

Certificate

MPS-ECAS awards this certificate in accordance with the certification scheme MPS ABC version 15 080217, to:

**Luxaflor Roses
Manyewe North Farm, P.O. Box 1
CONCESSION
Zimbabwe
MPS-number: 792011**

Applicable to environmental clusters:
ROSE

Validity: **5-11-2018 until 27-1-2019**
Total points: **87,4**
Qualification: **A**

Kind regards,
MPS-ECAS

Signature:

Date of issue:
10-10-2018



Ing. C. Maas

N.B.: This certificate is only valid for the period specified above.

MPS-ECAS
Certification



QUALIFICATION AND PERIOD GRAPHS

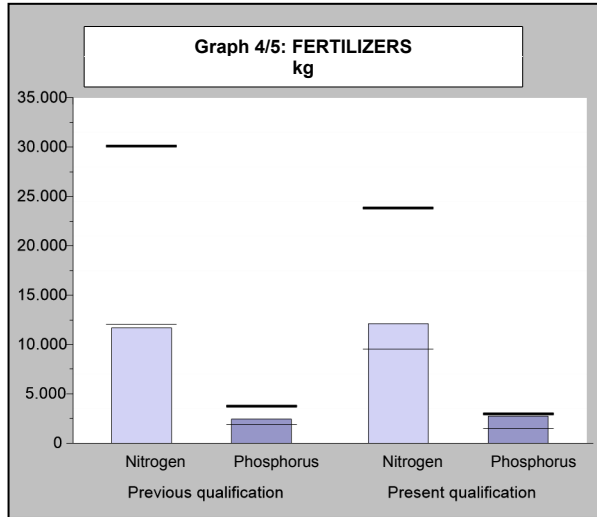
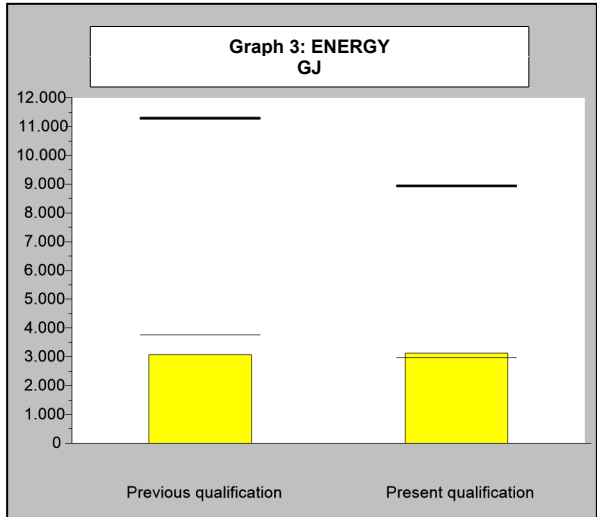
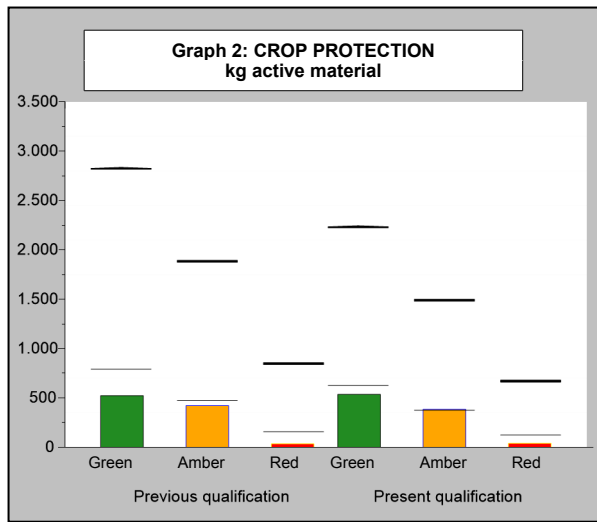
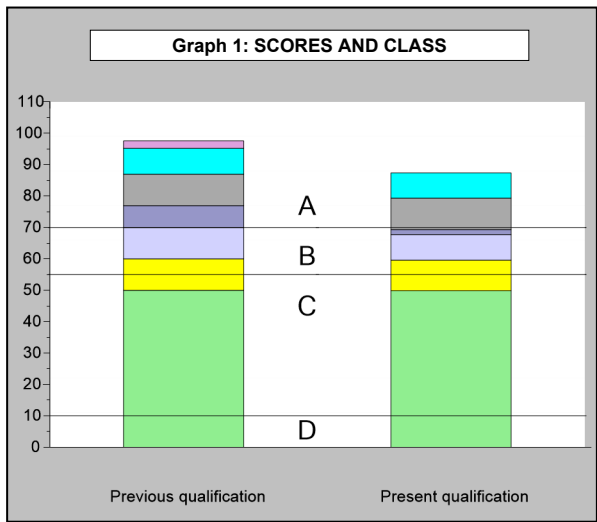
MPS company number: **792011/01**
 Company name: Luxaflor Roses (total)

