

**Site D Batch 1**

Project title:		The role of environmental factors in the incidence of Pansy mottle syndrome (PaMS) 2015	
ADAS: XBM5577		HDC: PO 016a	
Date	Comment	Initials	
29 May	Sown in 240 cell trays, using the drum machine. The trays had been watered before and after sowing, covered with cork.		
04 June	The batch had been moved from Zone 1 to Zone 2 on rails.		
10 June	Moved from Zone 2 to Zone 3		
26 June	Transplanted into 'WILLIT'		

<b>Production information</b>	
<b>Seed details</b>	
<b>Breeder/ supplier:</b>	Colossus White. Colossus Purple Blotch. Syngenta
<b>Cultivar, genetics (F<sub>1</sub>):</b>	F1
<b>Seed treatment:</b>	
<b>Storage Location (cold room, fridge):</b>	Fridge
<b>Storage Temperature:</b>	5°C
<b>Germination/propagation information</b>	
<b>Date of sowing/batch number:</b>	29 <sup>th</sup> May 2015
<b>Sowing method:</b>	Drum
<b>Location within Nursery:</b>	Prop
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Benches
<b>Position within location (e.g. any doors/vents nearby):</b>	
<b>Date covered (note if not milky plastic):</b>	
<b>Date cover removed:</b>	
<b>Module (cell number):</b>	240

<b>Module (cell volume):</b>	
<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	
<b>Movement information:</b>	
<b>Transport method:</b>	By electrical buggy on a trolley
<b>Route (outdoors, indoors etc.):</b>	Outdoors
<b>Duration:</b>	5 minutes
<b>Covered?</b>	No
<b>Growing on information:</b>	
<b>Date of transplanting:</b>	25 <sup>th</sup> June
<b>Growth stage at transplanting (no. of leaves)</b>	5 leaves
<b>Location within Nursery:</b>	Willit
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Bench
<b>Position of monitors within location (within 5 m of a doorway/vent/fans):</b>	
<b>Module (cell number):</b>	230
<b>Module (cell volume):</b>	

<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	
<b>End of Monitoring</b>	
<b>Date monitoring stopped:</b>	17 <sup>th</sup> July
<b>Date of dispatch:</b>	
<b>Were any symptoms noted after monitoring stopped?</b>	No

<b>Irrigation application:</b>				
<b>Date</b>	<b>Stage of production</b>	<b>Volume</b>	<b>Method of application</b>	<b>Source (mains/reservoir/borehole)</b>
29 / 05	Seed	35ml	Hammer	Mains
30 / 05		30ml		
01 / 06		24ml		
02 / 06		20ml		
03 / 06		26ml		
04 / 06		19ml		
27 / 06	5 leaves	35ml	Rose	
01 / 07	6 leaves	20ml		
04 / 07		20ml		
07 / 07		20ml		
10 / 07		20ml		
12 / 07		20ml		
14 / 07		20ml		

<b>Fertiliser application:</b>					
<b>Date</b>	<b>Stage of production</b>	<b>Product</b>	<b>NPK content</b>	<b>Method of application</b>	<b>Concentration (g/l)</b>
05 / 06	2 leaves	Peters Excel	18-10-18	Rose	15ml
06 / 06					17ml
07 / 06					10ml
08 / 06					12ml
09 / 06					18ml
10 / 06					20ml
11 / 06	3 leaves				15ml
12 / 06					10ml
13 / 06					8ml
14 / 06					10ml
15 / 06					10ml
16 / 06	4 leaves				12ml

17 / 06	4 leaves				17ml
18 / 06	4 leaves				20ml
21 / 06	4 leaves				2ml
22 / 06					13ml
23 / 06					20ml
24 / 06					22ml
25 / 06					30ml
26 / 06					35ml

