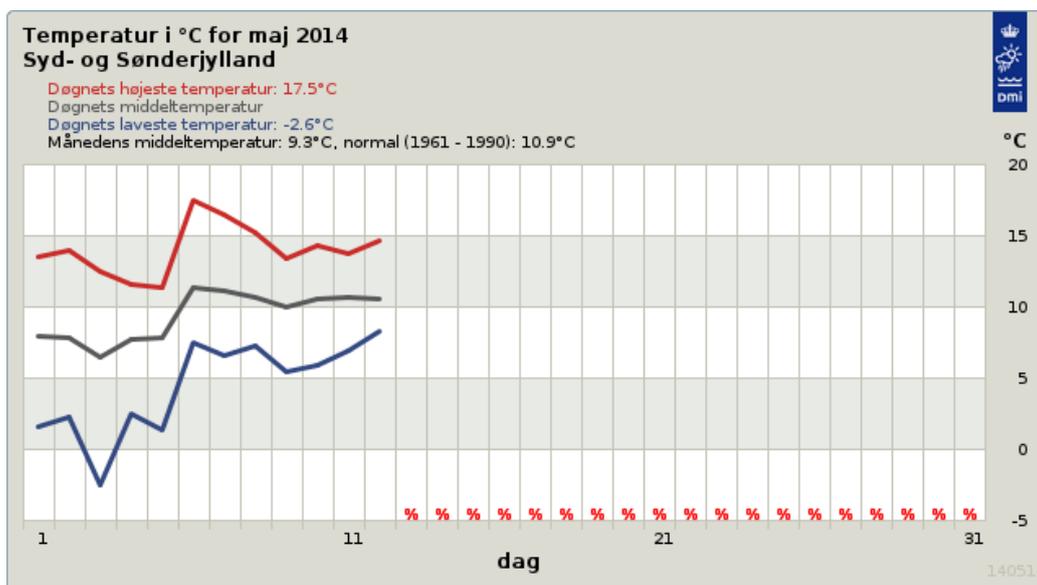


Night frost at night between 3 and 4 May 2014 test of FroSTect from Plant Health Care in London UK.

By Jens Madsen

I had no energy to see my grape harvest disappear in only working with frost damage vines, which result have seen in the growing seasons 2011 and 2012. I have long looked tests and the results of Harpin Protein on horticultural and agricultural products. Other products have also been on the table for trials. This has so far been the best and lowest cost for my wallet and then of course my vines. My preliminary conclusion, it could pay off with simple means to an all-hazards. The statement you see below:



Registration on my locality : 1 pcs . portable thermometer 40 cm. above the ground and one of approx. 2m high its the peak. There is not undertaking weather station recording but together equation with DMI 's weatherstation in Vojens Airport

| | | |
|----------|--------------|------------|
| Kl. 0200 | 40 cm. - 3,6 | 2 m. + 1,8 |
| Kl. 3.15 | - 2, 3 | + 0.8 |
| Kl. 4.20 | - 2,1 | - 1,4 |
| Kl. 5.10 | - 2,3 | - 2,8 |
| Kl. 7.30 | - 0,3 | + 0.6 |

| | |
|---|-------|
| Kvotate DMI. Weather forecast averigde of 10 minutes intervallic. | |
| Kl. 01.00 - 02.00 | -0,3 |
| 02.00 - 03.00 | -0,4 |
| 03.00 - 04,00 | - 1,1 |
| 04.00 - 05.00 | - 1,6 |
| 05.00 - 06.00 | -2,2 |
| 06.00 - 07.00 | -2,6 |
| 07.00 - 08.00 | + 0,6 |

Approval of harpin protein messenger in the United States at Cornell Uni.

http://pmep.cce.cornell.edu/profiles/biopest-biocont/bioprotein/harpin/messngr_mcl_1003.html

Harpin used for a variety of horticultural products worldwide, particularly in Asia. Both for quality improvement, etc. stronger transport sensitivity. and reduce insect damage.