Valid: Period 11-2017 until Period 10-2018
 Version: 10-10-2018

Table 1: DATA QUALIFICATIONS

SUBJECT	Uw Company standard		Uw use	Uw points	max. points	A+ standard	A+ score	Obtained
	Lower	Upper limit						
Crop protection	Green	625,8-2234,9 kg	536,7	15	15			
	Amber	375,5-1489,9 kg	385,5	19,8	20			
	Red	125,2-670,5 kg	40,9	15	15			
total				49,8	50	85 %	99,6 %	yes
Energy total		2979,8-8939,4 GJ	3128,3	9,8	10	75 %	97,5 %	yes
Fertilizers	Nitrogen	9535,4-23838,5 kg	12115,3	8,2	10			
	Phosphorus	1489,9-2979,8 kg	2742,8	1,6	10			
total				9,8	20	75 %	48,9 %	no
Waste		0-130	130	10	10			
Water		0-130	104	8	10			
Certified parental material				0	10			
Total score (points)				87,4	110	90	87,4	no
COMPANY QUALIFICATION				A				

COMPANY USAGE PER 13 PERIODS
 <-----> = Upper limit <.....> = Lower limit

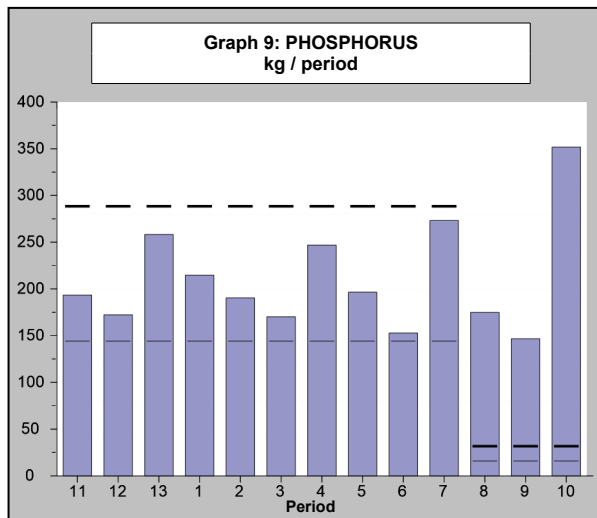
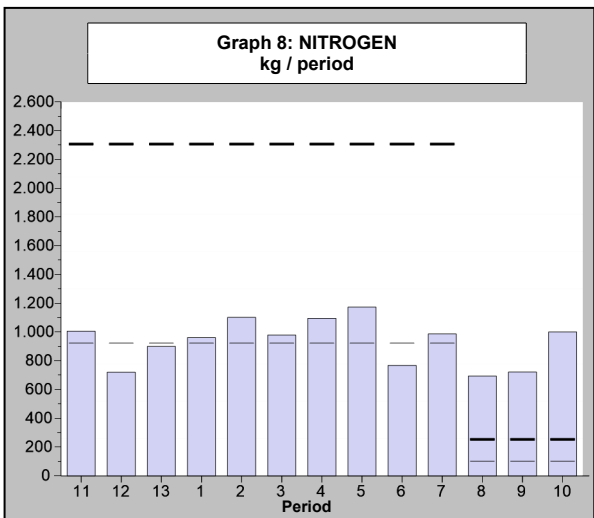
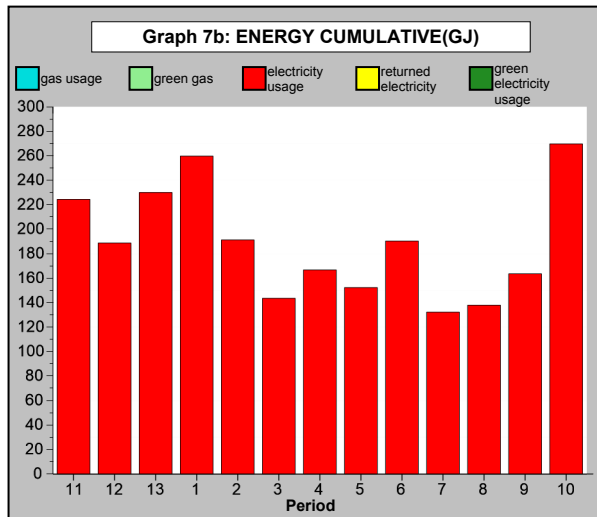
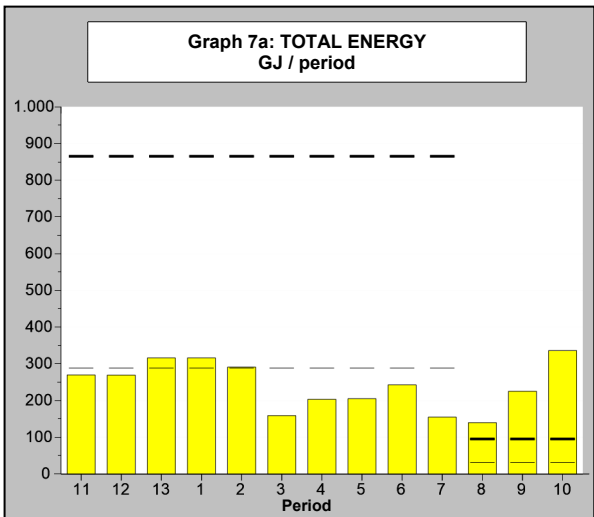
