} = (B - 1)(P - 1) = (3 - 1)(3 - 1) = 2 \times 2 = 4$$

$$db \text{ Galat P} = B(r - 1)(P - 1) = 3(3 - 1)(3 - 1) = 3 \times 2 \times 2 = 12$$

$$db \text{ Total} = BPr - 1 = 3 \times 3 \times 3 - 1 = 26$$

2. Faktor Koreksi (FK)

$$FK = \frac{Y_{\dots}^2}{B \times P \times r} = \frac{(62,73)^2}{3 \times 3 \times 3} = 145,76$$

3. Perhitungan Jumlah Kuadrat Total (JK)

$$\begin{aligned} JKT &= \sum Y_{ij}^2 - FK \\ &= (2,24)^2 + (2,39)^2 + \dots + (2,00)^2 - 145,76 \\ &= 0,84 \end{aligned}$$

4. Jumlah Kuadrat Perlakuan BAP (B)

$$\begin{aligned} JK(B) &= \sum_i \frac{Y_{i\dots}^2}{B \times r} - FK \\ &= \frac{(21,75)^2 + (21,11)^2 + (19,87)^2}{3 \times 3} - 145,76 \\ &= 0,20 \end{aligned}$$

Lampiran 13. (Lanjutan)**5. Jumlah Kuadrat Galat Perlakuan BAP (B)**

$$\begin{aligned}
 \text{JK (Galat B)} &= \sum_{i,k} \frac{Y_{i,k}^2}{p} - \text{FK} - \text{JK (B)} \\
 &= \frac{(6,99)^2 + (7,08)^2 + \dots + (6,62)^2}{3} - 145,76 - 0,20 \\
 &= 0,30
 \end{aligned}$$

6. Jumlah Kuadrat Perlakuan NPK (P)

$$\begin{aligned}
 \text{JK (P)} &= \sum_i \frac{Y_{j \dots}^2}{p \times r} - \text{FK} \\
 &= \frac{(21,58)^2 + (21,01)^2 + (20,15)^2}{3 \times 3} - 145,76 \\
 &= 0,12
 \end{aligned}$$

7. Jumlah Kuadrat Interaksi

$$\begin{aligned}
 \text{JK (B} \times \text{P)} &= \sum_{i,j} \frac{Y_{ij \dots}^2}{r} - \text{FK} - \text{JK (B)} - \text{JK (P)} \\
 &= \frac{(7,27)^2 + (7,14)^2 + \dots + (6,09)^2}{3} - 145,76 - 0,20 - 0,12 \\
 &= 0,13
 \end{aligned}$$

8. Jumlah Kuadrat Galat Perlakuan NPK

$$\begin{aligned}
 \text{JK (Galat P)} &= \text{JKT} - \text{JK (B)} - \text{JK (Galat B)} - \text{JK (P)} - \text{JK (B} \times \text{P)} \\
 &= 0,84 - 0,20 - 0,30 - 0,12 - 0,13 \\
 &= 0,09
 \end{aligned}$$

9. Perhitungan Kuadrat Tengah Perlakuan BAP (B)

$$\begin{aligned}
 \text{KT (B)} &= \frac{\text{JK (B)}}{B-1} = \frac{0,20}{3-1} = 0,10 \\
 \text{KT (Galat B)} &= \frac{\text{JK (Galat B)}}{r(B-1)} = \frac{0,30}{3(3-1)} = 0,05
 \end{aligned}$$

10. Perhitungan Kuadrat Tengah Perlakuan NPK (P)

$$\text{KT (P)} = \frac{\text{JK (P)}}{P-1} = \frac{0,12}{3-1} = 0,06$$

Lampiran 13. (Lanjutan)**11. Perhitungan Kuadrat Tengah Interaksi**

$$KT (B \times P) = \frac{JK (B \times P)}{(B-1)(P-1)} = \frac{0,13}{(3-1)(3-1)} = 0,03$$

12. Perhitungan Kuadrat Tengah Galat

$$KT (Galat P) = \frac{JK (Galat P)}{r(B-1)(P-1)} = \frac{0,09}{3(3-1)(3-1)} = 0,01$$

13. F-Hitung Perlakuan BAP (B)

$$F\text{-Hitung (B)} = \frac{KT (B)}{KT (Galat B)} = \frac{0,10}{0,05} = 2,01$$

14. F-Hitung Perlakuan NPK (P)

$$F\text{-Hitung (P)} = \frac{KT (P)}{KT (Galat P)} = \frac{0,06}{0,01} = 7,95$$

15. F-Hitung Perlakuan Interaksi

$$F\text{-Hitung (B} \times P) = \frac{KT (B \times P)}{KT (Galat P)} = \frac{0,03}{0,01} = 4,46$$

Tabel ANOVA

SK	DB	JK	KT	Fhit	F tab 0.05
B	2	0,20	0,10	2,01 ^{tn}	5,14
Galat B	6	0,30	0,05		
P	2	0,12	0,06	7,95*	3,89
BxP	4	0,13	0,03	4,46*	3,26
Galat	12	0,09	0,01		
Total	26	0,84			

Keterangan : * = signifikan, tn = tidak signifikan

16. Koefisien Keragaman (KK)

$$KK (B) = \frac{\sqrt{KT (Galat B)}}{\bar{X}} \times 100\% = \frac{\sqrt{0,05}}{2,32} \times 100\% = 9,66\%$$

$$KK (P) = \frac{\sqrt{KT (Galat P)}}{\bar{X}} \times 100\% = \frac{\sqrt{0,03}}{2,32} \times 100\% = 12,73\%$$

Lampiran 13. (Lanjutan)**17. Analisis Uji Lanjut BNJ (0,05) Perlakuan NPK Terhadap Jumlah Anakan**

$$Sd = \sqrt{\frac{KTG}{r \times P}} = \sqrt{\frac{0,01}{3 \times 3}} = 0,03$$

$$HSD_{(0,05)} = q(0,05; 2; 12) \\ = 4,20$$

$$BNJ \text{ hitung} = \text{Nilai sd} \times \text{Tabel Tukey} \\ = 0,03 \times 4,20 \\ = 0,12$$

Tabel Matriks Nilai Tengah

Perlakuan	Nilai tengah	Selisih			Notasi
		P1	P2	P3	
		2,40	2,33	2,24	
P1	2,40	0,00			a
P2	2,33	0,07	0,00		ab
P3	2,24	0,16	0,09	0,00	b

Keterangan : * : signifikan ($|\mu_1 - \mu_2| > HSD_{0,05}$), tn : ($|\mu_1 - \mu_2| < HSD_{0,05}$)

18. Analisis Uji Lanjut BNJ (0,05) Interaksi Perlakuan BAP (B) dan NPK (P) Terhadap Jumlah Anakan

$$Sd = \sqrt{\frac{KTG}{r}} = \sqrt{\frac{0,01}{3}} = 0,05$$

$$HSD_{(0,05)} = q(0,05; 2; 12) \\ = 4,20$$

$$BNJ \text{ hitung} = \text{Nilai sd} \times \text{Tabel Tukey} \\ = 0,05 \times 4,20 \\ = 0,21$$

Lampiran 13. (Lanjutan)

Perlakuan	Nilai Tengah	B1P1	B0P3	B0P1	B0P2	B1P2	B2P2	B2P1	B1P3	B2P3	Notasi
		2,49	2,45	2,42	2,38	2,31	2,31	2,28	2,24	2,03	
B1P1	2,49	0,00									a
B0P3	2,45	0,04	0,00								ab
B0P1	2,42	0,07	0,03	0,00							ab
B0P2	2,38	0,11	0,07	0,04	0,00						ab
B1P2	2,31	0,18	0,14	0,11	0,07	0,00					ab
B2P2	2,31	0,18	0,14	0,11	0,07	0,00	0,00				ab
B2P1	2,28	0,21	0,17	0,14	0,10	0,03	0,03	0,00			ab
B1P3	2,24	0,25	0,21	0,18	0,14	0,07	0,07	0,04	0,00		bc
B2P3	2,03	0,46	0,42	0,39	0,35	0,28	0,28	0,25	0,21	0,00	c

