



Trainer :

Efan Driyana

*Bukanagara RT 02/02, PagerWangi, Lembang,
West Java - Indonesia*

efandriyana@gmail.com

+62822403 70949

Farmer :

Furqon Permana Sidiq

*Kp. Cisalasih RT 03/05, Cikidang, Lembang, West
Java - Indonesia*

FurqonPermana55@gmail.com

+6281214540083

11 Mar. – 14 Jun. 2020

Demo Plot # 6

Crops : T o m a t o

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

by Google Maps

<https://maps.google.com/?q=-6.795901,107.657326>



Total Land 620 m²



T o m a t o

Land Preparation

25 Feb. – 10 Mar. 2020





Integrated



Field - 1



Konventional

Basic fertilizer :

3,375 kg	Chicken manure	3,375 kg
0 kg	Vermicompost	155 kg
150 kg	N (Urea - ZA)	112.5 kg
100 kg	Pospat (TSP)	75 kg
0 kg	Organic Fertilizer	1 kg
	Pesticide	

Integrated



Field - 2

Konventional



Tomato

Planting

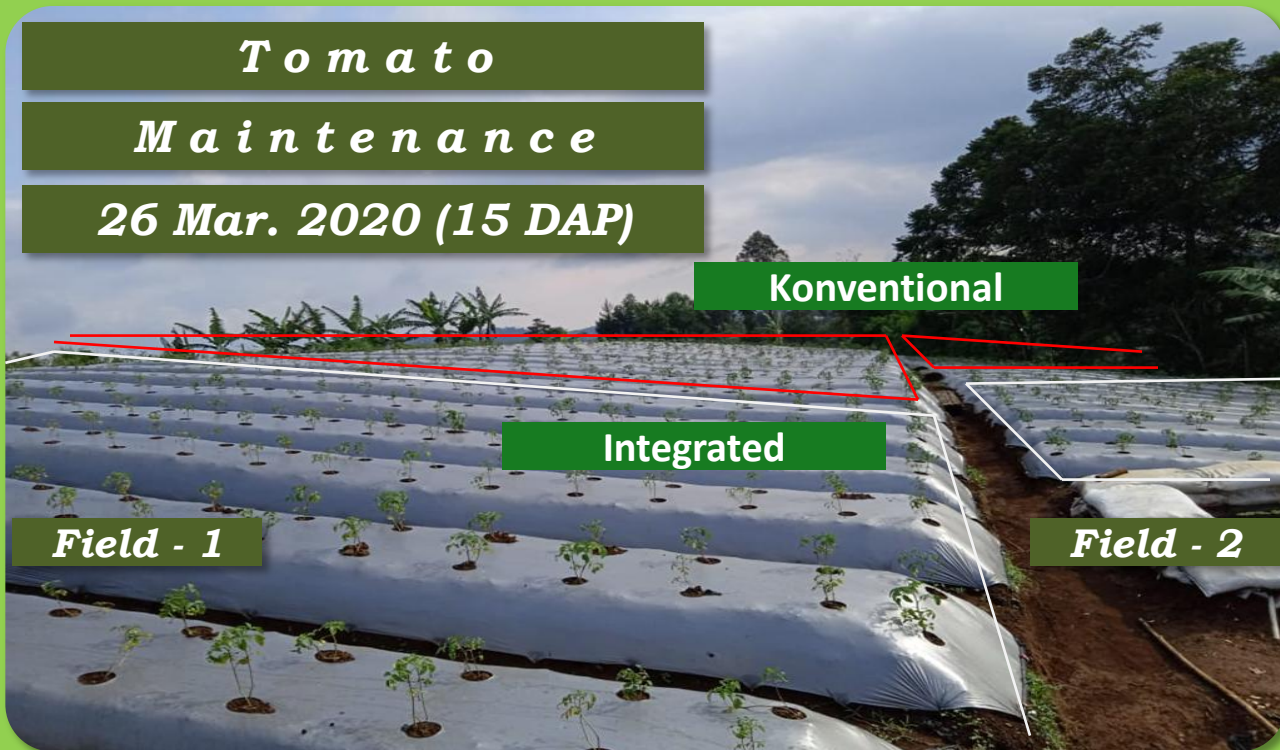
11 Mar. 2020 (0 DAP)

Seeds : F1 / Hibrid

Plant. Dist. : 40 X 40 CM

Integrated : 936 Plants

Konventional : 1104 Plants



Tomato

Maintenance

26 Mar. 2020 (15 DAP)

Konvensional

Integrated

Field - 1

Field - 2

*early planting weather is not supportive, high rainfall, causing slow initial growth, death and replanting
720 plants (35 %)*