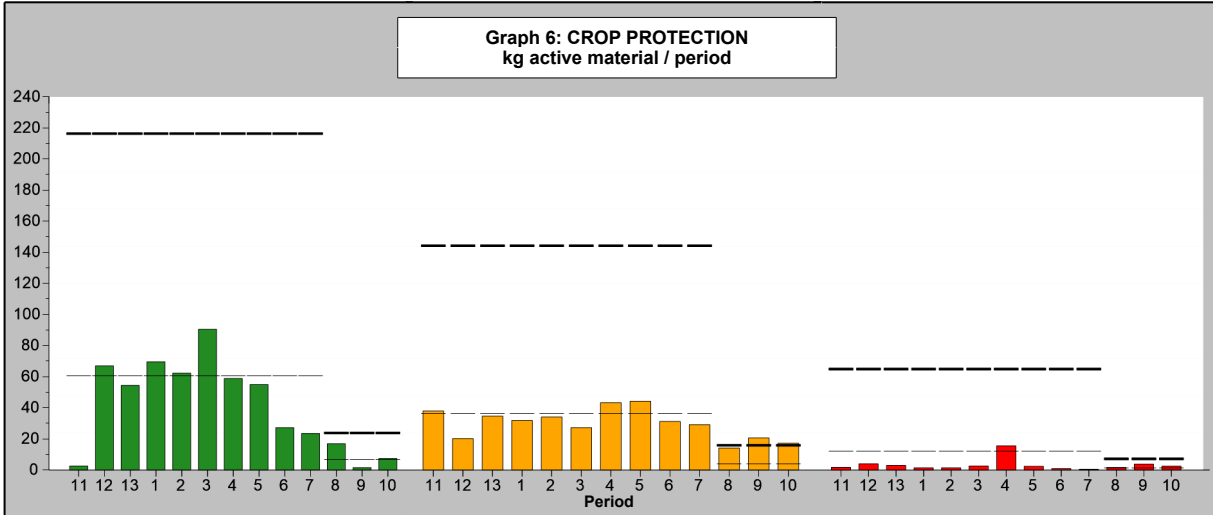


QUALIFICATION AND PERIOD GRAPHS

MPS company number: 792011/01
 Company name: Luxaflor Roses (total)

Valid: Period 11-2017 until Period 10-2018
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<-----> = Upperlimit <.....> = Lowerlimit



MPS-Overview Composition of Qualification

MPS company number: **792011/01**
 Company name: Luxaflor Roses (total)

Valid: Period 11-2017 until Period 10-2018
 Version: 10-10-2018

Composition of points MPS environmentally certified parental material

Certified parental material	(Average) area	Your Points	Max points
Total cultivated area 1)	119192,3 m2		
Area certified parental material MPS-ABC	0 m2	0	10
Area certified parental material GLOBALGAP	0 m2	0	5
Total points for Certified parental material		0	10

1) Total means: the total area covered and uncovered cultivation and the second crop layer. Not included is the uncultivated area.