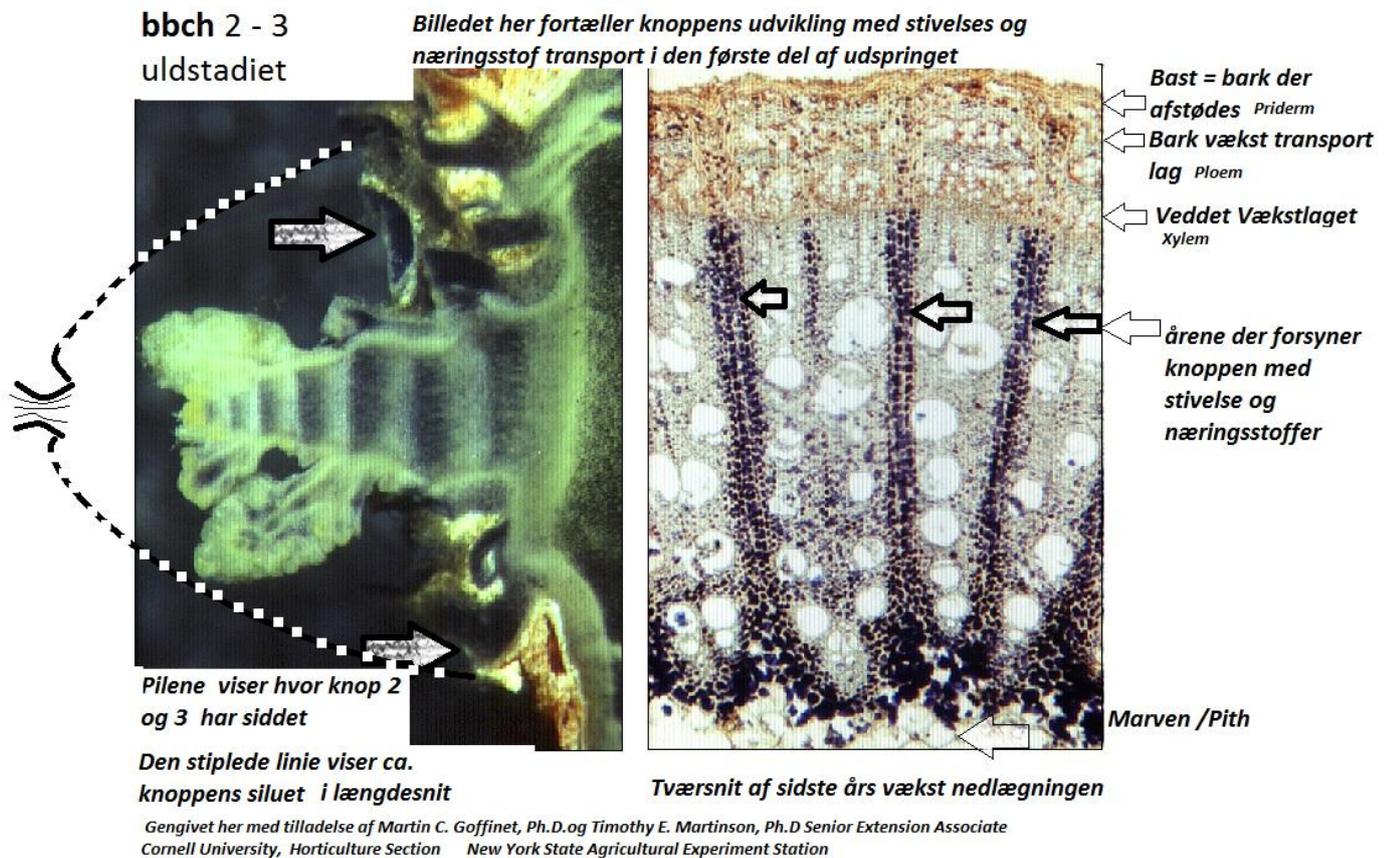
The company Plant Health Care in the UK is among other things a range of products composed of viticulture. <http://www.planthealthcare.com/technology/harpin/>

Here, in the case of a protein product which gives plants an allergy like response (the plant stress). This results in concentrated supply of nutrients and starch for the protection of new herbaceous buds. Let us take a look into what happens in the source phase, the example here is taken from the US with the permission of editing and publishing:

The entire source is controlled by the humidity, the temperature in the air and soil and the fluid pressure from the roots that fill the plant into the cavity produced since the plant went into winter rest. It is opfyldningsproceesen is amplified with harpin protein as frost tolerance is increased without sacrificing any. ecology.