Further maintenance is carried out specifically,

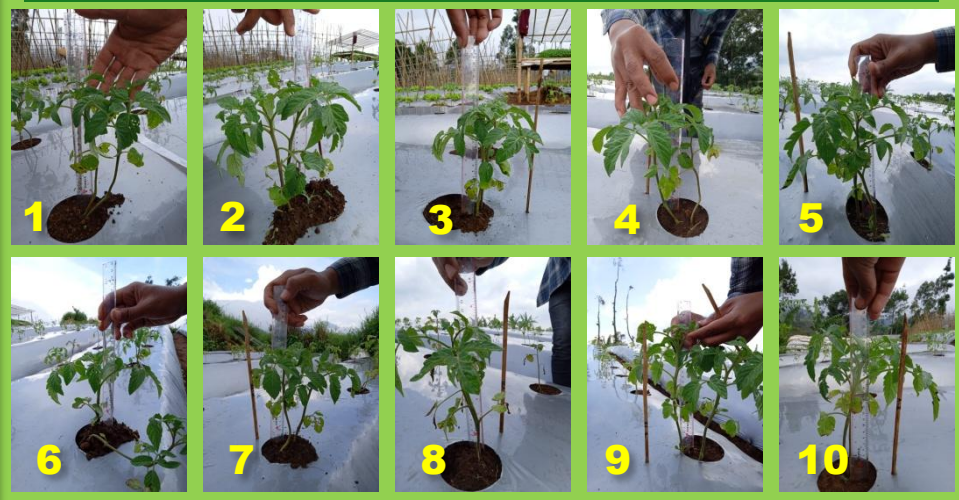
Konvensional Plot : increase fertilization input ; more intensif pesticides application

Integrated plot : adding fertilization input ; maximizing organic technology and adding pesticides

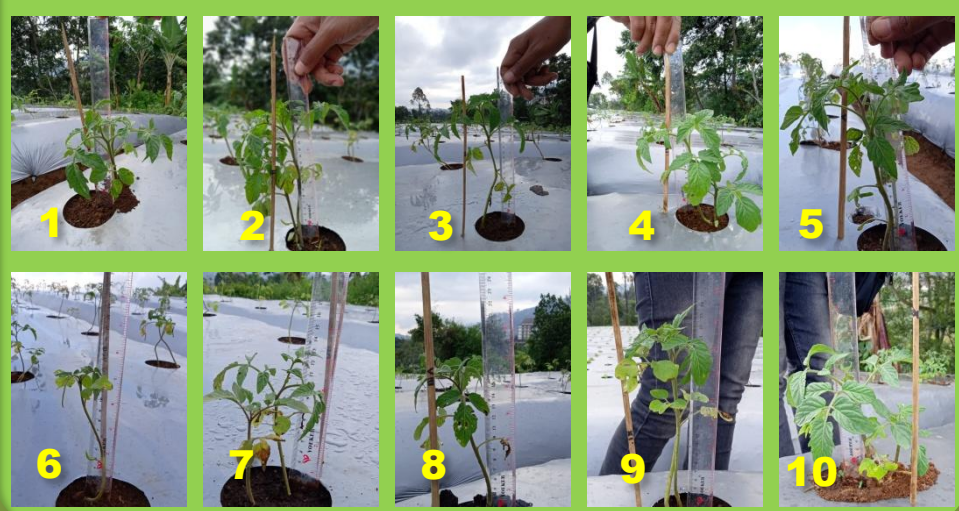
Maintenance fertilizer :

225 kg	NPK (mutiara-ponska)	106.3 kg
50 kg	N (urea)	0 kg
1 kg	N (Rosasol N)	0 kg
7 kg	KNO - Red	4 kg
7 kg	KNO - White	4 kg
0.6 kg	Organic Fertilizer	1.72 kg
	Pesticide	

Integrated (sampling 1 – 10)



Konvensional (sampling 1 – 10)



Tomato
Observation Data
26 Mar. 2020 (15 DAP)

15 DAP	Plant High (cm)	
	Integrated	Konvensional
1.	22	18.5
2.	20	22
3.	21	26
4.	22	19
5.	24	18
6.	15.5	13
7.	19	12
8.	21	17
9.	25	24
10.	24	15
	21.4	18.5



