

**Site A 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
	No comments provided	

<b>Production information</b>	
<b>Seed details</b>	
<b>Breeder/ supplier:</b>	Ball
<b>Cultivar, genetics (F<sub>1</sub>):</b>	Matrix Autumn BLALE Mix
<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>	11.6.15 wk 24 - 32909
<b>Sowing method:</b>	Hamilton Drum Seeder
<b>Location within Nursery:</b>	R72 → R70 30.6.15
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Floor
<b>Position within location (e.g. any doors/vents nearby):</b>	Vents above, Fan near
<b>Date covered (note if not milky plastic):</b>	N/A
<b>Date cover removed:</b>	N/A
<b>Module (cell number):</b>	288

<b>Module (cell volume):</b>	
<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	TREF
<b>Movement information:</b>	
<b>Transport method:</b>	Trolley
<b>Route (outdoors, indoors etc.):</b>	Outdoors
<b>Duration:</b>	1 min
<b>Covered?</b>	None
<b>Growing on information:</b>	
<b>Date of transplanting:</b>	13.7.15
<b>Growth stage at transplanting (no. of leaves)</b>	3 True Leaves
<b>Location within Nursery:</b>	R51
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Floor – mypex mat
<b>Position of monitors within location (within 5 m of a doorway/vent/fans):</b>	Near door – under ReduFuse Glass
<b>Module (cell number):</b>	D6
<b>Module (cell volume):</b>	

<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	Bulrush
<b>End of Monitoring</b>	
<b>Date monitoring stopped:</b>	30.7.15
<b>Date of dispatch:</b>	?
<b>Were any symptoms noted after monitoring stopped?</b>	No

**Irrigation application: Not completed for this batch**

<b>Date</b>	<b>Stage of production</b>	<b>Volume</b>	<b>Method of application</b>	<b>Source (mains/reservoir/borehole)</b>

**Fertiliser application: Not completed for this batch**

Date	Stage of production	Product	NPK content	Method of application	Concentration (g/l)

**Crop protection and PGR application: Not completed for this batch**

Date	Input type	Dose rate/water volume	Product name	Active ingredient	Application Method

Root hair assessment at transplant			Date: 13.07.15		
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		
2	2		12		
3	1		13		
4	2		14		
5	3		15		
6	2		16		
7	2		17		
8	2		18		
9	2		19		
10	1		20		



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

**Site A 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
	No comments provided	

<b>Production information</b>	
<b>Seed details</b>	
<b>Breeder/ supplier:</b>	Syngenta – GoldSmith
<b>Cultivar, genetics (F<sub>1</sub>):</b>	Pansy Delta Primrose
<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>	24/06/2015 / 33101
<b>Sowing method:</b>	Hamilton Drum Seeder
<b>Location within Nursery:</b>	R71 Prop House Please check temp for wk 26-27, was very hot. 30°C±
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Floor – Mypex mat
<b>Position within location (e.g. any doors/vents nearby):</b>	Vents above
<b>Date covered (note if not milky plastic):</b>	N/A
<b>Date cover removed:</b>	N/A
<b>Module (cell number):</b>	288 cell tray

<b>Module (cell volume):</b>	
<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	TREF Glue Compost
<b>Movement information:</b>	
<b>Transport method:</b>	Trolley – Moved to R70 07/07/2015 Harden Off
<b>Route (outdoors, indoors etc.):</b>	Outdoor
<b>Duration:</b>	2 minutes
<b>Covered?</b>	No
<b>Growing on information:</b>	
<b>Date of transplanting:</b>	22/07/2015
<b>Growth stage at transplanting (no. of leaves)</b>	2 True Leaves
<b>Location within Nursery:</b>	R49
<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>	Below vents – Redufuse on glass
<b>Module (cell number):</b>	D6
<b>Module (cell volume):</b>	

<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	Bulrush Pansy Mix
<b>End of Monitoring</b>	
<b>Date monitoring stopped:</b>	05/08/2015
<b>Date of dispatch:</b>	
<b>Were any symptoms noted after monitoring stopped?</b>	