Overview Environmental zones

Period	11	12	13	1	2	3	4	5	6	7	8	9	10
Environmental	Zone 3	Zone 3	Zone 3	Zone 3	Zone 3	Zone 3	Zone 3	Zone 3	Zone 3	Zone 3	Zone 3	Zone 3	Zone 3

Company usage of MPS-MIND

Pesticide	Indicator color	active ingredient	Annual company use of active substance		
			Green	Amber	Red
Abamectine	●	abamectin		8,812	
Acetamark 20 SP	●	acetamiprid	0,526		
Actara SC	●	thiamethoxam		0,087	
Agil 100 EC	●	propaquizafop	0,300		
Agri Gold	●	copper		0,358	
Aluminium sulphate	○	aluminium sulphate			
Apollo 50SC (85-D-129-2)	●	clofentezin		2,500	
Applegreen EP599	○	acid blue			
Barco 532 (General Purpose Deterge	○	washing soap			
Barco 541 Liquid Bleach (Sodium Hy	○	sodium hypochlorite			
Barco 564 (Superior Liquid Detergent	○	washing soap			
Bellis	●	boscalid	3,021		
	●	pyraclostrobin	1,535		
Belt	●	flubendiamide	3,192		
Bravo 500 (80-B-7-3)	●	chlorothalonil	136,700		
Cascade (92-D-146-1)	●	flufenoxuron	14,680		
Chess 50 WG	●	pymetrozine		0,319	
Curacron 500EC (81-D-118-1)	●	profenofos		15,700	
Dipel DF	○	bacillus thuringiensis			
Dithane M45 WP (72-B-14-12)	●	mancozeb	17,880		
Dynamec 1.8EC (88-D-141-1)	●	abamectin		0,022	
Fungi Flow	●	copper ammonium acetate		4,331	
Glyphosate 360	●	glyphosate-isopropyl ammonium	50,225		
Hth	○	sodium hypochlorite			
Hurricane 500 WDG	●	emamectin benzoate		0,171	
	●	lufenuron			0,684
Hydrogen Peroxide 40%	○	hydrogen peroxide			
Karate (86-D-136-1)	●	lambda-cyhalothrin		3,341	
Kobe 1.2 SC	○	plant extract			
Lime sulphur (72-B-3-3)	○	sulfur/sulphur			
Match 050 EC	●	lufenuron			2,856
Melody Duo 69 WG	●	iprovalicarb	5,389		
	●	propineb	35,928		
Mitac 20 EC (79-D-115-4)	●	amitraz		198,400	
Movento	●	spirotetramat	0,150		
Mycoguard 720 SC	●	chlorothalonil	13,752		
Neoron 500 EC	●	bromopropylate		9,500	

MPS-Overview Composition of Qualification

MPS company number: **792011/01**
 Company name: Luxaflor Roses (total)

Valid: Period 11-2017 until Period 10-2018
 Version: 10-10-2018

Company usage of MPS-MIND

Pesticide	Indicator color	active ingredient	Annual company use of active substance		
			Green	Amber	Red
Nimrod 25EC (92-B-64-1)	●	bupirimate		27,125	
Ortiva	●	azoxystrobin		3,750	
Othello Top	●	azoxystrobin		13,764	
	●	difenoconazole			8,602
Phosguard 400 SL	●	potassium phosphite	249,760		
Previcur N 72EC (L339N)	●	propamocarb hydrochloride	2,664		
Pride	●	fenazaquin		0,600	
Prosper	●	spiroxamine		91,172	
Prove 1.92 EC	●	emamectin benzoate		0,357	
Rovral 250EC FL (88-B-36-2)	●	iprodione			6,675
Seradix B No.2 (81-G-6-3)	●	indolybutyric acid	0,061		
Shavit	●	triadimenol		5,165	
Silwet Gold	○	heptamethyltrisiloxane			
Smite	●	etoxazole	0,013		
Steward 150 EC	●	indoxacarb	0,717		
Terminator	●	didecyldimethylammonium chlori	0,175		
Torque (95-D-158-1)	●	fenbutatin oxide			22,107
Annual company use of active substance			536,667	385,472	40,924

OVERVIEW RECORDED DATA

MPS company number: **792011/01**

Company name: Luxaflo Roses (total)