Crop protection and PGR application:						
Date	Input type	Dose rate/water volume	Product name	Active ingredient	Application Method	Growth Stage (no.of leaves)
28 / 06	Fungicide	1ml/litre	Amistar			
		3g/litre	Fenomenal		Sprayer	5 leaves
01 / 07	Insecticide	50g/100l	Gazelle		Sprayer	
04 / 07	PGR	5g/1litre	Dazide			



Root hair assessment at transplant			Date: 25.06.15		
Pansy batch / sowing date:			Growth stage (no of leaves):		
Plant no.	Root hair score (0-3 scale)	Comments	Plant no.	Root hair score (0-3 scale)	Comments
1 - 80967	3	Colossus White Pansy	11 – 80894	3	Colossus Purple Blotch
2 - 80967	3	Colossus White Pansy	12 – 80894	3	Colossus Purple Blotch
3 - 80967	3	Colossus White Pansy	13 – 80894	3	Colossus Purple Blotch
4 - 80967	3	Colossus White Pansy	14 – 80894	3	Colossus Purple Blotch
5 - 80967	3	Colossus White Pansy	15 - 80894	3	Colossus Purple Blotch
6 – 80967	3	Colossus White Pansy	16 – 80894	3	Colossus Purple Blotch
7 – 80967	3	Colossus White Pansy	17 – 80894	3	Colossus Purple Blotch
8 – 80967	3	Colossus White Pansy	18 – 80894	3	Colossus Purple Blotch
9 – 80967	3	Colossus White Pansy	19 – 80894	3	Colossus Purple Blotch
10 - 80967	3	Colossus White Pansy	20 - 80894	3	Colossus Purple Blotch

Pansy Mottle Syndrome incidence					
Date	Time	Sowing Batch	Tray number in batch	Number of plants affected	Growth Stage

**Site D Batch 2**

Project title: The role of environmental factors in the incidence of Pansy mottle syndrome (PaMS) 2015		
ADAS: XBM5577		HDC: PO 016a
Date	Comment	Initials
11 <sup>th</sup> June	Sown in 240 cell trays, using the needle machine. The trays had been watered before and after sowing, covered with cork and moved to Zone 1	B2
19 <sup>th</sup> June	Moved to Zone 2	B2 MJS
27 <sup>th</sup> June	Moved to Zone 4	B2 MJS
16 <sup>th</sup> July	Replanted in 9cm pot in house number 6	
17 <sup>th</sup> July	Sprayed Fenomenal + Amistar	
19 <sup>th</sup> July	Sprayed Dazide Enhance	

<b>Production information</b>	
<b>Seed details</b>	
<b>Breeder/ supplier:</b>	Power Fire/ Moles. Colossus Neon Violet/Syngenta.
<b>Cultivar, genetics (F<sub>1</sub>):</b>	F1
<b>Seed treatment:</b>	No
<b>Storage Location (cold room, fridge):</b>	Fridge
<b>Storage Temperature:</b>	5°C
<b>Germination/propagation information</b>	
<b>Date of sowing/batch number:</b>	11 <sup>th</sup> June 2015
<b>Sowing method:</b>	Needle Machine
<b>Location within Nursery:</b>	Prop
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Bench
<b>Position within location (e.g. any doors/vents nearby):</b>	
<b>Date covered (note if not milky plastic):</b>	
<b>Date cover removed:</b>	
<b>Module (cell number):</b>	240

<b>Module (cell volume):</b>	240
<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	
<b>Movement information:</b>	
<b>Transport method:</b>	On a trolley with electrical buggy
<b>Route (outdoors, indoors etc.):</b>	Outdoors
<b>Duration:</b>	5 minutes
<b>Covered?</b>	No
<b>Growing on information:</b>	
<b>Date of transplanting:</b>	15 <sup>th</sup> July
<b>Growth stage at transplanting (no. of leaves)</b>	5-6 leaves
<b>Location within Nursery:</b>	House Number 6
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Floor, polystyrene
<b>Position of monitors within location (within 5 m of a doorway/vent/fans):</b>	No
<b>Module (cell number):</b>	235
<b>Module (cell volume):</b>	

