



**Farmer :**

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**10 Mar. - 10 Jun. 2020**

**Demo Plot # 1**

**Crops : P o t a t o**

**Location of Demo Plot : Pasir Angling, Lembang  
West Java – Indonesia**

**by Google**

**Maps <https://maps.google.com/?q=-6.822335,107.707344>**



*P o t a t o*

*Land Preparation*

*16 Feb. – 9 Mar. 2020*

- Basic fertilizer :*
- Chicken Manure*
- Vermicompost*
- Ponska (N P K)*
- Pospat (TSP)*
- Nitrogen (Urea-ZA)*
- Soil Conditioner*

*Total Area 1098 m<sup>2</sup>*

*Konvensional*

*Integrated*



**P o t a t o**

**P l a n t i n g**

**10 Mar. 2020 (0 DAP)**

**Local Seeds (G-1) : 200 kg**  
**Plant. Dist. : 40 X 40 CM**  
**Integrated : 2152 Plants**  
**Konventional : 2240 Plants**

	<b><u>Basic fertilizer :</u></b>	
<b>3375 kg</b>	<b>Chicken Manure</b>	<b>3375 kg</b>
<b>274.5 kg</b>	<b>Vermicompost</b>	<b>0 kg</b>
<b>18.75 kg</b>	<b>Ponska (NPK)</b>	<b>25 kg</b>
<b>7.5 kg</b>	<b>Pospat (TSP)</b>	<b>10 kg</b>
<b>43.75 kg</b>	<b>Nitrogen (Urea + ZA)</b>	<b>87.50 kg</b>
<b>0.22 kg</b>	<b>Soil Conditioner</b>	<b>0 kg</b>

**Integrated**

**Konventional**



**P o t a t o**

**M a i n t e n a n c e**

**5 Apr. 2020 (26 DAP)**



**Top View**



**Bottom View**

**Maintenance fertilizer :**

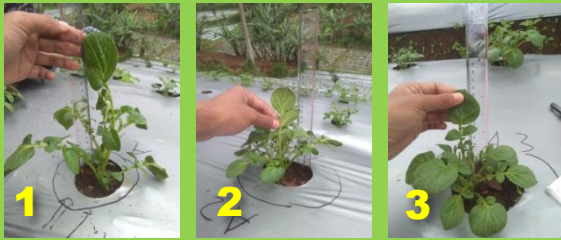
<b>37.5 kg</b>	<b>Mutiara (NPK)</b>	<b>50 kg</b>
<b>0 kg</b>	<b>Ponska (NPK)</b>	<b>25 kg</b>
<b>12.5 kg</b>	<b>Pottasium (KCL)</b>	<b>12.5 kg</b>
<b>25 kg</b>	<b>Pospat (TSP)</b>	<b>25 kg</b>
<b>0 kg</b>	<b>Nitrogen (ZA)</b>	<b>25 kg</b>
<b>0 kg</b>	<b>Boron</b>	<b>25 kg</b>
<b>1.267 kg</b>	<b>Organic Fertilizer</b>	<b>0 kg</b>
	<b>Pesticide</b>	

**Integrated**



**Konvensional**

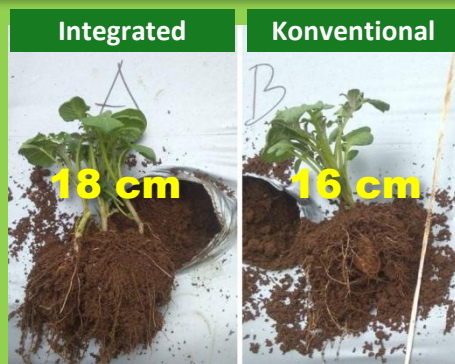




**Konventional (sampling 1 – 10)**



**Integrated (sampling 1 – 10)**



*P o t a t o*

*M o n i t o r i n g   D a t a*

*5 Apr. 2020 (26 DAP)*

26 DAP	Plant High(cm)		Buds	
	I	K	I	K
1.	18.0	27.5	1	2
2.	12.0	19.5	2	3
3.	19.0	16.0	1	2
4.	18.0	20.0	7	2
5.	16.0	21.5	3	1
6.	7.0	8.0	2	5
7.	19.5	22.0	4	3
8.	19.0	20.0	2	3
9.	15.0	19.5	1	3
10.	23.5	22.0	4	4
	16.7	19.6	2.7	2.7



