







Use of AVG (ReTain) to increase fruit set

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Due to...

- Lack of pollinizers (early bloom)?
- Lack of compatible pollinizers?
- Poor stigmatic receptivity?
- Poor ovule longevity ?
- Thinning effects of other PGRs

Poor fruit set – Minneiska apple

Increasing Fruit Set

Cherries, pears and apples

AVG - Aminoethoxyvinylglycine



Increasing Fruit Set

Effects of AVG (ReTain) on fruit set



Extends flower viability by reducing senescence.





Helps maintain the abscission zone inactive





Use of ReTain to increase fruit set of Minneiska 2017 – Trial 1

Trt No.	Full Bloom May 3	Petal Fall May 16	10mm May 23	Flag color
1	UTC	UTC	UTC	White
2	Retain 1 pouch			Yellow Red dot
3		Retain 1 pouch		Blue
4			Retain 1 pouch	Purple

Minneiska/B9 – 7 years old Tunnel sprayer (Lipco) – 90 GPA 5 reps No Provide program

Cold Spring – 35-55F





Increasing Fruit Set with Retain Minneiska Apples – Trial 1

Number of fruit per tree



Duncan test (P<0.05)







Use of ReTain to increase fruit set of Minneiska

2017 – Trial 2

Minneiska/B9 7 years old Backpack sprayer – runoff 4 reps (3 trees/rep)

Trt No.	Pink Stage May 3	Full Bloom 5/10/17	Petal Fall 5/18/17	10mm 5/24/17
1	UTC1	UTC1	UTC1	
2	Retain ¹ / ₂ pouch			
3		Retain ¹ /2 pouch		
4			Retain ¹ / ₂ pouch	
5	Retain 1 pouch			
6		Retain 1 pouch		
7			Retain 1 pouch	
8				Retain 1 pouch
9	4 oz Apogee			
10		4 oz Apogee		
	4 oz Apogee			
11	Retain ¹ / ₂ pouch			
		4 oz Apogee		
		+		
12		Retain ¹ /2 pouch		
13		2 oz ProVide		
14		4 oz ProVide		
		2 oz ProVide		
15		+		
		Retain ¹ / ₂ pouch		
16		Retain ¹ /2 pouch		Retain ¹ / ₂ pouch



Fruit set



Increasing Fruit Set with Retain Minneiska Apples – 2017 Trial 2





Fruit set



Increasing Fruit Set with Retain Minneiska Apples – 2017 Trial 2







2018 – Trial 1

Trt No.	Full Bloom 5/16/18	Petal Fall 5/22/18	12mm 5/28/18	Flag color
1	UTC	UTC	UTC	-
2	Retain 1 pouch			PBD
3		Retain 1 pouch		Blue
4			Retain 1 pouch	OBS

Minneiska/B9 – 8 years old Tunnel sprayer (Lipco) – 100 GPA 5 reps No Provide program

Increasing Fruit Set with Retain Minneiska Apples – 2018 Trial 1



Ethylene evolution in apple flower/fruitlet - 2018



New York

Using AVG (ReTain) to Inhibit Ethylene Production and Increase Fruit Set

Minneiska flowers/fruitlets (2018)



New York

Using AVG (ReTain) to Inhibit Ethylene Production and Increase Fruit Set Minneiska flowers/fruitlets (2018)



Days after full bloom

New York





Preliminary Conclusions

No negative in fruit quality No increase in seed numbers Fruit size – crop load effect

Two applications of ReTain at (rate and timing) has shown better efficacy – when?