Valid: Period 11-2017 until Period 10-2018

Version: 10-10-2018

Code	Description	Unit	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Subtotal	Year total
FORM RECEIVED			yes	yes	yes	yes	yes	yes		
CROP PROTECTION AGENTS										
3231	Abamectine	ml	52580	44450	15900	24110	7075	1600	145715	489555
3329	Acetamark 20 SP	gram	240	230	270	479	258	211	1688	2628
3411	Actara SC	ml								362
3266	Agil 100 EC	ml			1000				1000	3000
3430	Agri Gold	ml	1250	750	500	1400			3900	14330
3191	Aluminium sulphate	gram	178000	132000	84000	116000	82000	146000	738000	1470000
3157	Apollo 50SC (85-D-129-2)	ml								5000
3479	Applegreen EP599	gram	1700	300	750	1700	200	1250	5900	10750
3477	Barco 532 (General Purpose Detergent Powder)	gram	53200	31800	40200	36600	33400	38200	233400	462800
3478	Barco 541 Liquid Bleach (Sodium Hypochlorite 5%)	ml	19500	14000	29500	19000	11500	25000	118500	257250
3476	Barco 564 (Superior Liquid Detergent)	ml	71000	35400	50600	36000	33000	42000	268000	537200
3383	Bellis	gram								11990
3330	Belt	ml	225		524	50	25	1075	1899	6649
3164	Bravo 500 (80-B-7-3)	ml		33800	3626	10400		7200	55026	273400
3105	Cascade (92-D-146-1)	ml	26700	24275	24000	37525	29300	61100	202900	293600
3429	Chess 50 WG	gram	20	100		72	62	33	287	637
3039	Curacron 500EC (81-D-118-1)	ml								31400
3344	Dipel DF	gram	2250	4875				1125	8250	16125
3086	Dithane M45 WP (72-B-14-12)	gram	600	1600	8150	12000			22350	22350
3197	Dynamec 1.8EC (88-D-141-1)	ml								1200
3350	Fungi Flow	ml		7000					7000	13750
3403	Glyfosate 360	ml			14000			500	14500	122500
3230	Hth	gram	15000	17500	27750	12750	4500	23000	100500	216500
3481	Hurricane 500 WDG	gram				50			50	1710
3424	Hydrogen Peroxide 40%	ml	21099	14750	31600	8375		1500	77324	117579
3091	Karate (86-D-136-1)	ml	7550	3025	2750	7000	8575	18635	47535	66810
3467	Kobe 1.2 SC	ml								3000
3044	Lime sulphur (72-B-3-3)	ml	28000	56000	13000	28500	16500	3000	145000	268400
3270	Match 050 EC	ml	8550		2750	6000	6750	1750	25800	57120
3337	Melody Duo 69 WG	gram	23810	4400					28210	59880
3190	Mitac 20 EC (79-D-115-4)	ml	93900	85500	73800	28800	78000	52000	412000	992000
3428	Movento	ml								625
3441	Mycoguard 720 SC	ml								19100
3355	Neoron 500 EC	ml		4350	9780	870	1975	2025	19000	19000
3178	Nimrod 25EC (92-B-64-1)	ml	44375	6125				10000	60500	108500
3271	Ortiva	ml	5000						5000	15000

OVERVIEW RECORDED DATA (Continued)

MPS company number: 792011/01

Valid: Period 11-2017 until Period 10-2018

Company name: Luxaflor Roses (total)

Version: 10-10-2018

Code	Description	Unit	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Subtotal	Year total
CROP PROTECTION AGENTS (Continued)										
3447	Othello Top	ml	5300	2250	1700	1375	2750	790	14165	68818
3291	Phosguard 400 SL	ml	63000	6000	14000				83000	446000
3038	Previcur N 72EC (L339N)	ml	1800	1900					3700	3700
3315	Pride	ml				3000			3000	3000
3311	Prosper	ml	21350	13435	17480	8500	2710		63475	182343
3380	Prove 1.92 EC	ml				5000	4037	9563	18600	18600
3092	Rovral 250EC FL (88-B-36-2)	ml	400	2300	400	1200	400	400	5100	26700
3199	Seradix B No.2 (81-G-6-3)	gram	1800	2400	1200	1200	600		7200	20400
3261	Shavit	gram				7075	5775	7810	20660	20660
3332	Silwet Gold	ml	101902	72238	75885	80915	97900	151255	580095	1099255
3316	Smite	ml								125
3451	Steward 150 EC	ml		180		76		39	295	4778
3454	Terminator	ml				100			100	700
3109	Torque (95-D-158-1)	ml	2150			1535	5350	3860	12895	40195
WATER										
21	Total irrigation	m3	18893	13860	13365	13860	14273	23100	97351	207374
ENERGY										
4	Electricity usage (Total)	kWh	16932	21156	14700	15328	18176	29972	116264	272334
54	Diesel oil/fuel	litre	1478	1477	630	50	1740	1865	7240	19072
FERTILIZERS										
513	Ammonium Nitrate	kg	1202,39	877,83	899,71	888,44	909,4	1173,87	5951,64	14648,36
545	Calcium Nitrate	kg	409,6	307,04	214,17	399,57	232,05	358,41	1920,84	4898,41
633	Compound C 6+17+15	kg		50	100	150		100	400	400
634	Compound D 8+14+7	kg		50	100	153		100	403	1102,45
635	Compound J 15+5+20	kg			130		20	200	350	500
752	Fe EDTA 13%	kg	151,99	106,06	110,14	113,11	91,69	147,56	720,55	1224,35
721	Iron Chelate 7% FEDP	kg								136,39
575	Manganese Sulphate	kg	46,23	51,26	0,78				98,27	128,47
580	Mono-Ammonium Phosphate 12+61+0	kg	739,07	549,56	517,59	536,67	549,92	1130,65	4023,46	9247,83
581	Mono-Potassium Phosphate 0+51.5+34	kg			100	52		148	300	300
691	Muriate of Potash	kg	1507,77	1122,32		938,66	1037,56	1436,05	6042,36	15082,67
656	Nitric Acid 55%	litre	3226,8	1722,3	2565	1021,6	1437,6	1660	11633,3	23670,23
762	Omni.s.SOP 7+21+7	kg			1057,05				1057,05	1180,1
754	Omnispor	litre		89,1	125,75	151,75	83,74	185,51	635,85	1656,2