Konvensional **Integrated**
32 cm **31 cm**



Tomato

Observation Data

10 Apr. 2020 (30 DAP)



Monitoring Data

30 DAP	Plant High (cm)		Branch		Young Fruits	
	Integ.	Konv.	Integ.	Konv.	Integ.	Konv.
1	72	57	10	13	6	15
2	49	61	19	11	21	11
3	68	60	13	21	15	14
4	64	61	15	14	12	15
5	77	60	22	13	26	12
6	62	36	19	5	26	0
7	67	25	14	8	15	4
8	65	37	17	9	15	5
9	63	50	22	11	22	5
10	70	57	20	12	32	14
	65.7	50.4	17.1	11.7	19	9.6

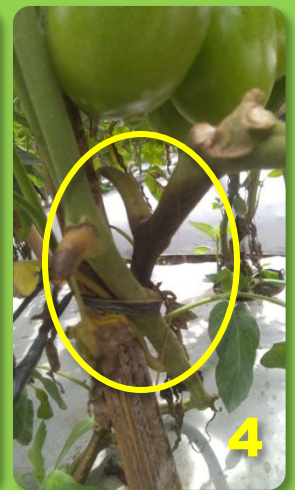


Tomato

Maintenance

1 June 2020 (82 DAP)

pytophthora, colletotrichum and xanthomonas attacks



1 & 4 : heavy attack on konventional plot

2 & 3 : intermediate attacks on both plots

heliopsis, nematode and bactrocera (fruit flies) attacks



1, 2 & 3 : light attack on both plots



Integrated

Konventional



T o m a t o

Waiting for Harvest

11 June 2020 (92 DAP)



Production per Plot

	<i>Int.(kg)</i>	<i>Konv.(kg)</i>	<i>Tot.(kg)</i>	<i>Price(Rp.)</i>	<i>Income(Rp.)</i>
<i>14 June 20</i>	81	69	150	4,500.-	675,000.-
<i>17 June 20</i>	197	174	371	4,500.-	1,669,500.-
<i>20 June 20</i>	274	238	512	5,000.-	2,560,000.-
<i>23 June 20</i>	377	341	718	5,000.-	3,590,000.-
<i>26 June 20</i>	536	500	1036	5,000.-	5,180,000.-
<i>29 June 20</i>	471	431	902	4,500.-	4,059,000.-
<i>2 July 20</i>	223	199	422	2,000.-	844,000.-
<i>5 July 20</i>	132	118	250	1,500.-	375,000.-
<i>8 July 20</i>	53	47	100	1,500.-	150,000.-
	2,327	2,134	4,461		19,102,500.-

T o m a t o

H a r v e s t

14 June 2020 (95 DAP)

Tomato

Summary of Results Data

<i>Harvest & Cost Data</i>	<i>Konventional</i>	<i>Integrated</i>
<i>Population (plants)</i>	1104	936
<i>Harvested Pop. (plants)</i>	1090	934
<i>% Harvested Population</i>	98.7 %	99.7 %
<i>Total Yield (kg)</i>	2117	2344
<i>Yield per ha (ton)</i>	63.1	82.4
<i>Income 4461 kg X (Rp. 1,500 – Rp. 5,000) = Rp. 19,102,500.-</i>		
<i>Land Preparation Costs(Rp.)</i>	3,210,000	3,250,650
<i>Maintenance Costs (Rp.)</i>	3,920,550	4,272,650
<i>Total Cost (Rp.)</i>	7,130,550	7,523,300
<i>Yield per plant (kg)</i>	1.92	2.50
<i>Cost per Plant (Rp.)</i>	6,459	8,038
<i>Cost (Rp./ha/year)</i>		
<i>Profit (Rp./ha/year)</i>		



First Plan

Land Preparation - Planting Costs (without Leasing Land and Labour)

6												
tomato												
620 M2												
2040												
Needs	konvensional 335.5 M2				integrated 284.5 M2				TOTAL			
	Q		hrg	Rp.	Q		hrg	Rp.	Q		Rp.	
seed / Nursery	1,750.0	plants	250.00	437,500.00	1,750.0	plants	250.00	437,500.00	3,500.0	plants	875,000.00	
Mulsa	0.8	roll	650,000.00	487,500.00	0.8	roll	650,000.00	487,500.00	1.5	Roll	975,000.00	
Vermicompost	-	kg	-	-	155.0	kg	1,000.00	155,000.00	155.0	kg	155,000.00	
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	-	-	0.12	kg	600,000.00	74,400.00	0.12	kg	74,400.00	
urea	50.0	kg	2,300.00	115,000.00	37.5	kg	2,300.00	86,250.00	87.5	kg	201,250.00	
ZA	100.0	kg	5,000.00	500,000.00	75.0	kg	5,000.00	375,000.00	175.0	kg	875,000.00	
TSP	100.0	kg	5,000.00	500,000.00	75.0	kg	5,000.00	375,000.00	175.0	kg	875,000.00	
Carbofuran	-	kg	45,000.00	-	-	kg	45,000.00	-	-		-	
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	
				3,165,000.00				3,205,650.00			6,460,650.00	