Lampiran 14. Analisis Ragam Data Jumlah Umbi per Rumpun

Petak Utama	Petak Anakan	Ulangan			Total Interaksi	Rata - rata
		I	II	III		
B0	P1	6,00	7,50	8,50	22,00	7,33
	P2	8,50	9,00	7,00	24,50	8,17
	P3	7,00	6,00	8,00	21,00	7,00
	Jumlah	21,50	22,50	23,50	67,50	
	Rata-rata	7,17	7,50	7,83		7,50
B1	P1	10,00	6,00	6,00	22,00	7,33
	P2	6,50	7,00	5,00	18,50	6,17
	P3	9,00	7,50	6,00	22,50	7,50
	Jumlah	25,50	20,50	17,00	63,00	
	Rata-rata	8,50	6,83	5,67		7,00
B2	P1	6,00	7,00	6,00	19,00	6,33
	P2	7,50	5,00	7,50	20,00	6,67
	P3	7,00	5,50	4,50	17,00	5,67
	Jumlah	20,50	17,50	18,00	56,00	
	Rata-rata	6,83	5,83	6,00		6,22
Jumlah		67,50	60,50	58,50	186,50	
Rata-rata		7,50	7,00	6,22		6,91

Keterangan. B0 : 0 ppm, B1 : 50 ppm, B2 : 100 ppm, P1 : 1,25 ton/ha, P2 : 2,50 ton/ha, P3 : 3,75 ton/ha

Lampiran 14. (Lanjutan)

Petak Utama	Anak Petak			Total	Rata-rata
	P1	P2	P3		
0 ppm (B0)	22,00	24,50	21,00	67,50	22,50
50 ppm (B1)	22,00	18,50	22,50	63,00	21,00
100 ppm (B2)	19,00	20,00	17,00	56,00	18,67
Total	63,00	63,00	60,50	186,50	
Rata-rata	7,00	7,00	6,72		20,72

1. Perhitungan Derajat Bebas (db)

$$B \text{ (BAP)} = 3$$

$$P \text{ (NPK)} = 3$$

$$db \text{ BAP (B)} = B - 1 = 3 - 1 = 2$$

$$db \text{ Galat B} = (B - 1) \times r = (3 - 1) \times 3 = 6$$

$$db \text{ NPK (P)} = P - 1 = 3 - 1 = 2$$

$$db \text{ Interaksi (B} \times \text{P)} = (B - 1)(P - 1) = (3 - 1)(3 - 1) = 2 \times 2 = 4$$

$$db \text{ Galat P} = B(r - 1)(P - 1) = 3(3 - 1)(3 - 1) = 3 \times 2 \times 2 = 12$$

$$db \text{ Total} = BPr - 1 = 3 \times 3 \times 3 - 1 = 26$$

2. Faktor Koreksi (FK)

$$FK = \frac{Y_{\dots}^2}{B \times P \times r} = \frac{(186,50)^2}{3 \times 3 \times 3} = 1.288,23$$

3. Perhitungan Jumlah Kuadrat Total (JK)

$$\begin{aligned} JKT &= \sum Y_{ij}^2 - FK \\ &= (6,00)^2 + (7,50)^2 + \dots + (4,50)^2 - 1.288,23 \\ &= 47,02 \end{aligned}$$

4. Jumlah Kuadrat Perlakuan BAP (B)

$$\begin{aligned} JK(B) &= \sum_i \frac{Y_{i\cdot\cdot}^2}{B \times r} - FK \\ &= \frac{(67,50)^2 + (63,00)^2 + (56,00)^2}{3 \times 3} - 1.288,23 \\ &= 7,46 \end{aligned}$$

Lampiran 14. (Lanjutan)**5. Jumlah Kuadrat Galat Perlakuan BAP (B)**

$$\begin{aligned}
 \text{JK (Galat B)} &= \sum_{i,k} \frac{Y_{i,k}^2}{p} - \text{FK} - \text{JK (B)} \\
 &= \frac{(21,50)^2 + (22,50)^2 + \dots + (18,00)^2}{3} - 1.288,23 - 7,46 \\
 &= 14,56
 \end{aligned}$$

6. Jumlah Kuadrat Perlakuan NPK (P)

$$\begin{aligned}
 \text{JK (P)} &= \sum_i \frac{Y_{j \dots}^2}{p \times r} - \text{FK} \\
 &= \frac{(63,00)^2 + (63,00)^2 + (60,50)^2}{3 \times 3} - 1.288,23 \\
 &= 0,46
 \end{aligned}$$

7. Jumlah Kuadrat Interaksi

$$\begin{aligned}
 \text{JK (B} \times \text{P)} &= \sum_{i,j} \frac{Y_{ij \dots}^2}{r} - \text{FK} - \text{JK (B)} - \text{JK (P)} \\
 &= \frac{(22,00)^2 + (24,50)^2 + \dots + (17,00)^2}{3} - 1.288,23 - 14,56 - 0,46 \\
 &= 6,43
 \end{aligned}$$

8. Jumlah Kuadrat Galat Perlakuan NPK

$$\begin{aligned}
 \text{JK (Galat P)} &= \text{JKT} - \text{JK (B)} - \text{JK (Galat B)} - \text{JK (P)} - \text{JK (B} \times \text{P)} \\
 &= 47,02 - 7,46 - 14,56 - 0,46 - 6,43 \\
 &= 18,11
 \end{aligned}$$

9. Perhitungan Kuadrat Tengah Perlakuan BAP (B)

$$\begin{aligned}
 \text{KT (B)} &= \frac{\text{JK (B)}}{B-1} = \frac{7,46}{3-1} = 3,73 \\
 \text{KT (Galat B)} &= \frac{\text{JK (Galat B)}}{r(B-1)} = \frac{14,56}{3(3-1)} = 2,43
 \end{aligned}$$

10. Perhitungan Kuadrat Tengah Perlakuan NPK (P)

$$\text{KT (P)} = \frac{\text{JK (P)}}{P-1} = \frac{0,46}{3-1} = 0,23$$

Lampiran 14. (Lanjutan)**11. Perhitungan Kuadrat Tengah Interaksi**

$$KT (B \times P) = \frac{JK (B \times P)}{(B-1)(P-1)} = \frac{6,43}{(3-1)(3-1)} = 1,61$$

12. Perhitungan Kuadrat Tengah Galat

$$KT (Galat P) = \frac{JK (Galat P)}{r(B-1)(P-1)} = \frac{18,11}{3(3-1)(3-1)} = 1,51$$

13. F-Hitung Perlakuan BAP (B)

$$F\text{-Hitung (B)} = \frac{KT (B)}{KT (Galat B)} = \frac{3,72}{2,43} = 1,54$$

14. F-Hitung Perlakuan NPK (P)

$$F\text{-Hitung (P)} = \frac{KT (P)}{KT (Galat P)} = \frac{0,23}{1,51} = 0,15$$

15. F-Hitung Perlakuan Interaksi

$$F\text{-Hitung (B} \times P) = \frac{KT (B \times P)}{KT (Galat P)} = \frac{1,61}{1,51} = 1,06$$

Tabel ANOVA

SK	DB	JK	KT	Fhit	F tab 0.05
B	2	7,46	3,73	1,54 ^{tn}	5,14
Galat B	6	14,56	2,43		
P	2	0,46	0,23	0,15 ^{tn}	3,89
BxP	4	6,43	1,61	1,06 ^{tn}	3,26
Galat	12	18,11	1,51		
Total	26	47,02			

Keterangan : * = signifikan, tn = tidak signifikan

16. Koefisien Keragaman (KK)

$$KK (B) = \frac{\sqrt{KT (Galat B)}}{\bar{X}} \times 100\% = \frac{\sqrt{2,43}}{6,91} \times 100\% = 22,55\%$$

$$KK (P) = \frac{\sqrt{KT (Galat P)}}{\bar{X}} \times 100\% = \frac{\sqrt{1,51}}{6,91} \times 100\% = 17,79\%$$