OVERVIEW RECORDED DATA (Continued)

MPS company number: **792011/01**

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Code	Description	Unit	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Subtotal	Year total
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FERTILIZERS (Continued)

710	Potassium Nitrate (Multi K) 13.5+0+46	kg	938,04	676,14	677,46	689,36	692,26		3673,26	9905,57
537	Potassium Nitrate 13+0+45	kg						918,1	918,1	918,1
766	Sulphuric Acid 98%	kg	1904,8	1536,6	1631,6	1310,4	1342	2095,2	9820,6	19372,09
604	Zincsulphate	kg	17,56	14,32	13,5	21,5	14,82	19,04	100,74	149,006

ENVIRONMENTAL CLUSTERS

	Indoor crops									
2014 ROSE	m2		150000	150000	150000	16500	16500	16500		
	Subtotal		150000	150000	150000	16500	16500	16500		

GENERAL INFORMATION FORM

MPS-Mind

Surface water

3900 What is the minimum distance of these fields to the nearest surface water? 250 - 2500 metres / 820 - 8200 feet

Cover

3910 Does the surface of covered crops exceed 95% of this part registration? Yes

Slope

3902 What is the maximum slope of a field in this part registration? 3 - 10%

Leaching to groundwater

3903 Do you grow more than 95% of your crops in a closed (recirculation) system, achieving less than 3% loss of drainwater? No

3904 What is the minimum depth of the groundwater, taken over all your fields? 3 - 15 metres / 9,8 - 49,2 feet

3905 What is the lowest percentage of organic matter of your soil, taken over all your fields of this part registration? > 6%

3906 What is the average precipitation per annum? (if unknown, please leave blank) 600 - 1500 mm annually / 23 - 59 inch

3907 How many months per year may be regarded as exceptionally dry (less than 2% of the annual precipitation)? 2 - 6 months

3908 What is the average day and night temperature over a whole year? (if unknown, please leave blank) < 20 degrees C / 68 degrees F

Water management

45 Is rainwater being collected? No

47 Do you collect leaking water while working with chemicals? Yes

49 Do you record water use? Yes

50 Do you use drip irrigation or recirculation? Yes

OVERVIEW RECORDED DATA (Continued)

MPS company number: 792011/01
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GENERAL INFORMATION FORM

Waste management

41	Is organic waste being processed in a responsible way?	Yes
42	Is paper being processed in a responsible way?	Yes
43	Is plastic being processed in a responsible way?	Yes
44	Is chemical waste being processed in a responsible way?	Yes