**Irrigation application: Not completed for this batch**

<b>Date</b>	<b>Stage of production</b>	<b>Volume</b>	<b>Method of application</b>	<b>Source (mains/reservoir/borehole)</b>

Fertiliser application:					
Date	Stage of production	Product	NPK content	Method of application	Concentration (g/l)
	1 <sup>st</sup> True Leaves	Hard water special. Peter's Excel	18-10-18	Dosatron	1kg/10litres @ 1.1
	Applied every other watering				

**Crop protection and PGR application: Not completed for this batch**

Date	Input type	Dose rate/water volume	Product name	Active ingredient	Application Method



Root hair assessment at transplant			Date: 22.07.15		
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		
2	3		12		
3	3		13		
4	2		14		
5	3		15		
6	2		16		
7	2		17		
8	3		18		
9	2		19		
10	2		20		

Pansy Mottle Syndrome incidence					
Date	Time	Sowing Batch	Tray number in batch	Number of plants affected	Growth Stage
22/07/15	15:30	33101		General Distortion	2 True Leaves

**Site A 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
	No comments provided	

<b>Production information</b>	
<b>Seed details</b>	
<b>Breeder/ supplier:</b>	Ball
<b>Cultivar, genetics (F<sub>1</sub>):</b>	Matrix Fruits of the Forest
<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>	3.7.15 wk 27 33213
<b>Sowing method:</b>	Hamilton Drum Seeder
<b>Location within Nursery:</b>	R72
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Floor
<b>Position within location (e.g. any doors/vents nearby):</b>	Vents above
<b>Date covered (note if not milky plastic):</b>	N/A
<b>Date cover removed:</b>	N/A
<b>Module (cell number):</b>	288

<b>Module (cell volume):</b>	N/A
<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	TREF
<b>Movement information:</b>	
<b>Transport method:</b>	Trolley
<b>Route (outdoors, indoors etc.):</b>	Outdoors
<b>Duration:</b>	1 min
<b>Covered?</b>	None
<b>Growing on information:</b>	
<b>Date of transplanting:</b>	30.7.15
<b>Growth stage at transplanting (no. of leaves)</b>	2 True Leaves
<b>Location within Nursery:</b>	R45
<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>	Vents above
<b>Module (cell number):</b>	D6
<b>Module (cell volume):</b>	

<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	Bulrush Pansy Mix
<b>End of monitoring</b>	
<b>Date monitoring stopped:</b>	21.8.15
<b>Date of dispatch:</b>	
<b>Were any symptoms noted after monitoring stopped?</b>	

**Irrigation application: Not completed for this batch**

<b>Date</b>	<b>Stage of production</b>	<b>Volume</b>	<b>Method of application</b>	<b>Source (mains/reservoir/borehole)</b>

**Fertiliser application: Not completed for this batch**

Date	Stage of production	Product	NPK content	Method of application	Concentration (g/l)



**Crop protection and PGR application: Not completed for this batch**

<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>

Root hair assessment at transplant			Date: Not completed for this batch		
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			11		
2			12		
3			13		
4			14		
5			15		
6			16		
7			17		
8			18		
9			19		
10			20		

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

**Site A 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
	No comments provided	

<b>Production information</b>	
<b>Seed details</b>	
<b>Breeder/ supplier:</b>	Ball Colegrave
<b>Cultivar, genetics (F<sub>1</sub>):</b>	Pansy Matrix Halloween Mix
<b>Seed treatment:</b>	None
<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>	10/07/2015 / 33336
<b>Sowing method:</b>	Hamilton Drumseeder
<b>Location within Nursery:</b>	R72
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Floor mypex mat
<b>Position within location (e.g. any doors/vents nearby):</b>	Near door
<b>Date covered (note if not milky plastic):</b>	N/A
<b>Date cover removed:</b>	N/A
<b>Module (cell number):</b>	288