Lampiran 15. Transformasi $\sqrt{\text{Data}}$ Jumlah Umbi per Rumpun

Petak Utama	Petak Anakan	Ulangan			Total Interaksi	Rata - rata
		I	II	III		
B0	P1	2,45	2,74	2,92	8,10	2,70
	P2	2,92	3,00	2,65	8,56	2,85
	P3	2,65	2,45	2,83	7,92	2,64
	Jumlah	8,01	8,19	8,39	24,59	
	Rata-rata	2,67	2,73	2,80		2,73
B1	P1	3,16	2,45	2,45	8,06	2,69
	P2	2,55	2,65	2,24	7,43	2,48
	P3	3,00	2,74	2,45	8,19	2,73
	Jumlah	8,71	7,83	7,14	23,68	
	Rata-rata	2,90	2,61	2,38		2,63
B2	P1	2,45	2,65	2,45	7,54	2,51
	P2	2,74	2,24	2,74	7,71	2,57
	P3	2,65	2,35	2,12	7,11	2,37
	Jumlah	7,83	7,23	7,31	22,37	
	Rata-rata	2,61	2,41	2,44		2,49
Jumlah		24,56	23,25	22,83	70,64	
Rata-rata		2,73	2,63	2,49		2,62

Keterangan. B0 : 0 ppm, B1 : 50 ppm, B2 : 100 ppm, P1 : 1,25 ton/ha, P2 : 2,50 ton/ha, P3 : 3,75 ton/ha

Lampiran 15. (Lanjutan)

Petak Utama	Anak Petak			Total	Rata-rata
	P1	P2	P3		
0 ppm (B0)	8,10	8,56	7,92	24,59	8,20
50 ppm (B1)	8,06	7,43	8,19	23,68	7,89
100 ppm (B2)	7,54	7,71	7,11	22,37	7,46
Total	23,71	23,71	23,22	70,64	
Rata-rata	2,63	2,63	2,58		7,85

1. Perhitungan Derajat Bebas (db)

$$B \text{ (BAP)} = 3$$

$$P \text{ (NPK)} = 3$$

$$db \text{ BAP (B)} = B - 1 = 3 - 1 = 2$$

$$db \text{ Galat B} = (B - 1) \times r = (3 - 1) \times 3 = 6$$

$$db \text{ NPK (P)} = P - 1 = 3 - 1 = 2$$

$$db \text{ Interaksi (B} \times \text{P)} = (B - 1)(P - 1) = (3 - 1)(3 - 1) = 2 \times 2 = 4$$

$$db \text{ Galat P} = B(r - 1)(P - 1) = 3(3 - 1)(3 - 1) = 3 \times 2 \times 2 = 12$$

$$db \text{ Total} = BPr - 1 = 3 \times 3 \times 3 - 1 = 26$$

2. Faktor Koreksi (FK)

$$FK = \frac{Y_{\dots}^2}{B \times P \times r} = \frac{(70,64)^2}{3 \times 3 \times 3} = 184,81$$

3. Perhitungan Jumlah Kuadrat Total (JK)

$$\begin{aligned} JKT &= \sum Y_{ij}^2 - FK \\ &= (2,45)^2 + (2,74)^2 + \dots + (2,12)^2 - 184,81 \\ &= 47,02 \end{aligned}$$

4. Jumlah Kuadrat Perlakuan BAP (B)

$$\begin{aligned} JK(B) &= \sum_i \frac{Y_{i\cdot\cdot}^2}{B \times r} - FK \\ &= \frac{(24,59)^2 + (23,68)^2 + (22,37)^2}{3 \times 3} - 184,81 \\ &= 0,28 \end{aligned}$$

Lampiran 15. (Lanjutan)**5. Jumlah Kuadrat Galat Perlakuan BAP (B)**

$$\begin{aligned}
 \text{JK (Galat B)} &= \sum_{i,k} \frac{Y_{i,k}^2}{p} - \text{FK} - \text{JK (B)} \\
 &= \frac{(8,01)^2 + (8,19)^2 + \dots + (7,31)^2}{3} - 184,81 - 0,28 \\
 &= 0,51
 \end{aligned}$$

6. Jumlah Kuadrat Perlakuan NPK (P)

$$\begin{aligned}
 \text{JK (P)} &= \sum_i \frac{Y_{j\dots}^2}{p \times r} - \text{FK} \\
 &= \frac{(23,71)^2 + (23,71)^2 + (23,22)^2}{3 \times 3} - 184,81 \\
 &= 0,02
 \end{aligned}$$

7. Jumlah Kuadrat Interaksi

$$\begin{aligned}
 \text{JK (B} \times \text{P)} &= \sum_{i,j} \frac{Y_{ij\dots}^2}{r} - \text{FK} - \text{JK (B)} - \text{JK (P)} \\
 &= \frac{(8,10)^2 + (8,56)^2 + \dots + (7,11)^2}{3} - 184,81 - 0,28 - 0,02 \\
 &= 0,23
 \end{aligned}$$

8. Jumlah Kuadrat Galat Perlakuan NPK

$$\begin{aligned}
 \text{JK (Galat P)} &= \text{JKT} - \text{JK (B)} - \text{JK (Galat B)} - \text{JK (P)} - \text{JK (B} \times \text{P)} \\
 &= 1,69 - 0,28 - 0,51 - 0,02 - 0,23 \\
 &= 0,65
 \end{aligned}$$

9. Perhitungan Kuadrat Tengah Perlakuan BAP (B)

$$\begin{aligned}
 \text{KT (B)} &= \frac{\text{JK (B)}}{B-1} = \frac{0,28}{3-1} = 0,16 \\
 \text{KT (Galat B)} &= \frac{\text{JK (Galat B)}}{r(B-1)} = \frac{0,51}{3(3-1)} = 0,09
 \end{aligned}$$

10. Perhitungan Kuadrat Tengah Perlakuan NPK (P)

$$\text{KT (P)} = \frac{\text{JK (P)}}{P-1} = \frac{0,02}{3-1} = 0,01$$

Lampiran 15. (Lanjutan)**11. Perhitungan Kuadrat Tengah Interaksi**

$$KT (B \times P) = \frac{JK (B \times P)}{(B-1)(P-1)} = \frac{0,23}{(3-1)(3-1)} = 0,06$$

12. Perhitungan Kuadrat Tengah Galat

$$KT (Galat P) = \frac{JK (Galat P)}{r(B-1)(P-1)} = \frac{0,65}{3(3-1)(3-1)} = 0,05$$

13. F-Hitung Perlakuan BAP (B)

$$F\text{-Hitung (B)} = \frac{KT (B)}{KT (Galat B)} = \frac{0,14}{0,09} = 1,62$$

14. F-Hitung Perlakuan NPK (P)

$$F\text{-Hitung (P)} = \frac{KT (P)}{KT (Galat P)} = \frac{0,01}{0,05} = 0,16$$

15. F-Hitung Perlakuan Interaksi

$$F\text{-Hitung (B} \times P) = \frac{KT (B \times P)}{KT (Galat P)} = \frac{0,06}{0,05} = 1,05$$

Tabel ANOVA

SK	DB	JK	KT	Fhit	F tab 0.05
B	2	0,28	0,14	1,62 ^{tn}	5,14
Galat B	6	0,51	0,09		
P	2	0,02	0,01	0,16 ^{tn}	3,89
BxP	4	0,23	0,06	1,05 ^{tn}	3,26
Galat	12	0,65	0,05		
Total	26	1,69			

Keterangan : * = signifikan, tn = tidak signifikan

16. Koefisien Keragaman (KK)

$$KK (B) = \frac{\sqrt{KT (Galat B)}}{\bar{X}} \times 100\% = \frac{\sqrt{0,09}}{2,62} \times 100\% = 11,17\%$$

$$KK (P) = \frac{\sqrt{KT (Galat P)}}{\bar{X}} \times 100\% = \frac{\sqrt{0,05}}{2,62} \times 100\% = 8,92\%$$

Lampiran 16. Analisis Ragam Data Bobot per Umbi

Petak Utama	Petak Anakan	Blok/ulangan			Total Interaksi	Rata - rata
		I	II	III		
B0	P1	3,87	3,14	3,56	10,57	3,52
	P2	2,66	2,85	3,71	9,21	3,07
	P3	3,23	3,56	2,97	9,77	3,26
	Jumlah	9,77	9,55	10,23	29,55	
	Rata-rata	3,26	3,18	3,41		3,28
B1	P1	2,87	4,02	3,44	10,33	3,44
	P2	4,57	3,73	4,08	12,38	4,13
	P3	2,85	3,20	4,22	10,27	3,42
	Jumlah	10,29	10,95	11,74	32,98	
	Rata-rata	3,43	3,65	3,91		3,66
B2	P1	4,17	4,72	3,91	12,80	4,27
	P2	3,09	4,19	4,19	11,47	3,82
	P3	3,11	4,76	4,59	12,47	4,16
	Jumlah	10,38	13,67	12,69	36,74	
	Rata-rata	3,46	4,56	4,23		4,08
Jumlah		30,44	34,17	34,66	99,26	
Rata-rata		3,28	3,66	4,08		3,68