**Growing media (product, specification, additives  
e.g. wetters). Obtain sample.**

<b>Irrigation application:</b>				
<b>Date</b>	<b>Stage of production</b>	<b>Volume</b>	<b>Method of application</b>	<b>Source (mains/reservoir/borehole)</b>
11 / 06	Seed	40ml	Hammer	Mains
12 / 06		21ml		
13 / 06		16ml		
14 / 06		19ml		
15 / 06		25ml		
16 / 06		24ml		
17 / 06		19ml		
17 / 06		10ml		
18 / 06		21ml		
16 / 07		180ml	Handwater	Mains
19 / 07		150ml		
23 / 07		207ml		

<b>Fertiliser application:</b>					
<b>Date</b>	<b>Stage of production</b>	<b>Product</b>	<b>NPK content</b>	<b>Method of application</b>	<b>Concentration (g/l)</b>
20 / 06	2 leaves	Peter Excel	18-10-18	Rose	15ml
21 / 06					20ml
22 / 06					25ml
23 / 06					30ml
24 / 06					
25 / 06	3 leaves				32ml
26 / 06					15ml
27 / 06					
28 / 06					25ml
29 / 06					27ml
30 / 06	3 leaves				25ml
01 / 07	3 leaves				30ml



02 / 07	3 leaves				20ml
03 / 07					25ml
04 / 07	4 leaves				20ml
05 / 07					30ml
06 / 07					17ml
08 / 07					20ml
09 / 07					25ml
10 / 07	5 leaves				30ml
11 / 07					27ml
12 / 07					20ml
13 / 07					25ml
14 / 07					25ml
15 / 07					25ml

**Crop protection and PGR application:**

<b>Date</b>	<b>Input type</b>	<b>Dose rate/water volume</b>	<b>Product name</b>	<b>Active ingredient</b>	<b>Application Method</b>
17 / 07			Fenomenal and Amistar		
19 / 07			Dazide Enhance		

Root hair assessment at transplant			Date: 15.07.15		
Pansy batch / sowing date:			Growth stage (no of leaves):		
Plant no.	Root hair score (0-3 scale)	Comments	Plant no.	Root hair score (0-3 scale)	Comments
1	2		11	3	
2	2		12	3	
3	2		13	3	
4	2		14	3	
5	3		15	3	
6	3		16	2	
7	2		17	2	
8	2		18	2	
9	2		19	3	
10	2		20	3	

<b>Pansy Mottle Syndrome incidence</b>					
<b>Date</b>	<b>Time</b>	<b>Sowing Batch</b>	<b>Tray number in batch</b>	<b>Number of plants affected</b>	<b>Growth Stage</b>

**Site D Batch 3**

Project title:		The role of environmental factors in the incidence of Pansy mottle syndrome (PaMS) 2015	
ADAS: XBM5577		HDC: PO 016a	
Date	Comment	Initials	
17 <sup>th</sup> July	Sown in 240 cell trays, drum machine, the trays had been watered before and after sowing, covered with cork and moved to Zone 1		
23 <sup>rd</sup> July	Moved to Zone 2		
30 <sup>th</sup> July	Moved to Zone 4		
11 <sup>th</sup> August	Transplanted in Willit		

<b>Production information</b>	
<b>Seed details</b>	
<b>Breeder/ supplier:</b>	Matrix Morpheus, Ball Colegrave. Delta Pink Shades, Syngenta.
<b>Cultivar, genetics (F<sub>1</sub>):</b>	F1
<b>Seed treatment:</b>	N/A
<b>Storage Location (cold room, fridge):</b>	Fridge
<b>Storage Temperature:</b>	5°C
<b>Germination/propagation information</b>	
<b>Date of sowing/batch number:</b>	Batch 3, 17 <sup>th</sup> July
<b>Sowing method:</b>	Drum machine
<b>Location within Nursery:</b>	Prop
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Bench
<b>Position within location (e.g. any doors/vents nearby):</b>	No
<b>Date covered (note if not milky plastic):</b>	
<b>Date cover removed:</b>	
<b>Module (cell number):</b>	240
<b>Module (cell volume):</b>	