After the Change

Land Preparation - Planting Costs (without Leasing Land and Labour)

6												
tomato												
620 M2												
2040												
Needs	konvensional 335.5 M2				integrated 284.5 M2				TOTAL			
	Q		hrg	Rp.	Q		hrg	Rp.	Q		Rp.	
seed / Nursery	1,750.0	plants	250.00	437,500.00	1,750.0	plants	250.00	437,500.00	3,500.0	plants	875,000.00	
Mulsa	0.8	roll	650,000.00	487,500.00	0.8	roll	650,000.00	487,500.00	1.5	Roll	975,000.00	
Vermicompost	-	kg	-	-	155.0	kg	1,000.00	155,000.00	155.0	kg	155,000.00	
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	-	-	0.12	kg	600,000.00	74,400.00	0.12	kg	74,400.00	
urea	50.0	kg	2,300.00	115,000.00	37.5	kg	2,300.00	86,250.00	87.5	kg	201,250.00	
ZA	100.0	kg	5,000.00	500,000.00	75.0	kg	5,000.00	375,000.00	175.0	kg	875,000.00	
TSP	100.0	kg	5,000.00	500,000.00	75.0	kg	5,000.00	375,000.00	175.0	kg	875,000.00	
Carbofuran	1.0	kg	45,000.00	45,000.00	1.0	kg	45,000.00	45,000.00	2.0		90,000.00	
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	
				3,210,000.00				3,250,650.00			6,460,650.00	

First Plan

Maintenance Cost (without Labor)

6											
tomato											
620 M2											
3000 plants											
Needs	konvensional 310 M2			integrated 310 M2			TOTAL				
	Q	hrg	Rp.	Q	hrg	Rp.	Q	Rp.			
Urea	50.0	kg	2,500.00	125,000.00	-	kg	-	-	50.0	kg	125,000.00
NPK Mutiara	75.0	kg	10,000.00	750,000.00	56.3	kg	10,000.00	562,500.00	131.3	kg	1,313,000.00
KNO Merah (2 Kg)	3.0	kg	21,400.00	64,200.00	-	kg	-	-	3.0	kg	64,000.00
KNO Putih (2 kg)	3.0	kg	24,000.00	72,000.00	-	kg	-	-	3.0	kg	72,000.00
Humic Acid	-	kg	-	-	0.60	kg	600,000.00	360,000.00	0.60	kg	360,000.00
Spraying :											
ROSASOL N (200 gr)	2.0	kg	76,000.00	152,000.00	-	kg	-	-	2.0	kg	152,000.00
Herbagreen Z20	-	kg	-	-	0.186	kg	600,000.00	111,600.00	0.186	kg	111,600.00
Herbagreen Protect F	-	kg	-	-	0.279	kg	600,000.00	167,400.00	0.279	kg	167,400.00
Herbagreen Fluisan	-	kg	-	-	0.0062	Ltr	4,000,000.00	24,800.00	0.0062	Ltr	24,800.00
Pesticides :											
1. Demolish 18 EC, 200 ML	2.0	Btl	160,000.00	320,000.00	2.0	Btl	160,000.00	320,000.00	4.0	Btl	640,000.00
2. 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
3. Antracol 70 WP, 1 Kg	1.0	kg	125,000.00	125,000.00	1.0	kg	125,000.00	125,000.00	2.0	kg	250,000.00
4. Amistartop 325 EC, 250 ML)	1.0	Btl	250,000.00	250,000.00	-	Btl	-	-	1.0	Btl	250,000.00
5. Dorum	2.0	Btl	105,000.00	210,000.00	-	Btl	-	-	2.0	Btl	210,000.00
6. Karibu 75 WP, 700 gr	2.0	Btl	110,000.00	220,000.00	-	Btl	-	-	2.0	Btl	220,000.00
7. Sorento 250 EC, 100 ML	2.0	Btl	60,000.00	120,000.00	1.0	Btl	60,000.00	60,000.00	3.0	Btl	180,000.00
8. Herbagreen Protect V	-	Ltr	-	-	0.233	Ltr	600,000.00	139,500.00	0.233	Ltr	139,500.00
9. 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
				2,577,200.00				1,992,800.00			4,570,300.00