Keterangan. B0 : 0 ppm, B1 : 50 ppm, B2 : 100 ppm, P1 : 1,25 ton/ha, P2 : 2,50 ton/ha, P3 : 3,75 ton/ha

Lampiran 16. (Lanjutan)

Petak Utama	Anak Petak			Total	Rata-rata
	P1	P2	P3		
0 ppm (B0)	10,57	9,21	9,77	29,55	9,85
50 ppm (B1)	10,33	12,38	10,27	32,98	10,99
100 ppm (B2)	12,80	11,47	12,47	36,74	12,25
Total	33,70	33,06	32,51	99,26	
Rata-rata	3,74	3,67	3,61		11,03

1. Perhitungan Derajat Bebas (db)

$$B \text{ (BAP)} = 3$$

$$P \text{ (NPK)} = 3$$

$$db \text{ BAP (B)} = B - 1 = 3 - 1 = 2$$

$$db \text{ Galat B} = (B - 1) \times r = (3 - 1) \times 3 = 6$$

$$db \text{ NPK (P)} = P - 1 = 3 - 1 = 2$$

$$db \text{ Interaksi (B} \times \text{P)} = (B - 1)(P - 1) = (3 - 1)(3 - 1) = 2 \times 2 = 4$$

$$db \text{ Galat P} = B(r - 1)(P - 1) = 3(3 - 1)(3 - 1) = 3 \times 2 \times 2 = 12$$

$$db \text{ Total} = BPr - 1 = 3 \times 3 \times 3 - 1 = 26$$

2. Faktor Koreksi (FK)

$$FK = \frac{Y_{\dots}^2}{B \times P \times r} = \frac{(99,26)^2}{3 \times 3 \times 3} = 364,94$$

3. Perhitungan Jumlah Kuadrat Total (JK)

$$\begin{aligned} JKT &= \sum Y_{ij}^2 - FK \\ &= (3,78)^2 + (73,14)^2 + \dots + (4,59)^2 - 364,94 \\ &= 10,36 \end{aligned}$$

4. Jumlah Kuadrat Perlakuan BAP (B)

$$\begin{aligned} JK(B) &= \sum_i \frac{Y_{i\cdot\cdot}^2}{B \times r} - FK \\ &= \frac{(29,55)^2 + (32,98)^2 + (36,74)^2}{3 \times 3} - 364,94 \\ &= 2,87 \end{aligned}$$

Lampiran 16. (Lanjutan)**5. Jumlah Kuadrat Galat Perlakuan BAP (B)**

$$\begin{aligned}
 \text{JK (Galat B)} &= \sum_{i,k} \frac{Y_{i,k}^2}{p} - \text{FK} - \text{JK (B)} \\
 &= \frac{(9,77)^2 + (9,55)^2 + \dots + (12,69)^2}{3} - 364,94 - 2,87 \\
 &= 2,34
 \end{aligned}$$

6. Jumlah Kuadrat Perlakuan NPK (P)

$$\begin{aligned}
 \text{JK (P)} &= \sum_i \frac{Y_{j \dots}^2}{p \times r} - \text{FK} \\
 &= \frac{(33,70)^2 + (33,06)^2 + (32,51)^2}{3 \times 3} - 364,94 \\
 &= 0,08
 \end{aligned}$$

7. Jumlah Kuadrat Interaksi

$$\begin{aligned}
 \text{JK (B} \times \text{P)} &= \sum_{i,j} \frac{Y_{ij \dots}^2}{r} - \text{FK} - \text{JK (B)} - \text{JK (P)} \\
 &= \frac{(10,57)^2 + (9,21)^2 + \dots + (12,47)^2}{3} - 364,94 - 2,87 - 0,08 \\
 &= 1,51
 \end{aligned}$$

8. Jumlah Kuadrat Galat Perlakuan NPK

$$\begin{aligned}
 \text{JK (Galat P)} &= \text{JKT} - \text{JK (B)} - \text{JK (Galat B)} - \text{JK (P)} - \text{JK (B} \times \text{P)} \\
 &= 10,36 - 2,87 - 2,34 - 0,08 - 1,51 \\
 &= 3,56
 \end{aligned}$$

9. Perhitungan Kuadrat Tengah Perlakuan BAP (B)

$$\begin{aligned}
 \text{KT (B)} &= \frac{\text{JK (B)}}{B-1} = \frac{2,87}{3-1} = 1,43 \\
 \text{KT (Galat B)} &= \frac{\text{JK (Galat B)}}{r(B-1)} = \frac{2,34}{3(3-1)} = 0,39
 \end{aligned}$$

10. Perhitungan Kuadrat Tengah Perlakuan NPK (P)

$$\text{KT (P)} = \frac{\text{JK (P)}}{P-1} = \frac{0,08}{3-1} = 0,04$$

Lampiran 16. (Lanjutan)**11. Perhitungan Kuadrat Tengah Interaksi**

$$KT (B \times P) = \frac{JK (B \times P)}{(B-1)(P-1)} = \frac{1,51}{(3-1)(3-1)} = 0,38$$

12. Perhitungan Kuadrat Tengah Galat

$$KT (Galat P) = \frac{JK (Galat P)}{r(B-1)(P-1)} = \frac{3,56}{3(3-1)(3-1)} = 0,30$$

13. F-Hitung Perlakuan BAP (B)

$$F\text{-Hitung (B)} = \frac{KT (B)}{KT (Galat B)} = \frac{1,43}{0,39} = 3,68$$

14. F-Hitung Perlakuan NPK (P)

$$F\text{-Hitung (P)} = \frac{KT (P)}{KT (Galat P)} = \frac{0,04}{0,30} = 0,13$$

15. F-Hitung Perlakuan Interaksi

$$F\text{-Hitung (B} \times P) = \frac{KT (B \times P)}{KT (Galat P)} = \frac{0,38}{0,30} = 1,27$$

Tabel ANOVA

SK	DB	JK	KT	Fhit	F tab 0.05
B	2	2,87	1,43	3,68 ^{tn}	5,14
Galat B	6	2,34	0,39		
P	2	0,08	0,04	0,13 ^{tn}	3,89
BxP	4	1,51	0,38	1,27 ^{tn}	3,26
Galat	12	3,56	0,30		
Total	26	10,36			

Keterangan : * = signifikan, tn = tidak signifikan

16. Koefisien Keragaman (KK)

$$KK (B) = \frac{\sqrt{KT (Galat B)}}{\bar{X}} \times 100\% = \frac{\sqrt{0,39}}{3,68} \times 100\% = 16,97\%$$

$$KK (P) = \frac{\sqrt{KT (Galat P)}}{\bar{X}} \times 100\% = \frac{\sqrt{0,30}}{3,68} \times 100\% = 14,82\%$$

Lampiran 17. Analisis Ragam Data Bobot Segar Umbi per Tanaman

Petak Utama	Petak Anakan	Blok/ulangan			Total Interaksi	Rata - rata
		I	II	III		
B0	P1	23,20	23,60	30,20	77,00	25,67
	P2	22,60	25,60	25,90	74,10	24,70
	P3	22,60	21,40	23,80	67,80	22,60
	Jumlah	68,40	70,60	79,90	218,90	
	Rata-rata	22,80	23,53	26,63		24,32
B1	P1	28,70	24,10	20,70	73,50	24,50
	P2	29,70	26,10	20,40	76,20	25,40
	P3	25,70	24,00	25,30	75,00	25,00
	Jumlah	84,10	74,20	66,40	224,70	
	Rata-rata	28,03	24,73	22,13		24,97
B2	P1	25,00	33,00	23,40	81,40	27,13
	P2	23,20	20,90	31,40	75,50	25,17
	P3	21,80	26,20	20,70	68,70	22,90
	Jumlah	70,00	80,10	75,50	225,60	
	Rata-rata	23,33	26,70	25,17		25,07
Jumlah		222,50	224,90	221,80	669,20	
Rata-rata		24,32	24,97	25,07		24,79

