

Cold Hardiness: It Takes More Than A Cold Hardy Cultivar

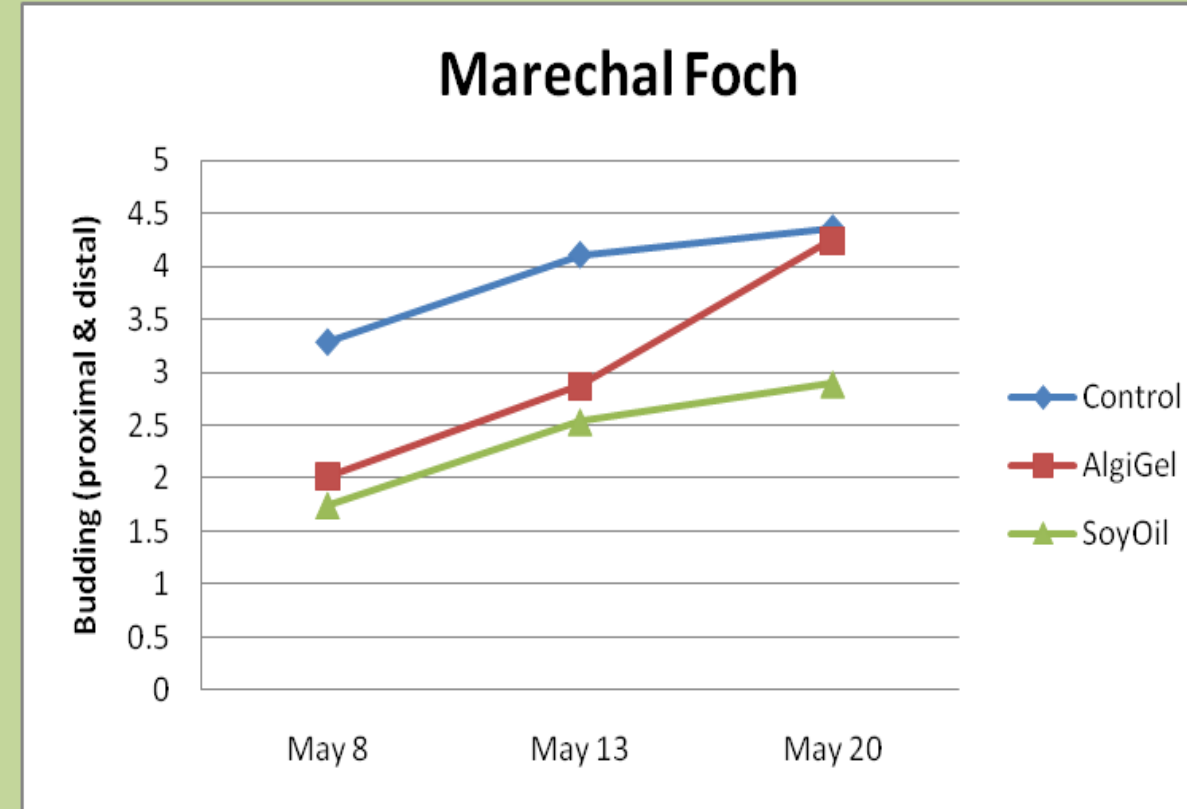
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Introduction: Nebraska winters can be harsh, even brutal and certainly damaging to grapevines. With ambient temperatures that can plummet to the -10 to -25 (degrees F) range for anywhere from one night to a week; volatile temperatures which result in 60 degree F temperatures in January and February, and late frosts (even late into May), extensive damage to early budding grapevines can and will occur.