**Integrated**

**Konvensional**



35 DAP	Plant High(cm)		Buds	
	I	K	I	K
1.	53.0	57.0	3	2
2.	53.0	65.0	3	4
3.	40.0	51.0	1	2
4.	48.0	70.0	5	3
5.	50.0	56.0	3	1
6.	39.0	55.0	2	6
7.	55.0	50.0	4	5
8.	40.0	44.0	2	2
9.	50.0	62.0	1	4
10.	52.0	65.0	4	7
	48.0	57.5	2.8	3.6

*P o t a t o*

*M a i n t e n a n c e*

*14 Apr. 2020 (35 DAP)*



*P o t a t o*

*M a i n t e n a n c e*

*14 Apr. 2020 (35 DAP)*

*Extreme weather, 10 – 15 %  
of the total area affected by  
pytophtora (stem rot),  
carried out intensive  
spraying of pesticides every  
5 days*

*P o t a t o*  
*M a i n t e n a n c e*  
*20 Apr. 2020 (45 DAP)*



**Integrated**



**Konventionel**





*P o t a t o*

*M a i n t e n a n c e*

*5 - 27 May. 2020 (55 - 74 DAP)*

**Integrated**



**Konventionel**



***fusarium & pytophthora attacks***

***4.6 - 5 % of population***

***10 - 12 % of population***



***high rainfall, bad weather,  
curative application of fungicide per 5 days***



**P o t a t o**  
**Save the Wilting Plants**  
**28 May. 2020 (75 DAP)**

	<i>Integrated</i>	<i>Konvensional</i>
<i>Number of Plants</i>	98	250
<i>Weight Tuber (kg)</i>	42	80
<i>Broken (kg)</i>	15.3	50.3
<i>Good Fruit (kg)</i>	19.0	31.0



*P o t a t o*

*Waiting for Harvest*

*3 Jun. 2020 (85 DAP)*



**Integrated**

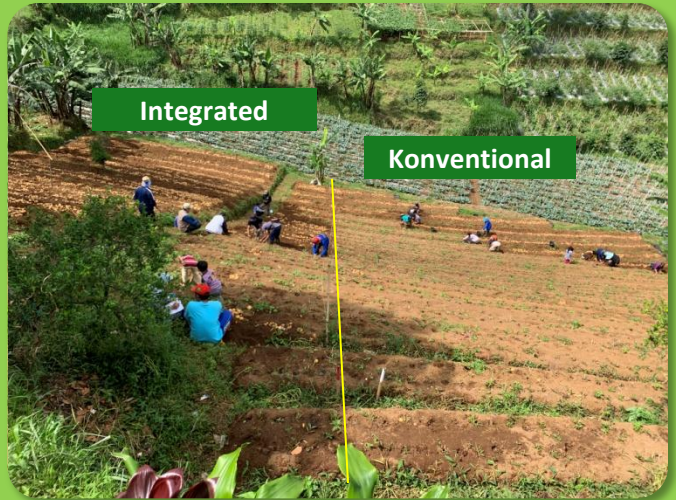
**The canopy and leaves are still upright and green**



**Konventional**

**The leaves dry faster**





*P o t a t o*  
*H a r v e s t*  
*10 Jun. 2020 (92 DAP)*



**Integrated (sampling 1 – 10)**



**Konventional (sampling 1 – 10)**



92 DAP	Integ. W (kg)	Konv. W (kg)
1.	0.825	0.955
2.	0.975	1.020
3.	1.580	0.400
4.	0.770	1.670
5.	1.330	1.850
6.	1.350	0.560
7.	0.805	0.925
8.	1.300	1.175
9.	1.240	0.630
10.	1.380	1.650
	1.156	1.083