Keterangan. B0 : 0 ppm, B1 : 50 ppm, B2 : 100 ppm, P1 : 1,25 ton/ha, P2 : 2,50 ton/ha, P3 : 3,75 ton/ha

Lampiran 17. (Lanjutan)

Petak Utama	Anak Petak			Total	Rata-rata
	P1	P2	P3		
0 ppm (B0)	77,00	74,10	67,80	218,90	72,97
50 ppm (B1)	73,50	76,20	75,00	224,70	74,90
100 ppm (B2)	81,40	75,50	68,70	225,60	75,20
Total	231,90	225,80	211,50	669,20	
Rata-rata	25,77	25,09	23,50		74,36

1. Perhitungan Derajat Bebas (db)

$$B \text{ (BAP)} = 3$$

$$P \text{ (NPK)} = 3$$

$$db \text{ BAP (B)} = B - 1 = 3 - 1 = 2$$

$$db \text{ Galat B} = (B - 1) \times r = (3 - 1) \times 3 = 6$$

$$db \text{ NPK (P)} = P - 1 = 3 - 1 = 2$$

$$db \text{ Interaksi (B} \times \text{P)} = (B - 1)(P - 1) = (3 - 1)(3 - 1) = 2 \times 2 = 4$$

$$db \text{ Galat P} = B(r - 1)(P - 1) = 3(3 - 1)(3 - 1) = 3 \times 2 \times 2 = 12$$

$$db \text{ Total} = BPr - 1 = 3 \times 3 \times 3 - 1 = 26$$

2. Faktor Koreksi (FK)

$$FK = \frac{Y_{\dots}^2}{B \times P \times r} = \frac{(669,20)^2}{3 \times 3 \times 3} = 16.586,25$$

3. Perhitungan Jumlah Kuadrat Total (JK)

$$\begin{aligned} JKT &= \sum Y_{ij}^2 - FK \\ &= (23,60)^2 + (23,60)^2 + \dots + (20,70)^2 - 16.586,25 \\ &= 294,85 \end{aligned}$$

4. Jumlah Kuadrat Perlakuan BAP (B)

$$\begin{aligned} JK(B) &= \sum_i \frac{Y_{i\cdot\cdot}^2}{B \times r} - FK \\ &= \frac{(218,90)^2 + (224,70)^2 + (225,60)^2}{3 \times 3} - 16.586,25 \\ &= 2,94 \end{aligned}$$

Lampiran 17. (Lanjutan)**5. Jumlah Kuadrat Galat Perlakuan BAP (B)**

$$\begin{aligned}
 \text{JK (Galat B)} &= \sum_{i,k} \frac{Y_{i,k}^2}{p} - \text{FK} - \text{JK (B)} \\
 &= \frac{(68,40)^2 + (70,60)^2 + \dots + (75,60)^2}{3} - 16.586,25 - 2,94 \\
 &= 94,35
 \end{aligned}$$

6. Jumlah Kuadrat Perlakuan NPK (P)

$$\begin{aligned}
 \text{JK (P)} &= \sum_i \frac{Y_{j \dots}^2}{p \times r} - \text{FK} \\
 &= \frac{(231,90)^2 + (225,80)^2 + (211,50)^2}{3 \times 3} - 16.586,25 \\
 &= 24,37
 \end{aligned}$$

7. Jumlah Kuadrat Interaksi

$$\begin{aligned}
 \text{JK (B} \times \text{P)} &= \sum_{i,j} \frac{Y_{ij \dots}^2}{r} - \text{FK} - \text{JK (B)} - \text{JK (P)} \\
 &= \frac{(77,00)^2 + (74,10)^2 + \dots + (689,70)^2}{3} - 16.586,25 - 2,94 - 24,37 \\
 &= 18,53
 \end{aligned}$$

8. Jumlah Kuadrat Galat Perlakuan NPK

$$\begin{aligned}
 \text{JK (Galat P)} &= \text{JKT} - \text{JK (B)} - \text{JK (Galat B)} - \text{JK (P)} - \text{JK (B} \times \text{P)} \\
 &= 294,85 - 2,94 - 94,35 - 24,37 - 18,53 \\
 &= 154,67
 \end{aligned}$$

9. Perhitungan Kuadrat Tengah Perlakuan BAP (B)

$$\begin{aligned}
 \text{KT (B)} &= \frac{\text{JK (B)}}{B-1} = \frac{2,94}{3-1} = 1,47 \\
 \text{KT (Galat B)} &= \frac{\text{JK (Galat B)}}{r(B-1)} = \frac{94,35}{3(3-1)} = 15,72
 \end{aligned}$$

10. Perhitungan Kuadrat Tengah Perlakuan NPK (P)

$$\text{KT (P)} = \frac{\text{JK (P)}}{P-1} = \frac{24,37}{3-1} = 12,18$$

Lampiran 17. (Lanjutan)**11. Perhitungan Kuadrat Tengah Interaksi**

$$KT (B \times P) = \frac{JK (B \times P)}{(B-1)(P-1)} = \frac{18,53}{(3-1)(3-1)} = 4,63$$

12. Perhitungan Kuadrat Tengah Galat

$$KT (Galat P) = \frac{JK (Galat P)}{r(B-1)(P-1)} = \frac{154,67}{3(3-1)(3-1)} = 12,89$$

13. F-Hitung Perlakuan BAP (B)

$$F\text{-Hitung (B)} = \frac{KT (B)}{KT (Galat B)} = \frac{1,47}{15,72} = 0,09$$

14. F-Hitung Perlakuan NPK (P)

$$F\text{-Hitung (P)} = \frac{KT (P)}{KT (Galat P)} = \frac{12,18}{12,89} = 0,95$$

15. F-Hitung Perlakuan Interaksi

$$F\text{-Hitung (B} \times P) = \frac{KT (B \times P)}{KT (Galat P)} = \frac{4,63}{12,89} = 0,36$$

Tabel ANOVA

SK	DB	JK	KT	Fhit	F tab 0.05
B	2	2,94	1,47	0,09 ^{tn}	5,14
Galat B	6	94,35	15,72		
P	2	24,37	12,18	0,95 ^{tn}	3,89
BxP	4	18,53	4,63	0,36 ^{tn}	3,26
Galat	12	154,67	12,89		
Total	26	294,85			

Keterangan : * = signifikan, tn = tidak signifikan

16. Koefisien Keragaman (KK)

$$KK (B) = \frac{\sqrt{KT (Galat B)}}{\bar{X}} \times 100\% = \frac{\sqrt{1,47}}{24,79} \times 100\% = 16,00\%$$

$$KK (P) = \frac{\sqrt{KT (Galat P)}}{\bar{X}} \times 100\% = \frac{\sqrt{12,89}}{24,79} \times 100\% = 14,48\%$$

Lampiran 18. Analisis Ragam Data Bobot Tanaman Total

Petak Utama	Petak Anakan	Ulangan			Total Interaksi	Rata - rata
		I	II	III		
B0	P1	31,60	46,94	45,59	124,13	41,38
	P2	28,18	38,62	29,19	95,99	32,00
	P3	32,66	38,84	25,31	96,81	32,27
	Jumlah	92,44	124,40	100,09	316,93	
	Rata-rata	30,81	41,47	33,36		35,21
B1	P1	44,72	52,28	35,58	132,58	44,19
	P2	37,26	52,28	30,82	120,36	40,12
	P3	39,09	28,03	32,35	75,98	33,16
	Jumlah	121,07	109,10	98,75	328,92	
	Rata-rata	40,36	36,37	32,92		36,55
B2	P1	53,79	35,47	37,62	126,88	42,29
	P2	44,57	28,03	52,10	124,70	41,57
	P3	47,57	28,56	43,52	119,65	39,88
	Jumlah	145,93	92,06	133,24	371,23	
	Rata-rata	48,64	30,69	44,41		41,25
Jumlah		359,44	325,56	332,08	1.040,57	
Rata-rata		35,21	36,55	41,25		38,54