<b>Module (cell volume):</b>	
<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	TREF
<b>Movement information:</b>	
<b>Transport method:</b>	Trolley – Moved out to R70. Harden off      23/07/2015
<b>Route (outdoors, indoors etc.):</b>	Outdoors
<b>Duration:</b>	3 minutes
<b>Covered?</b>	No
<b>Growing on information:</b>	
<b>Date of transplanting:</b>	05/08/2015 - Sensor did not go with batch till 11/08/2015 was on holiday. Placed sensor in 11/08/2015 (R42)
<b>Growth stage at transplanting (no. of leaves)</b>	
<b>Location within Nursery:</b>	R42
<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>	Vents above – Redufuse on glass
<b>Module (cell number):</b>	D6
<b>Module (cell volume):</b>	

<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	Bulrush Pansy Mix
<b>End of Monitoring</b>	
<b>Date monitoring stopped:</b>	28/08/2015
<b>Date of dispatch:</b>	
<b>Were any symptoms noted after monitoring stopped?</b>	

**Irrigation application: Not completed for this batch**

<b>Date</b>	<b>Stage of production</b>	<b>Volume</b>	<b>Method of application</b>	<b>Source (mains/reservoir/borehole)</b>



**Fertiliser application: Not completed for this batch**

Date	Stage of production	Product	NPK content	Method of application	Concentration (g/l)

**Crop protection and PGR application: Not completed for this batch**

Date	Input type	Dose rate/water volume	Product name	Active ingredient	Application Method

Root hair assessment at transplant			Date: Not completed for this batch		
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			11		
2			12		
3			13		
4			14		
5			15		
6			16		
7			17		
8			18		
9			19		
10			20		

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

**Site A Batch 5**

Project title: The role of environmental factors in the incidence of Pansy mottle syndrome (PaMS) 2015		
ADAS: XBM5577 HDC: PO 016a		
Date	Comment	Initials
	No comments provided	

<b>Production information</b>	
<b>Seed details</b>	
<b>Breeder/ supplier:</b>	Goldsmith / Syngenta
<b>Cultivar, genetics (F<sub>1</sub>):</b>	Pansy Yellow Redwing
<b>Seed treatment:</b>	None
<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>	12.8.15 wk 34 33912
<b>Sowing method:</b>	Drum seeder
<b>Location within Nursery:</b>	R65
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Floor
<b>Position within location (e.g. any doors/vents nearby):</b>	Vents above
<b>Date covered (note if not milky plastic):</b>	N/A
<b>Date cover removed:</b>	N/A
<b>Module (cell number):</b>	288

<b>Module (cell volume):</b>	N/A
<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	TREF
<b>Movement information:</b>	
<b>Transport method:</b>	
<b>Route (outdoors, indoors etc.):</b>	
<b>Duration:</b>	
<b>Covered?</b>	
<b>Growing on information:</b>	
<b>Date of transplanting:</b>	20.10.15
<b>Growth stage at transplanting (no. of leaves)</b>	4
<b>Location within Nursery:</b>	R47
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	
<b>Position of monitors within location (within 5 m of a doorway/vent/fans):</b>	
<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>	19.11.15
<b>Date of dispatch:</b>	
<b>Were any symptoms noted after monitoring stopped?</b>	



Irrigation application: Not completed for this batch				
Date	Stage of production	Volume	Method of application	Source (mains/reservoir/borehole)

**Fertiliser application: Not completed for this batch**

Date	Stage of production	Product	NPK content	Method of application	Concentration (g/l)

**Crop protection and PGR application: Not completed for this batch**

Date	Input type	Dose rate/water volume	Product name	Active ingredient	Application Method

Root hair assessment at transplant			Date: Not completed for this batch		
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			11		
2			12		
3			13		
4			14		
5			15		
6			16		
7			17		
8			18		
9			19		
10			20		

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

**Site A Batch 6**

Project title: The role of environmental factors in the incidence of Pansy mottle syndrome (PaMS) 2015		
ADAS: XBM5577 HDC: PO 016a		
Date	Comment	Initials
	No comments provided	