*Potato*  
*Harvest Data*  
*10 Jun. 2020 (92 DAP)*

# P o t a t o

## Summary of Results Data

Growth/ Yield	Integrated					Konventional				
	P. High(cm)		Buds		Tub.	P. High(cm)		Buds		Tub.
	26 DAP	35 DAP	26 DAP	35 DAP	W (kg)	26 DAP	35 DAP	26 DAP	35 DAP	W (kg)
1.	18.0	53.0	1	3	0.825	27.5	57.0	2	2	0.955
2.	12.0	53.0	2	3	0.975	19.5	65.0	3	4	1.020
3.	19.0	40.0	1	1	1.580	16.0	51.0	2	2	0.400
4.	18.0	48.0	7	5	0.770	20.0	70.0	2	3	1.670
5.	16.0	50.0	3	3	1.330	21.5	56.0	1	1	1.850
6.	7.0	39.0	2	2	1.350	8.0	55.0	5	6	0.560
7.	19.5	55.0	4	4	0.805	22.0	50.0	3	5	0.925
8.	19.0	40.0	2	2	1.300	20.0	44.0	3	2	1.175
9.	15.0	50.0	1	1	1.240	19.5	62.0	3	4	0.630
10.	23.5	52.0	4	4	1.380	22.0	65.0	4	7	1.650
	16.7	48.0	2.7	2.8	1.156	19.6	57.5	2.7	3.6	1.083

Harvest Data	Integrated	Konventional
Grade A (kg)	428	336
Grade B, C (kg)	500	725
Seeds (kg)	500	200
Wilting Plants (kg) (young harvest)	19	31
Total (kg)	1447	1292

# P o t a t o

## Summary of Results Data

<b>Selling Price (Rp)</b>	<b>Integrated</b>	<b>Konvensional</b>
<i>Grade - A (11.000)</i>	<b>(428) 4.708.000</b>	<b>(336) 3.696.000</b>
<i>Grade - B, C (9.000)</i>	<b>(500) 4.500.000</b>	<b>(725) 6.525.000</b>
<i>Seeds (22.000)</i>	<b>(500) 10.000.000</b>	<b>(200) 4.400.000</b>
<i>Wilting Plants (7.000 ) (young harvest)</i>	<b>(19) 133.000</b>	<b>(31) 217.000</b>
<b>Total</b>	<b>19.341.000</b>	<b>14.838.000</b>

<b>Harvest &amp; Cost Data</b>	<b>Integrated</b>	<b>Konvensional</b>
<i>Population (plants)</i>	<b>2152</b>	<b>2240</b>
<i>Yield (kg)</i>	<b>1447</b>	<b>1292</b>
<i>Yield per ha (ton)</i>	<b>26.9</b>	<b>23.1</b>
<b>Income = 34,179,000.-</b>		
<b>Land Preparation Costs (Rp.)</b>	<b>6,335,635</b>	<b>6,027,500</b>
<b>Maintenance Costs (Rp.)</b>	<b>2,590,750</b>	<b>4,126,500</b>
<b>Total Cost (Rp.)</b>	<b>8,926,385</b>	<b>10,154,000</b>
<i>Yield per plant (kg)</i>	<b>0.672</b>	<b>0.577</b>
<i>Cost per Plant (Rp.)</i>	<b>4,147.9</b>	<b>4,533.0</b>
<i>Cost (Rp./ha/year)</i>		
<i>Profit (Rp./ha/year)</i>		

# Potato

## Post Harvest (ph) Data

### Integrated

### Konventional



0 day post harvest (dph)

	Integrated	Konventional
	W (kg)	W (kg)
0 dph	1.005	1.020
14 dph	0.995	0.965
loss	0.1 %	5.4 %



14 day post harvest (dph)





