

**ETHREL SPRAYS for EARLY RIPENING of CIDER FRUIT:NACM 2K/4.1****Sites**

Sprayed at Bulmers Kinnersley and Monnington by Bob Field and Westhope Farm by Bob Bowen on varieties; Michelin, Dabinett, Browns Apple; Ashton Bitter, Ellis Bitter, [Sweet Coppin, Somerset Redstreak and Tremletts Bitter, not assessed]

**Trial rates**

Kinnersley Standard 0.5 L/ha  
 Medium 0.37 L/ha  
 Low 0.33 L/ha  
 Westhope Standard 0.5 L/ha  
 High 0.5 L/ha sprayed x 2  
 Monnington Standard 0.5 L/ha  
 All + Ranger at 1 L/1000 L at 44 gpa.

**Recommended rate** 500ml in 500 L /ha minimum = 1000 ppm  $\equiv$  480 ppm a.i.

**Spray dates and Weather**

Kinnersley 11<sup>th</sup> September, Westhope 12<sup>th</sup> and Monnington 19<sup>th</sup> September 2000  
 Warm and muggy at spraying and remaining warm for 2 days after.

**Table 1: Dropped fruit in response to spray [Percentage dropped].**

Site/variety	Ethrel rate	After 8 days	After 15 days	After 24days	Harvesting
Browns Apple	Standard	5	30	40-50	1 <sup>st</sup> week Oct.
[Kinnersley ]	Low	5	10	50	
Ellis Bitter	Standard	20	25-30	-	End Sept.
[Kinnersley ]	Low	25	40	-	
	Control	15-20	20-25	-	
Ashton Bitter	Standard	1	20	-	26 <sup>th</sup> Sept.
[Kinnersley ]	Medium	1	20-30	-	
	Low	1	20-30	-	
	Control	1	< 5	-	
Michelin	Standard	< 1	< 10	25	1 <sup>st</sup> week Oct.
[Kinnersley ]	Medium	< 1	1	10-15	
	Low	< 1	-	10	
Dabinett	Standard	-	-	50	-
[Westhope]	High	-	-	20	
	Control	-	-	5	
Michelin	Standard	-	-	10	-
[Westhope]	High	-	-	5	
	Control	-	-	5	
Sweet Coppin [Monnington]	Standard	-	30	-	-

**Table 2. Fruit size [diameter mm][\* where difference is significant]**

<b>Farm</b>	<b>Variety</b>	<b>Rate</b>	<b>20/9</b>	<b>26/9</b>	<b>5/10</b>
Kinnersley	Browns Apple	Standard	70	71	72
		Low	68	68	71
	Ellis Bitter	Standard	74	73	-
		Low	73	74	-
		Control	71	75	-
	Ashton Bitter	Standard	57	58	-
		Medium	57	59	-
		Low	57	59	-
		Control	57	57	-
	Michelin	Standard	-	57	55
		Medium	-	61	60*
		Low	-	60	59*
Control		-	-	56	
Westhope	Dabinett	Standard	-	-	58
		High	-	-	57
		Control	-	-	57
	Michelin	Standard	-	-	51
		High	-	-	50
		Control	-	-	51

**Table 3. Juice sugar [as percent sucrose]**

<b>Farm</b>	<b>Variety</b>	<b>Rate</b>	<b>20/9</b>	<b>26/9</b>	<b>5/10</b>
Kinnersley	Browns Apple	Standard	11.0	11.0	11.3
		Low	11.0	12.2*	11.7
	Ellis Bitter	Standard	12.4	12.6*	-
		Low	12.0	12.4*	-
		Control	12.2	11.5	-
	Ashton Bitter	Standard	13.0	12.8	-
		Medium	13.7	13.3	-
		Low	13.5	14.0*	-
		Control	13.8	13.2	-
	Michelin	Standard	-	12.7	13.3*
		Medium	-	13.3*	13.6*
		Low	-	12.5	13.1*
Control		-	-	12.6	
Westhope	Dabinett	Standard	-	-	12.1
		High	-	-	12.8
		Control	-	-	12.7
	Michelin	Standard	-	-	13.9
		High	-	-	13.6
		Control	-	-	13.1

**Table 4. Residual starch index [5 – zero] [20 – 22/9 samples only]**

<b>Browns Apple</b>		<b>Ellis Bitter</b>		<b>Ashton Bitter</b>	
Standard	2.5	Standard	0.5	Standard	3.0
Low	2.8	Low	0.5	Medium	2.7
		Control	0.3	Low	3.0
				Control	3.0

**Results**

Fruit drop was good even at the lower rates used [Table 1]. Early maturing varieties Browns Apple and Ellis Bitter had dropped convincingly in 15 days, as had Sweet Coppin, a later maturing variety on another site. Ashton Bitter had just started to drop by the time it was harvested [15 days after spray] but fruit on the treated trees were reported to come off much more readily with less effort from the mechanical shaker, and less damage to the foliage and spurs. Michelin and Dabinett were ready to shake in early October after 21 days, a significant advance for Dabinett which normally matures towards the end of the month.

Although fruit was sometimes smaller on the treated trees it was not significantly so [Table 2]. In fact some of the treated Michelin fruit was larger by the time it was harvested.

All treatments were sampled to extract the juice [Table 3] but residual starch was assessed only on a few samples [Table 4].

The earliest variety to be harvested was Ellis Bitter. Juice sugar from the ethrel treated fruit was significantly higher than unsprayed which may have taken up more water in the last days before harvest, so diluting the juice.

Browns Apple fruit at the lower level of spray initially had a higher sugar level but this difference was not apparent 2 weeks later at harvest.

The sugar levels in the Ashton Bitter fruit from the lowest ethrel rate were significantly higher than the unsprayed at harvest after only 15 days.

All the treated Michelin at Kinnersley had higher sugar levels after 25 days, but there were no great differences in the Michelin and Dabinett juice sugars at Westhope in that time in spite of the high rate of application.

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