<b>Production information</b>	
<b>Seed details</b>	
<b>Breeder/ supplier:</b>	Inspire / Moles
<b>Cultivar, genetics (F<sub>1</sub>):</b>	Red Blotch Inspire
<b>Seed treatment:</b>	None
<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>	18/08/2015 33998
<b>Sowing method:</b>	Hamilton Drum Seeder
<b>Location within Nursery:</b>	R71
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Floor
<b>Position within location (e.g. any doors/vents nearby):</b>	Near Door
<b>Date covered (note if not milky plastic):</b>	N/A
<b>Date cover removed:</b>	N/A
<b>Module (cell number):</b>	288

<b>Module (cell volume):</b>	
<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	TREF
<b>Movement information:</b>	
<b>Transport method:</b>	Moved to R69 – 05/09/2015
<b>Route (outdoors, indoors etc.):</b>	Outdoors
<b>Duration:</b>	3 minutes
<b>Covered?</b>	
<b>Growing on information:</b>	
<b>Date of transplanting:</b>	21/09/2015
<b>Growth stage at transplanting (no. of leaves)</b>	3-4 true leaves
<b>Location within Nursery:</b>	Shan Multi-Span
<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>	Side vents
<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>	27/10/2015
<b>Date of dispatch:</b>	
<b>Were any symptoms noted after monitoring stopped?</b>	No

**Irrigation application: Not completed for this batch**

<b>Date</b>	<b>Stage of production</b>	<b>Volume</b>	<b>Method of application</b>	<b>Source (mains/reservoir/borehole)</b>

**Fertiliser application: Not completed for this batch**

Date	Stage of production	Product	NPK content	Method of application	Concentration (g/l)

**Crop protection and PGR application: Not completed for this batch**

Date	Input type	Dose rate/water volume	Product name	Active ingredient	Application Method

Root hair assessment at transplant			Date: Not completed for this batch		
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			11		
2			12		
3			13		
4			14		
5			15		
6			16		
7			17		
8			18		
9			19		
10			20		

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

**Site A Batch 7**

Project title: The role of environmental factors in the incidence of Pansy mottle syndrome (PaMS) 2015		
ADAS: XBM5577 HDC: PO 016a		
Date	Comment	Initials
	No comments provided	

<b>Production information</b>	
<b>Seed details</b>	
<b>Breeder/ supplier:</b>	Syngenta
<b>Cultivar, genetics (F<sub>1</sub>):</b>	Delta light blue
<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>	25.8.15 (Batch no. 34028)
<b>Sowing method:</b>	Hamilton Drum seeder
<b>Location within Nursery:</b>	R71
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	Floor
<b>Position within location (e.g. any doors/vents nearby):</b>	Vent above
<b>Date covered (note if not milky plastic):</b>	N/A
<b>Date cover removed:</b>	N/A
<b>Module (cell number):</b>	288



<b>Module (cell volume):</b>	
<b>Growing media (product, specification, additives e.g. wetters). Obtain sample.</b>	TREF Growing Media
<b>Movement information:</b>	
<b>Transport method:</b>	
<b>Route (outdoors, indoors etc.):</b>	
<b>Duration:</b>	
<b>Covered?</b>	
<b>Growing on information:</b>	
<b>Date of transplanting:</b>	20.10.15
<b>Growth stage at transplanting (no. of leaves)</b>	4-5
<b>Location within Nursery:</b>	C51
<b>Floor, bench, stillage? (Include construction details (open mesh, polystyrene, concrete floor):</b>	
<b>Position of monitors within location (within 5 m of a doorway/vent/fans):</b>	
<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>	19.11.15
<b>Date of dispatch:</b>	
<b>Were any symptoms noted after monitoring stopped?</b>	

**Irrigation application: Not completed for this batch**

<b>Date</b>	<b>Stage of production</b>	<b>Volume</b>	<b>Method of application</b>	<b>Source (mains/reservoir/borehole)</b>

**Fertiliser application: Not completed for this batch**

Date	Stage of production	Product	NPK content	Method of application	Concentration (g/l)

**Crop protection and PGR application: Not completed for this batch**

Date	Input type	Dose rate/water volume	Product name	Active ingredient	Application Method

Root hair assessment at transplant			Date: Not completed for this batch		
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			11		
2			12		
3			13		
4			14		
5			15		
6			16		
7			17		
8			18		
9			19		
10			20		

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