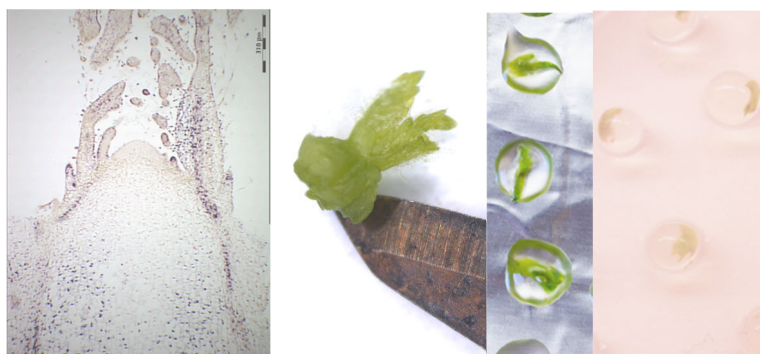


<b>3 Virus</b>	<b>Kryopreservering av plantevirus</b>
	<i>Cryopreservation of plant viruses</i>

Plant viruses, positive controls for validation of diagnostic methods, require special preservation methods to ensure long-term viability/infectivity of the sample and to maintain the original characteristics. Preservation methods that are commonly used are: low temperature storage at -20°C or -80°C, freeze-drying, and virus maintenance ex situ (such as greenhouse). The latter is needed when virus can otherwise not be preserved, or virus cannot be transmitted by mechanical transmission, which many strawberry and raspberry viruses belong to. It is difficult to grow the viruses infected materials continually without any changes: free from other diseases and pests, or virus characterization can be lost. How to maintain these viruses has always been a challenge.

Successful preservation of apple stem grooving virus (ASGA), chrysanthemum stunt viroid (CSVd) and chrysanthemum chlorotic mottle virus (CChMVd) has been reported with cryopreservation without losing activity and infectivity afterwards. These data indicate that cryopreservation techniques have the potential to be applied for virus preservation.

In a new project (Norway and Czech Republic collaboration project) starting from 2021-Healthy berries in a changing climate, we would like to apply cryopreservation in conservation of strawberry and raspberry viruses, by cryopreservation of plant materials that are infected with known viruses. Strawberries and raspberries that are infected with certain/several viruses can easily be cryopreserved,



Relevant molecular techniques such as localization and tissue culture will be included.  
Photo: Zhibo Hamborg.

afterwards taken up and grown as tissue culture and further on in a quarantine greenhouse when good positive controls are needed. Certainly, validation of cryopreserved virus genetic stability, viability and infectivity is needed to evaluate this technique for broad application.

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