<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	
<b>Movement information:</b>	
<b>Transport method:</b>	Electrical buggy
<b>Route (outdoors, indoors etc.):</b>	Outdoors
<b>Duration:</b>	5 minutes
<b>Covered?</b>	No
<b>Growing on information:</b>	
<b>Date of transplanting:</b>	11 <sup>th</sup> August
<b>Growth stage at transplanting (no. of leaves)</b>	5 leaves
<b>Location within Nursery:</b>	Willit
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Bench
<b>Position of monitors within location (within 5 m of a doorway/vent/fans):</b>	No doors, 5m from fans
<b>Module (cell number):</b>	220
<b>Module (cell volume):</b>	
<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	

<b>End of Monitoring</b>	
<b>Date monitoring stopped:</b>	10 <sup>th</sup> September 2015
<b>Date of dispatch:</b>	
<b>Were any symptoms noted after monitoring stopped?</b>	No



Irrigation application:				
Date	Stage of production	Volume	Method of application	Source (mains/reservoir/borehole)
17 / 07		42ml		
18 / 07		29ml		
19 / 07		20ml		
20 / 07		23ml		
21 / 07		15ml		
22 / 07		25ml		
23 / 07		20ml		
11 / 08	5 Leaves	35ml	By hand, Rose	Mains
20 / 08		20ml	Irrig. SoM – Booms	
27 / 08		20ml	Irrig. SoM - Booms	
08 / 09	8 Leaves	20ml	Booms	Mains
10 / 09		20ml	Booms	

<b>Fertiliser application:</b>					
<b>Date</b>	<b>Stage of production</b>	<b>Product</b>	<b>NPK content</b>	<b>Method of application</b>	<b>Concentration (g/l)</b>
25 / 07	2 leaves	Peter Excel	18-10-18	Rose	20ml
27 / 07					15ml
29 / 07					17ml
31 / 07	3 leaves				30ml
01 / 08					15ml
02 / 08					10ml
03 / 08					12ml
04 / 08	4 leaves				15ml
05 / 08					20ml
06 / 08					12ml
07 / 08	5 leaves				10ml
08 / 08					22ml
09 / 08					15ml

11 / 08					17ml
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**Crop protection and PGR application:**

Date	Input type	Dose rate/water volume	Product name	Active ingredient	Application Method
12 / 08			Amistar + Fenomenol		
14 / 08		50g/100l	Gazelle		
20 / 08		5g/1litre	Dazide Enhance		
05 / 09		1ml/1litre	Bonzai		

Root hair assessment at transplant			Date: 11.08.15		
Pansy batch / sowing date:			Growth stage (no of leaves):		
Plant no.	Root hair score (0-3 scale)	Comments	Plant no.	Root hair score (0-3 scale)	Comments
1	2		11	2	
2	2		12	2	
3	3		13	2	
4	3		14	3	
5	3		15	3	
6	3		16	3	
7	3		17	3	
8	2		18	2	
9	2		19	2	
10	3		20	2	

Pansy Mottle Syndrome incidence					
Date	Time	Sowing Batch	Tray number in batch	Number of plants affected	Growth Stage

**Site D Batch 4**

Project title:		The role of environmental factors in the incidence of Pansy mottle syndrome (PaMS) 2015	
ADAS: XBM5577		HDC: PO 016a	
Date	Comment	Initials	
10/08	Sown in 240 cell trays using the needle machine. The trays had been watered before and after sowing, covered with cork and moved to Zone 1.		
14/08	Moved to Zone 2		
21/08	Moved to Zone 4		
21/09	Replanted in D6 to Cambridge. We decided to be planted in D6 because you can see different greenhouse.		