Keterangan. B0 : 0 ppm, B1 : 50 ppm, B2 : 100 ppm, P1 : 1,25 ton/ha, P2 : 2,50 ton/ha, P3 : 3,75 ton/ha

Lampiran 18. (Lanjutan)

Petak Utama	Anak Petak			Total	Rata-rata
	P1	P2	P3		
0 ppm (B0)	124,13	95,99	96,81	316,93	105,64
50 ppm (B1)	132,58	120,36	99,47	352,41	117,47
100 ppm (B2)	126,88	124,70	119,65	371,23	123,74
Total	383,59	341,05	315,93	346,86	
Rata-rata	42,62	37,89	35,10		115,62

1. Perhitungan Derajat Bebas (db)

$$B \text{ (BAP)} = 3$$

$$P \text{ (NPK)} = 3$$

$$db \text{ BAP (B)} = B - 1 = 3 - 1 = 2$$

$$db \text{ Galat B} = (B - 1) \times r = (3 - 1) \times 3 = 6$$

$$db \text{ NPK (P)} = P - 1 = 3 - 1 = 2$$

$$db \text{ Interaksi (B} \times \text{P)} = (B - 1)(P - 1) = (3 - 1)(3 - 1) = 2 \times 2 = 4$$

$$db \text{ Galat P} = B(r - 1)(P - 1) = 3(3 - 1)(3 - 1) = 3 \times 2 \times 2 = 12$$

$$db \text{ Total} = BPr - 1 = 3 \times 3 \times 3 - 1 = 26$$

2. Faktor Koreksi (FK)

$$FK = \frac{Y_{\dots}^2}{B \times P \times r} = \frac{(1040,57)^2}{3 \times 3 \times 3} = 40.103,18$$

3. Perhitungan Jumlah Kuadrat Total (JK)

$$\begin{aligned} JKT &= \sum Y_{ij}^2 - FK \\ &= (31,60)^2 + (46,94)^2 + \dots + (43,52)^2 - 40.103,18 \\ &= 1.987,20 \end{aligned}$$

4. Jumlah Kuadrat Perlakuan BAP (B)

$$\begin{aligned} JK(B) &= \sum_i \frac{Y_{i\cdot}^2}{B \times r} - FK \\ &= \frac{(316,93)^2 + (352,41)^2 + (371,23)^2}{3 \times 3} - 40.103,18 \\ &= 168,94 \end{aligned}$$

Lampiran 18. (Lanjutan)**5. Jumlah Kuadrat Galat Perlakuan BAP (B)**

$$\begin{aligned}
 \text{JK (Galat B)} &= \sum_{i,k} \frac{Y_{i,k}^2}{p} - \text{FK} - \text{JK (B)} \\
 &= \frac{(92,44)^2 + (124,40)^2 + \dots + (133,24)^2}{3} - 40.103,18 - 168,94 \\
 &= 911,75
 \end{aligned}$$

6. Jumlah Kuadrat Perlakuan NPK (P)

$$\begin{aligned}
 \text{JK (P)} &= \sum_i \frac{Y_{j \dots}^2}{p \times r} - \text{FK} \\
 &= \frac{(383,59)^2 + (341,05)^2 + (315,93)^2}{3 \times 3} - 40.103,18 \\
 &= 259,95
 \end{aligned}$$

7. Jumlah Kuadrat Interaksi

$$\begin{aligned}
 \text{JK (B} \times \text{P)} &= \sum_{i,j} \frac{Y_{ij \dots}^2}{r} - \text{FK} - \text{JK (B)} - \text{JK (P)} \\
 &= \frac{(124,13)^2 + (95,99)^2 + \dots + (119,65)^2}{3} - 40.103,18 - 168,94 - 259,95 \\
 &= 309,29
 \end{aligned}$$

8. Jumlah Kuadrat Galat Perlakuan NPK

$$\begin{aligned}
 \text{JK (Galat P)} &= \text{JKT} - \text{JK (B)} - \text{JK (Galat B)} - \text{JK (P)} - \text{JK (B} \times \text{P)} \\
 &= 1.987,20 - 168,94 - 911,75 - 259,95 - 107,10 \\
 &= 539,45
 \end{aligned}$$

9. Perhitungan Kuadrat Tengah Perlakuan BAP (B)

$$\begin{aligned}
 \text{KT (B)} &= \frac{\text{JK (B)}}{B-1} = \frac{168,94}{3-1} = 84,47 \\
 \text{KT (Galat B)} &= \frac{\text{JK (Galat B)}}{r(B-1)} = \frac{911,75}{3(3-1)} = 151,96
 \end{aligned}$$

10. Perhitungan Kuadrat Tengah Perlakuan NPK (P)

$$\text{KT (P)} = \frac{\text{JK (P)}}{P-1} = \frac{259,95}{3-1} = 129,97$$

Lampiran 18. (Lanjutan)**11. Perhitungan Kuadrat Tengah Interaksi**

$$KT (B \times P) = \frac{JK (B \times P)}{(B-1)(P-1)} = \frac{107,10}{(3-1)(3-1)} = 26,78$$

12. Perhitungan Kuadrat Tengah Galat

$$KT (Galat P) = \frac{JK (Galat P)}{r(B-1)(P-1)} = \frac{539,45}{3(3-1)(3-1)} = 44,95$$

13. F-Hitung Perlakuan BAP (B)

$$F\text{-Hitung (B)} = \frac{KT (B)}{KT (Galat B)} = \frac{84,47}{151,96} = 0,56$$

14. F-Hitung Perlakuan NPK (P)

$$F\text{-Hitung (P)} = \frac{KT (P)}{KT (Galat P)} = \frac{129,97}{44,95} = 2,89$$

15. F-Hitung Perlakuan Interaksi

$$F\text{-Hitung (B} \times P) = \frac{KT (B \times P)}{KT (Galat P)} = \frac{26,78}{44,95} = 0,60$$

Tabel ANOVA

SK	DB	JK	KT	Fhit	F tab 0.05
B	2	168,94	84,47	0,56 ^{tn}	5,14
Galat B	6	911,7538	151,96		
P	2	259,95	129,97	2,89 ^{tn}	3,89
BxP	4	107,10	26,78	0,60 ^{tn}	3,26
Galat	12	539,45	44,95		
Total	26	1987,20			

Keterangan : * = signifikan, tn = tidak signifikan

16. Koefisien Keragaman (KK)

$$KK (B) = \frac{\sqrt{KT (Galat B)}}{\bar{X}} \times 100\% = \frac{\sqrt{151,96}}{37,67} \times 100\% = 31,99\%$$

$$KK (P) = \frac{\sqrt{KT (Galat P)}}{\bar{X}} \times 100\% = \frac{\sqrt{44,95}}{37,67} \times 100\% = 17,40\%$$

Lampiran 19. Transformasi $\sqrt{\text{Data}}$ Bobot Tanaman Total

Petak Utama	Petak Anakan	Ulangan			Total Interaksi	Rata - rata
		I	II	III		
B0	P1	5,62	6,85	6,75	19,22	6,41
	P2	5,31	6,21	5,40	16,93	5,64
	P3	5,71	6,23	5,03	16,98	5,66
	Jumlah	16,64	19,30	17,19	53,13	
	Rata-rata	5,55	6,43	5,73		5,90
B1	P1	6,69	7,23	5,96	19,88	6,63
	P2	6,10	7,23	5,55	18,89	6,30
	P3	6,25	5,29	5,69	17,23	5,74
	Jumlah	19,04	19,76	17,20	56,00	
	Rata-rata	6,35	6,59	5,73		6,22
B2	P1	7,33	5,96	6,13	19,42	6,47
	P2	6,68	5,29	7,22	19,19	6,40
	P3	6,90	5,34	6,60	18,84	6,28
	Jumlah	20,91	16,59	19,95	57,45	
	Rata-rata	6,97	5,53	6,65		6,38
Jumlah		56,60	55,65	54,34	166,58	
Rata-rata		5,90	6,22	6,38		6,17

Keterangan. B0 : 0 ppm, B1 : 50 ppm, B2 : 100 ppm, P1 : 1,25 ton/ha, P2 : 2,50 ton/ha, P3 : 3,75 ton/ha

