



Grapevine

Abiotic stress - frost



TIMAC AGRO



Timac AGRO
Canada

How to help grapevines recover after a difficult frost

Cold snaps and frosts have hit many orchards and vineyards these last few weeks. High yield reduction will be expected due to these cold waves, occurring after weeks of heat and crop development.

100%

Is the percentage of a vineyard that can be damaged due to frost

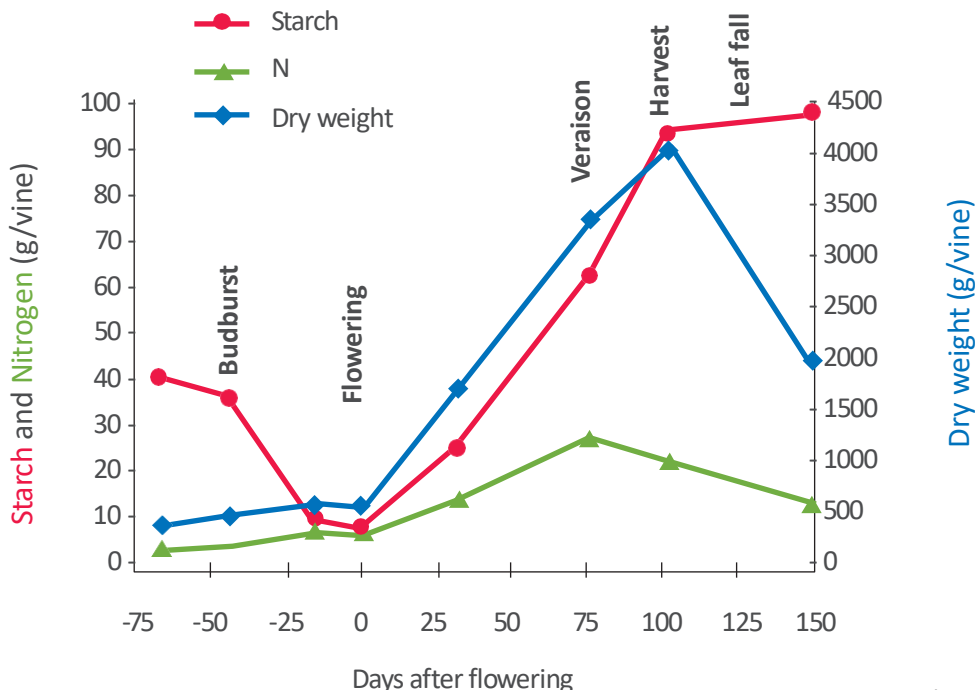
① TIMAC AGRO INSIGHT

During dormancy, grapevine can support temperatures as low as -15°C. However, as soon as the vines bud, they become more vulnerable. If frost occurs, the young shoots dry and die. The final yield is thus highly reduced, but this reduction may not reach 100%. In fact, good weather conditions, with rain and good temperatures can relaunch the budburst. But the drying of the first bursts will impact this recovery. As grapevine was already budbursting, starch and N storage have been consumed by the plant for its regrowth. Storage of starch and N are not at their maximum anymore for the second budbursting. This has a direct impact on the energy of the crop and on the yield. Fertilisation and biostimulation must help the plant to sustain the coming flowering period to preserve the forming fruits.

TIMAC AGRO products can help grapevine trees to recover and protect the coming harvest.



EVOLUTION OF STARCH AND N CONTENT IN GRAPEVINE ROOTS, AND DRY WEIGHT AFTER GRAPEVINE CYCLE



Hawk, J.a in the Nort



② TIMAC AGRO SOLUTIONS

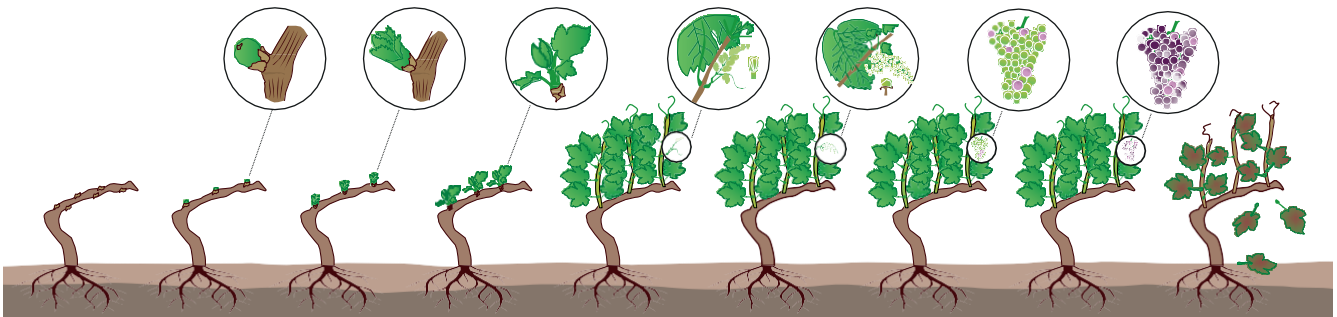
TIMAC AGRO Technologies recommends two programs depending on the impact of frost on the trees

IF MORE THAN 50% OF THE VINEYARD IS FROZEN WITH A RECOVERY AT FLOWERING



- Stimulate the vineyard
- Help to recreate a potential yield, even if it is reduced
- Preserve the vineyard from other stresses
- Recover storage and bud initiation for n+1

RECOMMENDATIONS



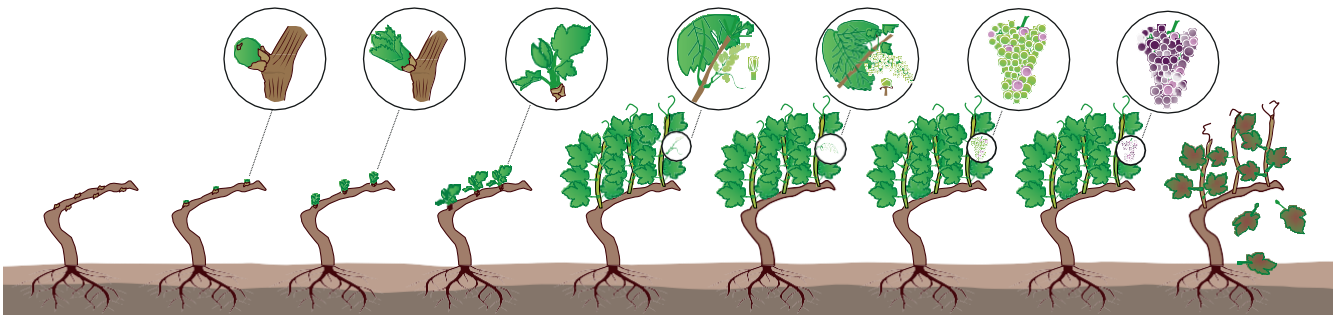
- **Product application:** FERTILEADER Magical
- **Application stage:** 3 - 5 leaf stage
- **Application dose:** 3 L/ha

IF THE WHOLE GRAPEVINE IS NOT FROZEN (<20%), WITH A RECOVERY AT FLOWERING



- Help plant development
- If there is a vegetative development, stimulate the vineyard
- Increase potential yield (+10 to 15%)
- Recover storage and floral initiation

RECOMMENDATIONS



- **Product application:** FERTILEADER Vital + MAXIFRUIT
- **Application stage:** 3 - 5 leaf stage + Berry growth and berry pea-size
- **Application dose:** 2L/ha FERTILEADER + 2L/ha MAXIFRUIT + 2L/ha MAXIFRUIT