OVERVIEW RECORDED DATA

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FORM RECEIVED			yes	yes	yes	yes	yes	yes	yes	
CROP PROTECTION AGENTS										
3231	Abamectine	ml	55950	39650	62850	51525	45625	44200	44040	343840
3329	Acetamark 20 SP	gram	265			50	150		475	940
3411	Actara SC	ml	362							362
3266	Agil 100 EC	ml	1300	700						2000
3430	Agri Gold	ml		500	400	100	5350	3980	100	10430
3191	Aluminium sulphate	gram	46000	46000	58000	72000	54000	80000	376000	732000
3157	Apollo 50SC (85-D-129-2)	ml		600		4400				5000
3479	Applegreen EP599	gram	1000	900	1650		450	400	450	4850
3477	Barco 532 (General Purpose Detergent Powder)	gram	29000	40600	43300	18900	29800	21600	46200	229400
3478	Barco 541 Liquid Bleach (Sodium Hypochlorite 5%)	ml	23750	46500	15500	13500	11500	13000	15000	138750
3476	Barco 564 (Superior Liquid Detergent)	ml	47200	54000	40200	25300	24500	42250	35750	269200
3383	Bellis	gram	500	1125	1875	2490	5625	375		11990
3330	Belt	ml	1200	475	475	150	1500		950	4750
3164	Bravo 500 (80-B-7-3)	ml		52780	55250	44310	52785	8249	5000	218374
3105	Cascade (92-D-146-1)	ml	13700	9100	13050	12450	15800	14600	12000	90700
3429	Chess 50 WG	gram		300		50				350
3039	Curacron 500EC (81-D-118-1)	ml	5975	7100	5100	1800	11425			31400
3344	Dipel DF	gram					7625		250	7875
3086	Dithane M45 WP (72-B-14-12)	gram								1200
3197	Dynamec 1.8EC (88-D-141-1)	ml	1200							1200
3350	Fungi Flow	ml			6000		750			6750
3403	Glyfosate 360	ml	2000	5500	6000	45000		40000	9500	108000
3230	Hth	gram	19000	12000	15000	28500	14000	17500	10000	116000
3481	Hurricane 500 WDG	gram		620		1000	40			1660
3424	Hydrogen Peroxide 40%	ml						20380	19875	40255
3091	Karate (86-D-136-1)	ml	4520	1780	3000	340	310		9325	19275
3467	Kobe 1.2 SC	ml				3000				3000
3044	Lime sulphur (72-B-3-3)	ml	4000	35000	17500	41500	7000	3900	14500	123400
3270	Match 050 EC	ml		6220	1925	1625	250	12250	9050	31320
3337	Melody Duo 69 WG	gram						17000	14670	31670
3190	Mitac 20 EC (79-D-115-4)	ml	97000	49500	95000	104500	64500	67000	102500	580000
3428	Movento	ml					625			625
3441	Mycoguard 720 SC	ml					19100			19100
3355	Neoron 500 EC	ml								
3178	Nimrod 25EC (92-B-64-1)	ml		4000	4500				39500	48000
3271	Ortiva	ml			9600		400			10000

OVERVIEW RECORDED DATA (Continued)

MPS company number: **792011/01**

Valid: Period 11-2017 until Period 10-2018

Company name: Luxaflor Roses (total)

Version: 10-10-2018

Code	Description	Unit	Period 11	Period 12	Period 13	Period 1	Period 2	Period 3	Period 4	Subtotal
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CROP PROTECTION AGENTS (Continued)

3447	Othello Top	ml	12000	2625	12698	5450	8905	7850	5125	54653
3291	Phosguard 400 SL	ml		66000	40000	48500	32500	102500	73500	363000
3038	Previcur N 72EC (L339N)	ml								
3315	Pride	ml								
3311	Prosper	ml	23600	7670	7540	11375	24742	22746	21195	118868
3380	Prove 1.92 EC	ml								
3092	Rovral 250EC FL (88-B-36-2)	ml	800	12200	4900	800	1200	1300	400	21600
3199	Seradix B No.2 (81-G-6-3)	gram	1200	2400	1200	1800	2400	1800	2400	13200
3261	Shavit	gram								
3332	Silwet Gold	ml	76980	53170	91475	89000	86575	64440	57520	519160
3316	Smite	ml	125							125
3451	Steward 150 EC	ml		910	2046	952	575			4483
3454	Terminator	ml	200	200		200				600
3109	Torque (95-D-158-1)	ml						1200	26100	27300

WATER

21	Total irrigation	m3	15624	14508	19584	17618	7830	15660	19200	110024
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ENERGY

4	Electricity usage (Total)	kWh	24932	20972	25560	28868	21250	15952	18536	156070
54	Diesel oil/fuel	litre	1275	2265	2420	1585	2817	435	1035	11832

FERTILIZERS

513	Ammonium Nitrate	kg	1448,66	783,99	1296,39	1248,33	1650,91	916,2	1352,24	8696,72
545	Calcium Nitrate	kg	373,19	301,82	451,4	435,79	409,86	506,52	498,99	2977,57
633	Compound C 6+17+15	kg								
634	Compound D 8+14+7	kg			508	191,45				699,45
635	Compound J 15+5+20	kg					150			150
752	Fe EDTA 13%	kg	103,31			118,28	77,64	72,78	131,79	503,8
721	Iron Chelate 7% FEDP	kg			136,39					136,39
575	Manganese Sulphate	kg	16,2	14						30,2
580	Mono-Ammonium Phosphate 12+61+0	kg	727,8	605,98	854,83	763,56	703,62	640,06	928,52	5224,37
581	Mono-Potassium Phosphate 0+51.5+34	kg								
691	Muriate of Potash	kg	1175,75	1050,32	1576,34	1563,2	1133,2	830	1711,5	9040,31
656	Nitric Acid 55%	litre	1631,6	1560,72	798,96	1564,8	1586,75	2583,2	2310,9	12036,93
762	Omni.s.SOP 7+21+7	kg		123,05						123,05
754	Omnispor	litre	148,64		172,99	185,51	164,82	199,2	149,19	1020,35