Lampiran 19. (Lanjutan)

Petak Utama	Anak Petak			Total	Rata-rata
	P1	P2	P3		
0 ppm (B0)	19,22	16,93	16,98	53,13	17,71
50 ppm (B1)	19,88	18,89	17,23	56,00	18,67
100 ppm (B2)	19,42	19,19	18,84	57,45	19,15
Total	58,53	55,00	53,05	1.66,58	
Rata-rata	6,50	6,11	5,89		18,51

1. Perhitungan Derajat Bebas (db)

$$B \text{ (BAP)} = 3$$

$$P \text{ (NPK)} = 3$$

$$db \text{ BAP (B)} = B - 1 = 3 - 1 = 2$$

$$db \text{ Galat B} = (B - 1) \times r = (3 - 1) \times 3 = 6$$

$$db \text{ NPK (P)} = P - 1 = 3 - 1 = 2$$

$$db \text{ Interaksi (B} \times \text{P)} = (B - 1)(P - 1) = (3 - 1)(3 - 1) = 2 \times 2 = 4$$

$$db \text{ Galat P} = B(r - 1)(P - 1) = 3(3 - 1)(3 - 1) = 3 \times 2 \times 2 = 12$$

$$db \text{ Total} = BPr - 1 = 3 \times 3 \times 3 - 1 = 26$$

2. Faktor Koreksi (FK)

$$FK = \frac{Y_{\dots}^2}{B \times P \times r} = \frac{(166,58)^2}{3 \times 3 \times 3} = 1.027,75$$

3. Perhitungan Jumlah Kuadrat Total (JK)

$$\begin{aligned} JKT &= \sum Y_{ij}^2 - FK \\ &= (5,62)^2 + (6,85)^2 + \dots + (6,60)^2 - 1.027,75 \\ &= 12,81 \end{aligned}$$

4. Jumlah Kuadrat Perlakuan BAP (B)

$$\begin{aligned} JK(B) &= \sum_i \frac{Y_{i\cdot\cdot}^2}{B \times r} - FK \\ &= \frac{(53,13)^2 + (56,00)^2 + (57,45)^2}{3 \times 3} - 1.027,75 \\ &= 1,08 \end{aligned}$$

Lampiran 19. (Lanjutan)**5. Jumlah Kuadrat Galat Perlakuan BAP (B)**

$$\begin{aligned}
 \text{JK (Galat B)} &= \sum_{i,k} \frac{Y_{i,k}^2}{p} - \text{FK} - \text{JK (B)} \\
 &= \frac{(16,64)^2 + (19,30)^2 + \dots + (19,95)^2}{3} - 1.027,75 - 1,08 \\
 &= 5,89
 \end{aligned}$$

6. Jumlah Kuadrat Perlakuan NPK (P)

$$\begin{aligned}
 \text{JK (P)} &= \sum_i \frac{Y_{j \dots}^2}{p \times r} - \text{FK} \\
 &= \frac{(58,53)^2 + (55,00)^2 + (53,05)^2}{3 \times 3} - 1.027,75 \\
 &= 1,71
 \end{aligned}$$

7. Jumlah Kuadrat Interaksi

$$\begin{aligned}
 \text{JK (B} \times \text{P)} &= \sum_{i,j} \frac{Y_{ij \dots}^2}{r} - \text{FK} - \text{JK (B)} - \text{JK (P)} \\
 &= \frac{(19,22)^2 + (16,93)^2 + \dots + (18,84)^2}{3} - 1.027,75 - 1,08 - 1,71 \\
 &= 0,68
 \end{aligned}$$

8. Jumlah Kuadrat Galat Perlakuan NPK

$$\begin{aligned}
 \text{JK (Galat P)} &= \text{JKT} - \text{JK (B)} - \text{JK (Galat B)} - \text{JK (P)} - \text{JK (B} \times \text{P)} \\
 &= 12,81 - 1,08 - 5,89 - 1,71 - 0,68 \\
 &= 3,45
 \end{aligned}$$

9. Perhitungan Kuadrat Tengah Perlakuan BAP (B)

$$\begin{aligned}
 \text{KT (B)} &= \frac{\text{JK (B)}}{B-1} = \frac{1,08}{3-1} = 0,54 \\
 \text{KT (Galat B)} &= \frac{\text{JK (Galat B)}}{r(B-1)} = \frac{5,89}{3(3-1)} = 0,98
 \end{aligned}$$

10. Perhitungan Kuadrat Tengah Perlakuan NPK (P)

$$\text{KT (P)} = \frac{\text{JK (P)}}{P-1} = \frac{1,71}{3-1} = 0,86$$

Lampiran 19. (Lanjutan)**11. Perhitungan Kuadrat Tengah Interaksi**

$$KT (B \times P) = \frac{JK (B \times P)}{(B-1)(P-1)} = \frac{0,68}{(3-1)(3-1)} = 0,17$$

12. Perhitungan Kuadrat Tengah Galat

$$KT (Galat P) = \frac{JK (Galat P)}{r(B-1)(P-1)} = \frac{3,45}{3(3-1)(3-1)} = 0,29$$

13. F-Hitung Perlakuan BAP (B)

$$F\text{-Hitung (B)} = \frac{KT (B)}{KT (Galat B)} = \frac{0,54}{0,98} = 0,55$$

14. F-Hitung Perlakuan NPK (P)

$$F\text{-Hitung (P)} = \frac{KT (P)}{KT (Galat P)} = \frac{0,86}{0,29} = 2,98$$

15. F-Hitung Perlakuan Interaksi

$$F\text{-Hitung (B} \times P) = \frac{KT (B \times P)}{KT (Galat P)} = \frac{0,17}{0,29} = 0,59$$

Tabel ANOVA

SK	DB	JK	KT	Fhit	F tab 0.05
B	2	1,08	0,54	0,55 ^{tn}	5,14
Galat B	6	5,89	0,98		
P	2	1,71	0,86	2,98 ^{tn}	3,89
BxP	4	0,68	0,17	0,59 ^{tn}	3,26
Galat	12	3,45	0,29		
Total	26	12,81			

Keterangan : * = signifikan, tn = tidak signifikan

16. Koefisien Keragaman (KK)

$$KK (B) = \frac{\sqrt{KT (Galat B)}}{\bar{X}} \times 100\% = \frac{\sqrt{0,98}}{6,17} \times 100\% = 16,05\%$$

$$KK (P) = \frac{\sqrt{KT (Galat P)}}{\bar{X}} \times 100\% = \frac{\sqrt{0,29}}{6,17} \times 100\% = 8,70\%$$

Lampiran 20. Analisis Ragam Data Penyusutan Bobot Umbi

Petak Utama	Petak Anakan	Ulangan			Total Interaksi	Rata - rata
		I	II	III		
B0	P1	20,57	18,36	16,00	54,93	18,31
	P2	19,02	18,17	17,15	54,34	18,11
	P3	19,48	17,70	17,02	54,20	18,07
	Jumlah	59,07	54,23	50,17	163,47	
	Rata-rata	19,69	18,08	16,72		18,16
B1	P1	17,04	17,99	21,79	56,82	18,94
	P2	18,67	16,81	16,42	51,90	17,30
	P3	15,19	16,80	18,25	50,24	16,75
	Jumlah	50,90	51,60	56,46	158,96	
	Rata-rata	16,97	17,20	18,82		17,66
B2	P1	19,02	12,69	18,31	50,02	16,67
	P2	17,92	19,67	15,27	52,86	17,62
	P3	22,11	19,25	20,63	61,99	20,66
	Jumlah	59,05	51,61	54,21	164,87	
	Rata-rata	19,68	17,20	18,07		18,32
Jumlah		169,02	157,44	160,84	487,30	
Rata-rata		18,16	17,66	18,32		18,05

Keterangan. B0 : 0 ppm, B1 : 50 ppm, B2 : 100 ppm, P1 : 1,25 ton/ha, P2 : 2,50 ton/ha, P3 : 3,75 ton/ha

Lampiran 20. (Lanjutan)