After the Change

Maintenance Costs (without Labor)

6											
tomato											
620 M2											
3000 plants											
Needs	konvensional 335.5 M2			integrated 284.5 M2			TOTAL				
	Q	hrg	Rp.	Q	hrg	Rp.	Q	Rp.			
Urea	50.0	kg	2,500.00	125,000.00	-	kg	-	-	50.0	kg	125,000.00
NPK Mutiara	75.0	kg	10,000.00	750,000.00	56.3	kg	10,000.00	562,500.00	131.3	kg	1,313,000.00
NPK Ponska	150.0	kg	2,350.00	352,500.00	50.0	kg	2,350.00	117,500.00	200.0	kg	470,000.00
KNO Merah (2 Kg)	7.0	kg	21,400.00	149,800.00	4.0	kg	21,400.00	85,600.00	11.0	kg	64,000.00
KNO Putih (2 kg)	7.0	kg	24,000.00	168,000.00	4.0	kg	24,000.00	96,000.00	11.0	kg	264,000.00
Humic Acid	-	kg	-	-	1.10	kg	600,000.00	660,000.00	1.10	kg	660,000.00
Spraying :											
ROSASOL N (200 gr)	1.0	kg	76,000.00	76,000.00	-	kg	-	-	1.0	kg	76,000.00
Herbagreen Z20	-	kg	-	-	1.436	kg	600,000.00	861,600.00	1.436	kg	861,600.00
Herbagreen Protect F	-	kg	-	-	0.279	kg	600,000.00	167,400.00	0.279	kg	167,400.00
Herbagreen Fluisan	-	kg	-	-	0.0062	Ltr	4,000,000.00	24,800.00	0.0062	Ltr	24,800.00
Pesticides :											
1. Demolish 18 EC, 200 ML	2.0	Btl	160,000.00	320,000.00	2.0	Btl	160,000.00	320,000.00	4.0	Btl	640,000.00
2. Siklon (25 Gr)	3.0	Schts	47,000.00	141,000.00	2.0	Schts	47,000.00	94,000.00	5.0	Schts	235,000.00
3. Antracol 70 WP, 1 Kg	1.0	kg	125,000.00	125,000.00	1.0	kg	125,000.00	125,000.00	2.0	kg	250,000.00
4. Amistartop 325 EC, 250 ML)	1.0	Btl	250,000.00	250,000.00	-	Btl	-	-	1.0	Btl	250,000.00
5. Dorum	3.0	Btl	105,000.00	315,000.00	1.0	Btl	105,000.00	105,000.00	4.0	Btl	420,000.00
6. Bazooka	1.0	Btl	82,000.00	82,000.00	-	Btl	-	-	1.0	Btl	82,000.00
7. Prevathon	1.0	Btl	65,000.00	65,000.00	1.0	Btl	65,000.00	65,000.00	2.0	Btl	130,000.00
8. Tangker	1.0	Schts	80,000.00	80,000.00	-	Schts	-	-	1.0	Schts	80,000.00
9. Dithane	0.5	kg	100,000.00	50,000.00	0.5	kg	100,000.00	50,000.00	1.0	kg	100,000.00
10. Victory	1.0	kg	65,000.00	65,000.00	1.0	kg	65,000.00	65,000.00	2.0	kg	130,000.00
11. Shaaf	0.5	kg	65,000.00	32,500.00	0.5	kg	65,000.00	32,500.00	1.0	kg	65,000.00
12. Demolish	1.0	Btl	145,000.00	145,000.00	-	Btl	-	-	1.0	Btl	145,000.00
13. Amolin	1.0	Schts	115,000.00	115,000.00	-	Schts	-	-	1.0	Schts	115,000.00
14. Karibu 75 WP, 700 gr	2.0	Btl	110,000.00	220,000.00	1.0	Btl	110,000.00	110,000.00	3.0	Btl	330,000.00
15. Sorento 250 EC, 100 ML	3.0	Btl	60,000.00	180,000.00	1.0	Btl	60,000.00	60,000.00	4.0	Btl	240,000.00
16. herbicides Elang 480 SL	1.0	Btl	60,000.00	60,000.00	1.0	Btl	60,000.00	60,000.00	2.0	Btl	120,000.00
17. Herbagreen Protect V	-	Ltr	-	-	0.733	Ltr	600,000.00	439,500.00	0.733	Ltr	439,500.00
18. BOOSTER, 250 ML	1.5	Btl	75,000.00	112,500.00	1.5	Btl	75,000.00	112,500.00	3.0	Btl	225,000.00
				3,979,300.00				4,213,900.00			8,022,300.00