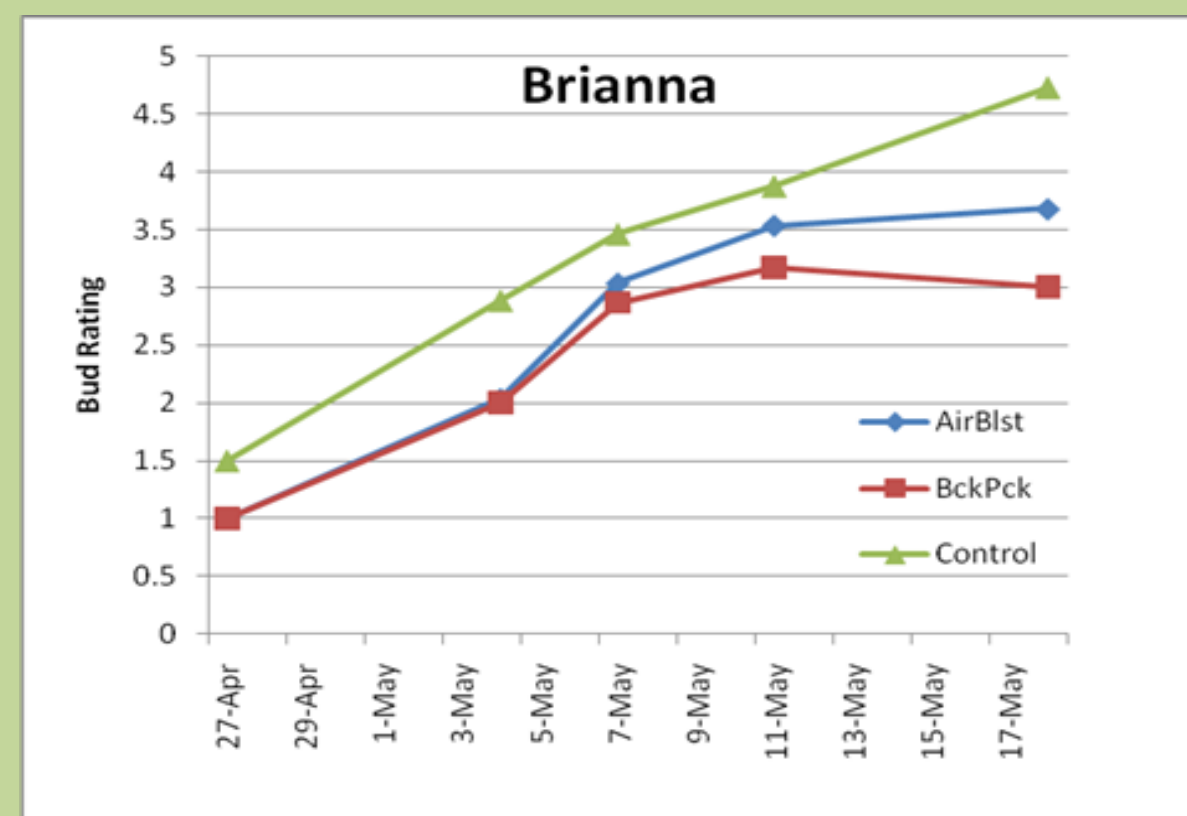
Purpose: The purpose of this research was to evaluate techniques designed to enhance grapevine cold hardiness, specifically effects of late spraying of dormant vines with vegetable oil designed to delay bud break.

Year 1



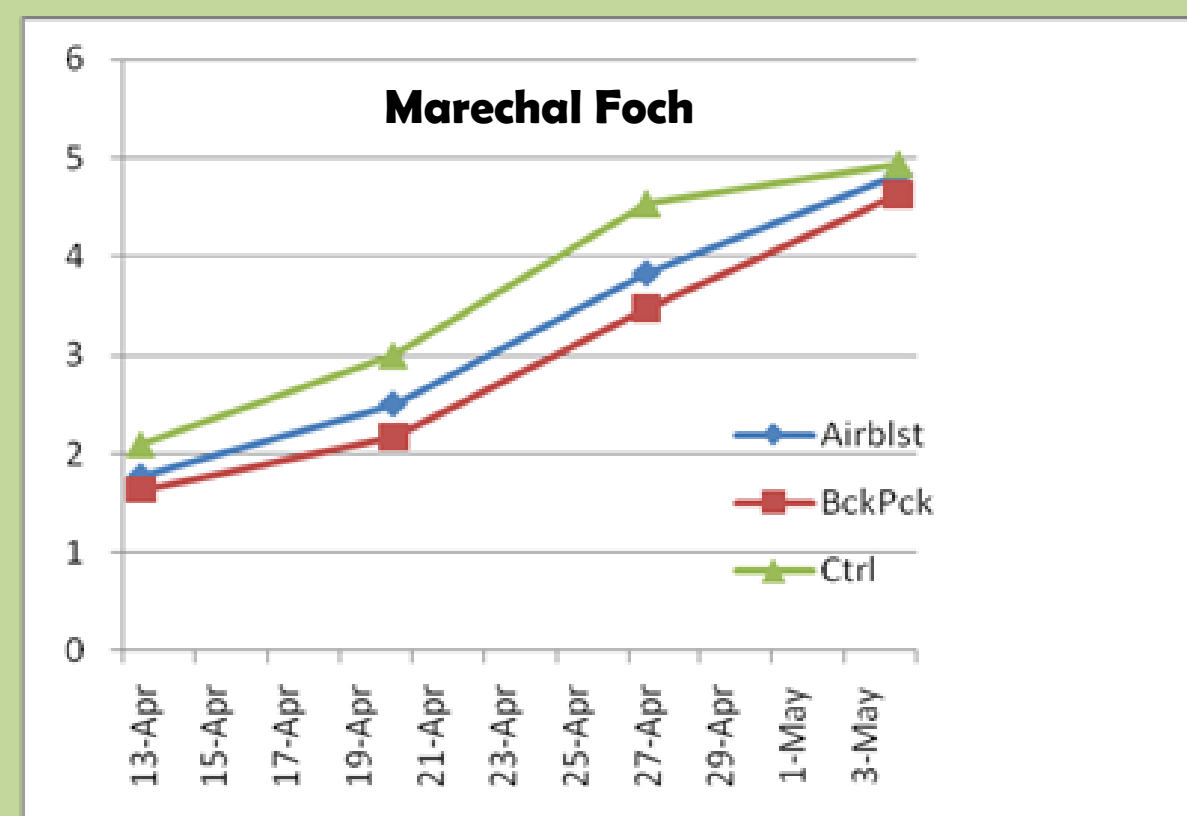
Amigo Oil > Controls
Average Bud Delay=
14-21 days