Petak Utama	Anak Petak			Total	Rata-rata
	P1	P2	P3		
0 ppm (B0)	54,93	54,34	54,20	163,47	54,49
50 ppm (B1)	56,82	51,90	50,24	158,96	52,99
100 ppm (B2)	50,02	52,86	61,99	164,87	54,96
Total	161,77	159,10	166,43	162,43	
Rata-rata	17,97	17,68	18,49		54,14

1. Perhitungan Derajat Bebas (db)

$$B \text{ (BAP)} = 3$$

$$P \text{ (NPK)} = 3$$

$$db \text{ BAP (B)} = B - 1 = 3 - 1 = 2$$

$$db \text{ Galat B} = (B - 1) \times r = (3 - 1) \times 3 = 6$$

$$db \text{ NPK (P)} = P - 1 = 3 - 1 = 2$$

$$db \text{ Interaksi (B} \times \text{P)} = (B - 1)(P - 1) = (3 - 1)(3 - 1) = 2 \times 2 = 4$$

$$db \text{ Galat P} = B(r - 1)(P - 1) = 3(3 - 1)(3 - 1) = 3 \times 2 \times 2 = 12$$

$$db \text{ Total} = BPr - 1 = 3 \times 3 \times 3 - 1 = 26$$

2. Faktor Koreksi (FK)

$$FK = \frac{Y_{\dots}^2}{B \times P \times r} = \frac{(487,30)^2}{3 \times 3 \times 3} = 8.794,86$$

3. Perhitungan Jumlah Kuadrat Total (JK)

$$\begin{aligned} JKT &= \sum Y_{ij}^2 - FK \\ &= (20,57)^2 + (18,36)^2 + \dots + (20,63)^2 - 8.794,86 \\ &= 109,70 \end{aligned}$$

4. Jumlah Kuadrat Perlakuan BAP (B)

$$\begin{aligned} JK(B) &= \sum_i \frac{Y_{i\cdot\cdot}^2}{B \times r} - FK \\ &= \frac{(163,47)^2 + (158,96)^2 + (164,87)^2}{3 \times 3} - 8.794,86 \\ &= 2,12 \end{aligned}$$

Lampiran 20. (Lanjutan)**5. Jumlah Kuadrat Galat Perlakuan BAP (B)**

$$\begin{aligned}
 \text{JK (Galat B)} &= \sum_{i,k} \frac{Y_{i,k}^2}{p} - \text{FK} - \text{JK (B)} \\
 &= \frac{(59,07)^2 + (54,23)^2 + \dots + (54,21)^2}{3} - 8.794,86 - 2,12 \\
 &= 28,85
 \end{aligned}$$

6. Jumlah Kuadrat Perlakuan NPK (P)

$$\begin{aligned}
 \text{JK (P)} &= \sum_i \frac{Y_{j \dots}^2}{p \times r} - \text{FK} \\
 &= \frac{(161,77)^2 + (159,10)^2 + (166,43)^2}{3 \times 3} - 8.794,86 \\
 &= 3,06
 \end{aligned}$$

7. Jumlah Kuadrat Interaksi

$$\begin{aligned}
 \text{JK (B} \times \text{P)} &= \sum_{i,j} \frac{Y_{ij \dots}^2}{r} - \text{FK} - \text{JK (B)} - \text{JK (P)} \\
 &= \frac{(54,93)^2 + (54,34)^2 + \dots + (61,99)^2}{3} - 8.794,86 - 2,12 - 3,06 \\
 &= 30,93
 \end{aligned}$$

8. Jumlah Kuadrat Galat Perlakuan NPK

$$\begin{aligned}
 \text{JK (Galat P)} &= \text{JKT} - \text{JK (B)} - \text{JK (Galat B)} - \text{JK (P)} - \text{JK (B} \times \text{P)} \\
 &= 109,70 - 2,12 - 28,85 - 3,06 - 30,93 \\
 &= 44,74
 \end{aligned}$$

9. Perhitungan Kuadrat Tengah Perlakuan BAP (B)

$$\begin{aligned}
 \text{KT (B)} &= \frac{\text{JK (B)}}{B-1} = \frac{2,12}{3-1} = 1,06 \\
 \text{KT (Galat B)} &= \frac{\text{JK (Galat B)}}{r(B-1)} = \frac{28,85}{3(3-1)} = 4,81
 \end{aligned}$$

10. Perhitungan Kuadrat Tengah Perlakuan NPK (P)

$$\text{KT (P)} = \frac{\text{JK (P)}}{P-1} = \frac{3,06}{3-1} = 1,53$$

Lampiran 20. (Lanjutan)**11. Perhitungan Kuadrat Tengah Interaksi**

$$KT (B \times P) = \frac{JK (B \times P)}{(B-1)(P-1)} = \frac{30,93}{(3-1)(3-1)} = 7,73$$

12. Perhitungan Kuadrat Tengah Galat

$$KT (Galat P) = \frac{JK (Galat P)}{r(B-1)(P-1)} = \frac{44,74}{3(3-1)(3-1)} = 3,73$$

13. F-Hitung Perlakuan BAP (B)

$$F\text{-Hitung (B)} = \frac{KT (B)}{KT (Galat B)} = \frac{1,06}{4,81} = 0,22$$

14. F-Hitung Perlakuan NPK (P)

$$F\text{-Hitung (P)} = \frac{KT (P)}{KT (Galat P)} = \frac{1,53}{3,73} = 0,41$$

15. F-Hitung Perlakuan Interaksi

$$F\text{-Hitung (B} \times P) = \frac{KT (B \times P)}{KT (Galat P)} = \frac{7,73}{3,73} = 2,07$$

Tabel ANOVA

SK	DB	JK	KT	Fhit	F tab 0.05
B	2	2,12	1,06	0,22 ^{tn}	5,14
Galat B	6	28,85	4,81		
P	2	3,06	1,53	0,41 ^{tn}	3,89
BxP	4	30,93	7,73	2,07 ^{tn}	3,26
Galat	12	44,74	3,73		
Total	26	109,70			

Keterangan : * = signifikan, tn = tidak signifikan

16. Koefisien Keragaman (KK)

$$KK (B) = \frac{\sqrt{KT (Galat B)}}{\bar{X}} \times 100\% = \frac{\sqrt{4,81}}{18,05} \times 100\% = 12,15\%$$

$$KK (P) = \frac{\sqrt{KT (Galat P)}}{\bar{X}} \times 100\% = \frac{\sqrt{3,73}}{18,05} \times 100\% = 10,70\%$$

Lampiran 21. Dokumentasi Penelitian



Persiapan Tanah pada Polibag



Pemberian Pupuk Kandang Kambing



Pemberian Fungisida pada Benih Umbi



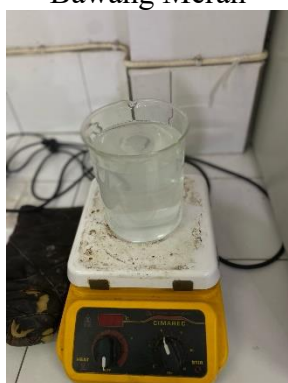
Penanaman Benih Umbi Bawang Merah



Pemberian Kapur Dolomit



Pengaplikasian Pupuk NPK



Pengenceran BAP



Pengaplikasian BAP dengan *Knapsack Sprayer*



Penyemprotan Fungisida

Lampiran 21. (Lanjutan)



Pengeringan Tanah
untuk Analisis Tanah
Awal



Pengamatan Pertumbuhan
Tanaman Mingguan



Pemanenan Bawang
Merah kv. Bima Brebes



Penimbangan Berat
Segar Bawang Merah

Lampiran 22. Dokumentasi Tanaman

B0P1



B0P2



B0P3



B1P1



B1P2



B1P3



B2P1



B2P2



B2P3

RIWAYAT HIDUP



Penulis bernama lengkap Dhiya Ulhaq, lahir di Kota Padang pada tanggal 20 Maret 2003. Penulis merupakan anak pertama dari empat bersaudara, putri dari Bapak Jofridon dan Ibu Des Mariani. Penulis menyelesaikan pendidikan dasar di SDN Mojosari Kabupaten Mojokerto lulus pada tahun 2016, sekolah menengah pertama di SMPIT Al – Anwar Kabupaten Mojokerto lulus pada tahun 2019 dan sekolah menengah atas di MAN 1 Mojokerto Kabupaten Mojokerto lulus pada tahun 2022.

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