# Potato

## Land Preparation - Planting Costs (Without Leasing Land & Labor)

1											
potato											
1098 M2											
4392 plants											
Needs	konvensional 560 M2				integrated 538 M2				TOTAL		
	Q	hrg	Rp.	Q	hrg	Rp.	Q	Rp.			
seed / Nursery	100.0	kg	35,000.00	3,500,000.00	100.0	kg	35,000.00	3,500,000.00	200.0	kg	7,000,000.00
Mulsa	1.0	roll	650,000.00	650,000.00	1.0	roll	650,000.00	650,000.00	2.0	roll	1,300,000.00
Vermicompost	-	kg	-	-	274.5	kg	1,000.00	274,500.00	274.5	kg	274,500.00
chicken manure	3,375.0	kg	333.33	1,125,000.00	3,375.0	kg	333.33	1,125,000.00	6,750.0	kg	2,250,000.00
humic acid	-	kg	-	-	0.22	kg	600,000.00	131,760.00	0.22	kg	131,760.00
urea	25.0	kg	2,300.00	57,500.00	18.8	kg	2,300.00	43,125.00	43.8	kg	100,625.00
ZA	50.0	kg	5,000.00	250,000.00	37.5	kg	5,000.00	187,500.00	87.5	kg	437,500.00
TSP	75.0	kg	5,000.00	375,000.00	56.3	kg	5,000.00	281,250.00	131.3	kg	656,250.00
NPK Ponska	25.0	kg	2,800.00	70,000.00	18.75	kg	2,800.00	52,500.00	43.8	kg	122,500.00
Seed Treatment											
humic acid	-	kg	-	-	0.10	kg	600,000.00	60,000.00	0.10	kg	60,000.00
Herbagreen Protect F	-	kg	-	-	0.05	kg	600,000.00	30,000.00	0.05	kg	30,000.00
				<b>6,027,500.00</b>				<b>6,335,635.00</b>			<b>12,363,135.00</b>

## Maintenance Costs (Without Labor)

1											
potato											
1098 M2											
4392 plants											
Needs	konvensional 560 M2				integrated 538 M2				TOTAL		
	Q	hrg	Rp.	Q	hrg	Rp.	Q	Rp.			
ZA	50.0	kg	4,000.00	200,000.00	-	kg	-	-	50.0	kg	200,000.00
TSP	25.0	kg	7,500.00	187,500.00	25.0	kg	7,500.00	187,500.00	50.0	kg	375,000.00
KCL	12.5	kg	8,000.00	100,000.00	12.5	kg	8,000.00	100,000.00	25.0	kg	200,000.00
NPK Mutiara Sprinter	50.0	kg	10,000.00	500,000.00	37.5	kg	10,000.00	375,000.00	87.5	kg	875,000.00
NPK Ponska	25.0	kg	3,000.00	75,000.00	-	kg	-	-	25.0	kg	75,000.00
Boron	25.0	kg	9,000.00	225,000.00	-	kg	-	-	25.0	kg	225,000.00
Humic Acid	-	kg	-	-	0.350	kg	600,000.00	210,000.00	0.350	kg	210,000.00
Spray :											
Herbagreen Z20	-	kg	-	-	0.412	kg	600,000.00	247,050.00	0.412	kg	247,050.00
Herbagreen Protect F	-	kg	-	-	0.494	kg	600,000.00	296,460.00	0.494	kg	296,460.00
Herbagreen Fluisan	-	kg	-	-	0.011	Ltr	4,000,000.00	43,920.00	0.011	Ltr	43,920.00
Pesticide											
1. Dursban 200 EC, 500 ML	300.0	ML	100,000.00	60,000.00	200.0	ML	100,000.00	40,000.00	500.0	ML	100,000.00
2. Matador 25 EC , 60 ML	1.0	Btl	65,000.00	65,000.00	-	ML	-	-	1.0	ML	65,000.00
3. Siklon, 25 gr	2.0	Schts	47,000.00	94,000.00	1.0	Schts	47,000.00	47,000.00	3.0	Schts	141,000.00
4. Spontan 400 SL, 500 ML	1.0	Btl	60,000.00	60,000.00	1.0	Btl	60,000.00	60,000.00	2.0	Btl	120,000.00
5. Tanzeb 80 WP, 1 kg	9.0	Kg	70,000.00	630,000.00	6.0	Kg	70,000.00	420,000.00	15.0	Kg	1,050,000.00
6. Pitoclor 82.5 WG, 500 gr	5.0	Pack	130,000.00	650,000.00	3.0	Pack	130,000.00	390,000.00	8.0	Pack	1,040,000.00
7. Captive 200 SC, 500 ML	6.0	Btl	100,000.00	600,000.00	-	Btl	-	-	6.0	Btl	600,000.00
8. Gembí (Btl)	2.0	Btl	220,000.00	440,000.00	-	Btl	-	-	2.0	Btl	440,000.00
9. Score 250 EC, 250 ML	1.0	Btl	165,000.00	165,000.00	-	Btl	-	-	1.0	Btl	165,000.00
10. Herbagreen Protect V	-	Ltr	-	-	0.165	Ltr	600,000.00	98,820.00	0.165	Ltr	98,820.00
11. BOOSTER, 250 ML	1.0	Btl	75,000.00	75,000.00	1.0	Btl	75,000.00	75,000.00	2.0	Btl	150,000.00
				<b>4,126,500.00</b>				<b>2,590,750.00</b>			<b>6,717,250.00</b>