OVERVIEW RECORDED DATA (Continued)

MPS company number: **792011/01**

Valid: Period 11-2017 until Period 10-2018

Company name: Luxaflor Roses (total)

Version: 10-10-2018

Code	Description	Unit	Period 11	Period 12	Period 13	Period 1	Period 2	Period 3	Period 4	Subtotal
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FERTILIZERS (Continued)

710	Potassium Nitrate (Multi K) 13.5+0+46	kg	938,45	683	971,28	966,11	1010,45	909,91	753,11	6232,31
537	Potassium Nitrate 13+0+45	kg								
766	Sulphuric Acid 98%	kg	1608,69	1070,8	1880,27	1048,93		1800	2142,8	9551,49
604	Zincsulphate	kg	7,53	4,74	11,436	6,86	5,08	6,08	6,54	48,266

ENVIRONMENTAL CLUSTERS

	Indoor crops									
2014 ROSE	m2	150000	150000	150000	150000	150000	150000	150000	150000	
	Subtotal	150000	150000	150000	150000	150000	150000	150000	150000	

CO2 Indicator

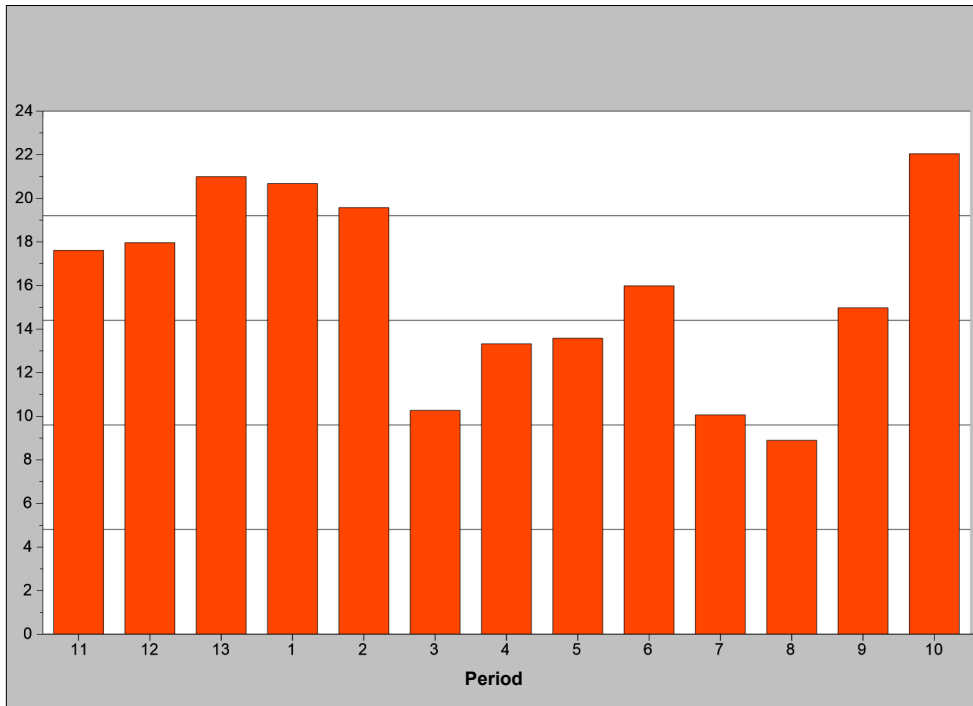
MPS company number: **792011/01**
 Company name: Luxaflor Roses

Valid: Period 11-2017 until Period 10-2018
 Version: 10-10-2018

Review CO2-emission per energy source per year (x 1000 kg)

Code		CO2 production (x 1000)
4	Electricity usage (Total)	156
54	Diesel oil/fuel	50
Total		206

Review CO2-emission per period (x 1000 kg)



Disclaimer: the purpose of the above mentioned table and graphics is to give an insight in the CO2-emission on company level. The CO2 emission has been based on the energy consumption in GJ and the internationally accepted arithmetic rules. The calculation of the quantity in GJ is based on the calculation system of MPS for the fuel used by the company and the electricity and heating that has been bought and sold. The review serves only as a management tool. No rights can be derived. It is not allowed to use this review for other purposes. In cooperation with (inter)national stakeholders and research organizations MPS is working on further developments concerning CO2. We mainly focus on CO2 emission in the transport chain and the CO2 emission per physical production.