<b>Production information</b>	
<b>Seed details</b>	
<b>Breeder/ supplier:</b>	
<b>Cultivar, genetics (F<sub>1</sub>):</b>	F1
<b>Seed treatment:</b>	N/A
<b>Storage Location (cold room, fridge):</b>	Fridge
<b>Storage Temperature:</b>	5°C
<b>Germination/propagation information</b>	
<b>Date of sowing/batch number:</b>	10/08/2015
<b>Sowing method:</b>	By needle
<b>Location within Nursery:</b>	Prop
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Floor, Cambridge – greenhouse
<b>Position within location (e.g. any doors/vents nearby):</b>	
<b>Date covered (note if not milky plastic):</b>	
<b>Date cover removed:</b>	
<b>Module (cell number):</b>	240



<b>Module (cell volume):</b>	230
<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	
<b>Movement information:</b>	
<b>Transport method:</b>	By buggy on a trolley
<b>Route (outdoors, indoors etc.):</b>	Outdoors
<b>Duration:</b>	5 minutes
<b>Covered?</b>	No
<b>Growing on information:</b>	
<b>Date of transplanting:</b>	02/09/2015
<b>Growth stage at transplanting (no. of leaves)</b>	3/4 leaves
<b>Location within Nursery:</b>	Cambridge
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Floor
<b>Position of monitors within location (within 5 m of a doorway/vent/fans):</b>	No
<b>Module (cell number):</b>	
<b>Module (cell volume):</b>	

<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	
<b>End of Monitoring</b>	
<b>Date monitoring stopped:</b>	10/10/2015
<b>Date of dispatch:</b>	10/10/2015
<b>Were any symptoms noted after monitoring stopped?</b>	No

<b>Irrigation application:</b>				
<b>Date</b>	<b>Stage of production</b>	<b>Volume</b>	<b>Method of application</b>	<b>Source (mains/reservoir/borehole)</b>
10 / 08		40ml	By hand, hammer	Mains
11 / 08		30ml		
12 / 08		25ml		
13 / 08		27ml		
14 / 08		30ml		
04 / 09		40ml	By hand	
09 / 09		20ml	By booms	
14 / 09		20ml		
19 / 09		20ml		
24 / 09		20ml		
29 / 09		20ml		
05 / 10		20ml		

<b>Fertiliser application:</b>					
<b>Date</b>	<b>Stage of production</b>	<b>Product</b>	<b>NPK content</b>	<b>Method of application</b>	<b>Concentration (g/l)</b>
15 / 08		Peter Excel	18-10-18	Rose	15ml
18 / 08					20ml
21 / 08					25ml
23 / 08					27ml
25 / 08					25ml
26 / 08					30ml
28 / 08					24ml
29 / 08					32ml
01 / 09					30ml

**Crop protection and PGR application:**

Date	Input type	Dose rate/water volume	Product name	Active ingredient	Application Method
05 / 09			Amistar + Femonenol		Sprayer
07 / 09			Gazelle		Sprayer
11 / 09		5g/1litre	Dazide Enhance		
20 / 09		1ml/1litre	Bonzai		

Root hair assessment at transplant			Date: 02.09.15		
Pansy batch / sowing date:			Growth stage (no of leaves):		
Plant no.	Root hair score (0-3 scale)	Comments	Plant no.	Root hair score (0-3 scale)	Comments
1	3		11	2	
2	3		12	2	
3	3		13	2	
4	3		14	3	
5	3		15	3	
6	3		16	2	
7	2		17	2	
8	2		18	2	
9	2		19	3	
10	3		20	3	

Pansy Mottle Syndrome incidence					
Date	Time	Sowing Batch	Tray number in batch	Number of plants affected	Growth Stage