Year 2



Amigo Oil > Controls
Backpack > Airblast
Average Bud Delay=
>2 weeks

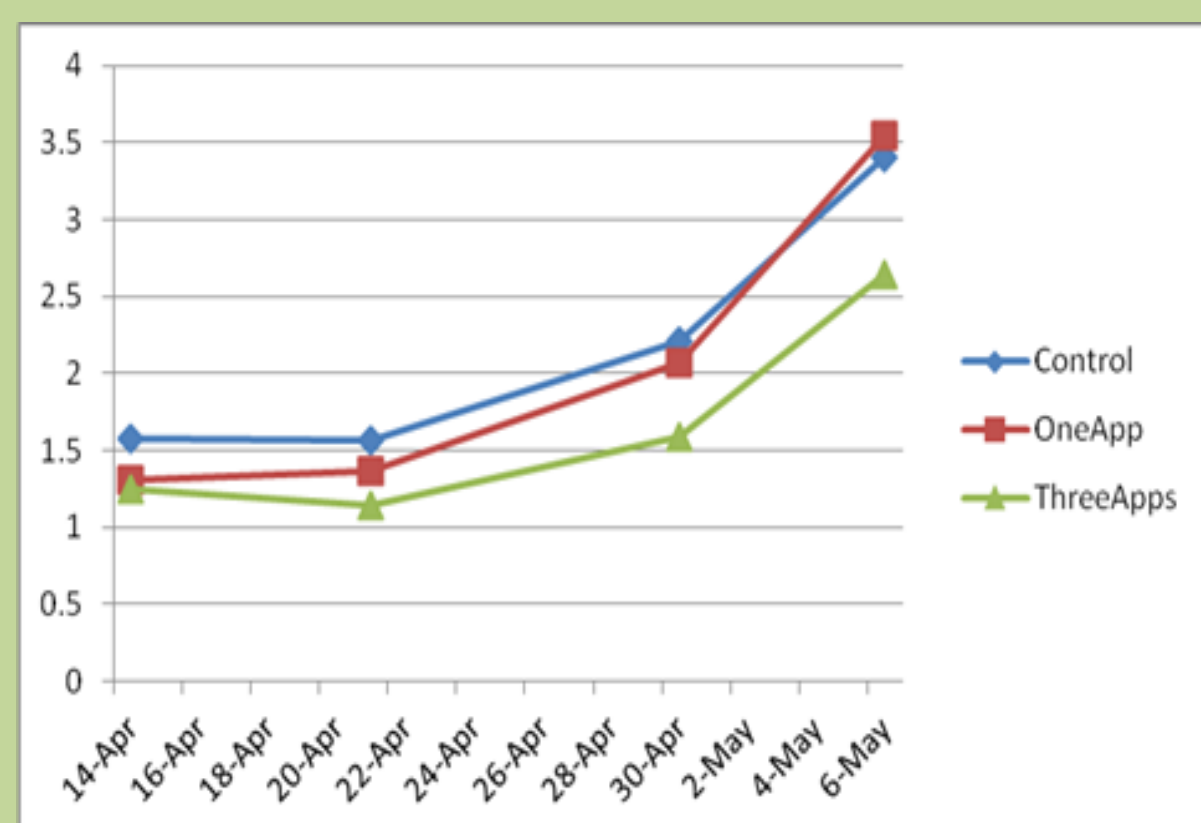
Year 3



Amigo Oil > Controls
Backpack > Airblast
Average Bud Delay=
4-7 days

Year 4

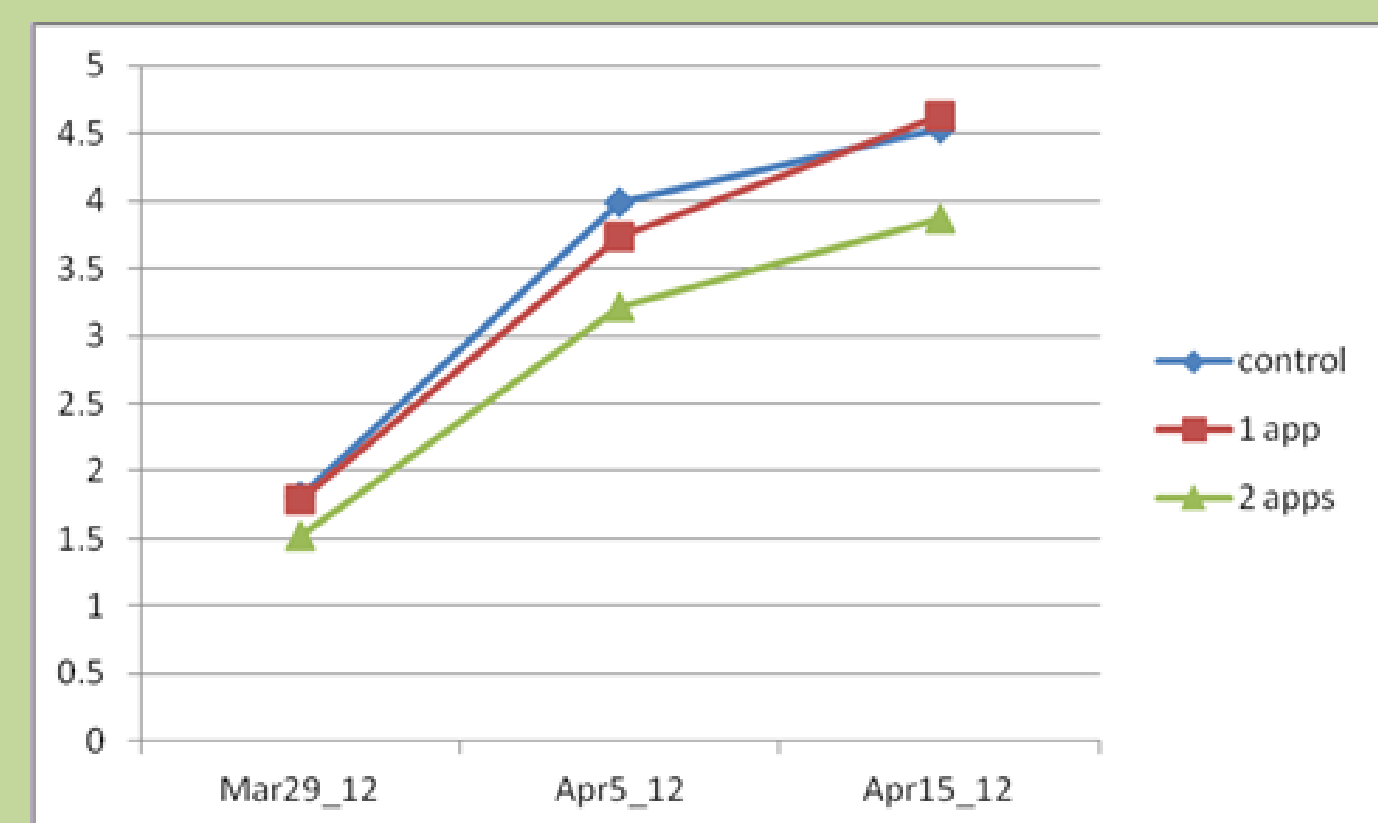
Marechal Foch
Multiple Applications



Approx. 6 day delay in bud break

Year 5

Marechal Foch
Multiple Applications



Approx. 12-14 day delay in bud break

Four – Six Year Average

Cultivar	Average Delay in Bud Break (days)	Range
Marechal Foch	9.60	4 – 21
St. Croix	12.75	8 – 21
Brianna	8.33	5 – 13
Lacrosse (one year only)	5.5	5 – 6
Edelweiss (one year only)	6	6

Cost/Benefit Comparisons

One Year: Revenue = \$46,200

- Cost = \$2,672
- TOTAL NET BENEFIT = \$43,528
- Expected Revenue with no treatment = 32,340
- Total difference = -(\$11,188) loss from no treatment

Five Year: Revenue = \$231,000

- Cost = 13,360
- Net Benefit = 229,664
- Expected Revenue with no treatment = 161,700
- Total difference = -(\$67,964) loss from no treatment