Read the whole article dealing budbreak process link are listed at the end of this article.

I applied FroSTect in a solution 200 gr. Pr. Ha. = 2 gr. In 10 L. water applied to the drip line. To be applied about 36 hours before the frost enters the plant can react on this.



The picture are setup with a Danish translation to get the amateur grower to understand.

COST: 200 gr. FrosTect purchased in England about 475,00 kr. Courier approximately 275,00 kr total of 700,00 kr. App. 120,00 \$

Technical Applications of 600 vines around 4.5 hours with a knapsack sprayer.

Results absolutely positive photos taken 10 days after the frost in control result.

Here is a mutation of Zilga planted lowest in the grounds. Here are shot singed, partially scorched and one



without

Det er skuddet fra øverste venstre hjørne i billedet oven for.

It is shot from the top left in the picture above.

The shot here is partly scorched can possible survive as singeing only on leaf 1 and the tip of the leaf 2 for buds appears undamaged.



From the same vine are the influence damaged?



Valiant one hardy Riparia type there was grapes in the harvest from the shoot to the right.



Here Michurinetz burnt one bud who have been in shelter of the wind and have avoided the spray application, secondary and third buds are alive.



At 12 of June still alive.

At the next photo round was it dead.

One Oceola Muscat, E.S. 8-2-43 a very hardy variety. Lichen and moss in the periderm are caused by the high content of nitrogen in our air from the pig farms it is not necessary to fertilize with this during the growing season.

The new vine is one replacement vine and it is not damaged by the frost.





The little one from above healthy.



One premiere shoot of Kristaly – an interspecific (piwi) not harmed.



The whole vine in vertical Cordon, planted 3 m. from the thermometer 40 cm. above the soil.

One perfekt from fra Zilga 4 the vertical vine.





Damaged Influence and
One shoot with damaged internodes very short.



It is positive to find inflorescences in the row with most damages .



Leaves and buds
damages who seems to be eaten of caterpillars, but it is



happened in BBCH stage 2-3 wool stadium.

L À Cadie Blanc V 53 261 was a little bit late to bud break and almost not harmed . Foto 12 juni



It is not a notice over my vine collection.

Sommer 2014 forløb således:

Lemmermeyer (synonym) for an Italian Interspezifik Vinefera who is almost ripening each year .



Found at Bach-Wagener Wine grower in Thörnish Mosel. References none - very neutral aroma.

Even growth failures popped up in premiere buds.



The small one 2th and 3th buds fine, the big premiere from below has Growth disturbance in 4th or 5th but with great influences.

The next is GM 57 318 one vine who is not in the Geisenheim cataloged but taken return from America no damages and in full vigor.



Hasansky Sladky not harmed and in full vigor.



K.W. 94-2 fra Nova Scotia 12 Juni the same.



Lucy Kuhlmann 12 Juni 2 rows in full vigor with a lot influences .



10 Castel vines who were damaged in the influences , was not to see at once .



the influences was made but not perfekt- -



These tiny berrys was gone by the Blakbirds it did not last to pick them.

KW 94-2 (Vindemere) from Nova Scotia first harvest at 4 year old vines –here the optimism was back .
15 Brix at 30 of September Those vine have been frozen the first two years after planting.



Hasansky Sladky harvested at 30 sept. 92 Oechsle 12.2 Brix



LáCadie Blanc V53 261 harvested 10 okt. 72 Oechle 18 Brix



Marquette harvested 10 okt. 78 Oechle 19 Brix



I do hope this article are helpfull for all wine growers in Scandinavia.

Here are the adress for permision to use the picture of one bud in stadie BBCH 2-3

Martin C. Goffinet, Ph.D. og Timothy E. Martinson, Ph.D Cornell University,
Horticulture Section New York State Agricultural Experiment Station.

Artiklen omhandler hele udsprings fasen: **How Grapevines Reconnect in the Spring**

link to the article : <http://grapesandwine.cals.cornell.edu/newsletters/appellation-cornell/2012-newsletters/issue-9/how-grapevines-reconnect-spring>