# Potato

% of Pests & Diseases																
Pests / Diseases	Konvensional (%)							Integrated (%)								
	15 DAP	30 DAP	45 DAP	60 DAP	75 DAP	90 DAP	105 DAP	15 DAP	30 DAP	45 DAP	60 DAP	75 DAP	90 DAP	105 DAP		
1 Pytophthora (stem rot)	10-15	5-10	< 5	-	-	-	-	10-15	5-10	< 5	-	-	-	-		
2 Fusarium (wilting)	-	-	4	4.5	5	-	-	-	-	5	10	12	-	-		
3 Caterpillar	-	15-20	10	5	-	-	-	-	15-20	10	5	-	-	-		

Application Planting - Harvesting						
Konvensional : 560 M2						
TIME		Fertilization - Spraying			Immersed / Flush the Fertilizer	Spraying of Pesticide - Fertilizer
DATE	DAP	Immersed	Flush	Spray		
	12			Pesticides		
	19			Pesticides		
	20		NPK Sprinter Boron		NPK Sprinter : 7.5 kg Boron : 5 kg	
	25			Pesticides		
	35	NPK Sprinter NPK Ponska KCL TSP ZA Boron			NPK Sprinter : 42.5 kg NPK Ponska : 25 kg KCL : 12.5 kg TSP : 25 kg ZA : 50 kg Boron : 20 kg	
	34			Pesticides		
	40			Pesticides		
	45			Pesticides		
	50			Pesticides		
	55			Pesticides		
	60			Pesticides		
	65			Pesticides		
	70			Pesticides		
	75			Pesticides		



# Potato

## Application Planting - Harvesting

Integrated : 538 M2

TIME		Fertilization - Spraying			Immersed / Flush the Fertilizer	Spraying of Pesticide - Fertilizer
DATE	DAP	Immersed	Flush	Spray		
	0			Humic Acid 85 %		Dosis : 0.100 kg
	15			HG Protect F (1)		HG Protect F : 0.050 kg
	19			HG Protect F (2) Mix HG Fluisan (1)		HG Protect F : 0.082 kg Mix HG Fluisan : 0.0055 Ltr
	20		TSP ; KCL ; Humic Acid 85 %		Humic acid : 0.050 kg Ke KCL : 12.5 kg ; TSP : 25 kg NPK Sprinter 7.5 kg	
	25			HG Z20 (1) Mix HG Protect V (1) Mix 1 Fungi		HG Z20 : 0.075 kg HG Protect V : 0.0825 Ltr Mix 1 Fungi, dss Normal
	35	NPK Sprinter Humic Acid 85%			NPK Sprinter 30 kg Humic acid : 0.300 kg	
	34			HG Protect F (3) Mix 1 Incek		HG Protect F : 0.082 kg Mix 1 Incek, dss normal
	40			HG Z20 (2) Mix 1 Incek + 1 Fungi		HG Z20 : 0.075 kg Mix 1 Incek + 1 Fungi, dss Normal
	45			HG Protect F (4) MIX HG Fluisan (2)		Herbagreen Protect F : 0.082 kg Mix HG Fluisan ; 0.0055 Ltr
	50			HG Z20 (3) Mix HG Protect V (2) Mix 1 Fungi		HG Z20 : 0.075 kg HG Protect V : 0.0825 Ltr Mix 1 Fungi, dss Normal
	55			HG Protect F (5) Mix 1 Incek		HG Protect F : 0.082 kg Mix 1 Incek, dss normal
	60			HG Z20 (4) Mix 1 Incek + 1 Fungi		HG Z20 : 0.075 kg Mix 1 Incek + 1 Fungi, dss Normal
	65			HG Protect F (6) Mix 1 Fungi		HG Protect F : 0.082 kg Mix 1 Fungi, dss Normal
	70			HG Z20 (5) Mix 1 Incek + 1 Fungi		HG Z20 : 0.110 kg Mix 1 Incek + 1 Fungi, dss Normal
	75			HG Protect F (7) Mix 1 Incek		HG Protect F : 0.082 kg Mix 1 Incek, dss normal