Fertilization

DAP	Konventional	Application	Integreated	Application
-10	- Chicken Manure - Nitrogen (urea - ZA) - Pospat (TSP 36) - NPK		- Chicken Manure - Vermicompost - Nitrogen (urea - ZA) - Pospat (TSP 36) - NPK - Soil Conditioner (humic acid)	
0	-		Humic Acid (0.100 Kg)	Flush
3	Soil Incekticide	Spread	Soil Incekticide	spread
7	Urea+NPK	Flush	NPK + Humic Acid (0.070 Kg)	Flush
14	Urea+NPK+Rosasol+KNO-Red	Flush	NPK + Humic Acid (0.070 Kg)	Flush
21	Urea+NPK+Rosasol+KNO-Red	Flush	NPK+KNO-Red+Humic Acid (0.070Kg)	Flush
28	Urea+NPK+Rosasol+KNO-Red	Flush	NPK+KNO-Red+Humic Acid (0.070Kg)	Flush
35	Urea+NPK+Rosasol+KNO-Red	Flush	NPK+KNO-Red+Humic Acid (0.070Kg)	Flush
42	Urea+NPK+Rosasol+KNO-Red	Flush	NPK+KNO-Red+Humic Acid (0.070Kg)	Flush
49	NPK, Rosasol, KNO White	Flush	NPK+KNO-Red+Humic Acid (0.070Kg)	Flush
56	NPK, Rosasol, KNO White	Flush	NPK+KNO-Red+Humic Acid (0.100Kg)	Flush
63	NPK, Rosasol, KNO White	Flush	NPK+KNO-Red+Humic Acid (0.100Kg)	Flush
70	NPK, KNO White	Flush	NPK+KNO-Red+Humic Acid (0.100Kg)	Flush
77	NPK, KNO White	Flush	NPK+KNO-Red+Humic Acid (0.100Kg)	Flush

Spraying

DAP	Konventional	Application	Integreated	Application
3	Pesticides	Spray	HG Protect F (0.050Kg)	Spray
5	Pesticides	Spray	Pesticides	Spray
10	Pesticides	Spray	HG Z20 (0.100 Kg) + HG Protect V (0.044 Ltr) Pesticides	Spray
17	Pesticides	Spray	HG Protect F (0.050Kg)	Spray
20	Pesticides	Spray	-	Spray
24	-	Spray	HG Z20 (0.100Kg)+ HG Protect V (0.047 ltr) + Pesticides	Spray
25	Pesticides	Spray	-	Spray
30	Pesticides	Spray	-	Spray
31	-	Spray	HG Fluisan	Spray
35	Pesticides	Spray	-	Spray
38	-	Spray	HG Z20 (0.100 Kg)+ HG Protect V (0.047 ltr) + Pesticides	Spray
40	Pesticides	Spray	-	Spray
45	Pesticides	Spray	HG Protect F (0.075 Kg) + Pesticides	Spray
50	Pesticides	Spray	-	Spray
52	-	Spray	HG Z20 (0.100 Kg)+ HG Protect V (0.047 ltr) + Pesticides	Spray
55	Pesticides	Spray	-	Spray
59	-	Spray	HG Protect F (0.100 Kg)+ Pesticides	Spray
55	Pesticides	Spray	-	Spray
60	Pesticides	Spray	-	Spray
63	-	Spray	HG Z20 (0.150 Kg)+ HG Protect V (0.047 ltr) + Pesticides	Spray
65	Pesticides	Spray	-	Spray
70	Pesticides	Spray	HG Fluisan + Pesticides	Spray
75	Pesticides	Spray	-	Spray
77	-	Spray	HG Z20 (0.150 Kg) + HG Protect V (0.047 Ltr)+ Pesticides	Spray
85	Pesticides	Spray	HG Z20 (0.150 Kg)+ Pesticides	Spray
72	Pesticides	Spray	HG Z20 (0.200 Kg)+ Pesticides	Spray
79	Pesticides	Spray	HG Z20 (0.200 Kg) + Pesticides	Spray
86	Pesticides	Spray	HG Z20 (0.200 Kg) + Pesticides	Spray