

Apple fruit quality and physiological disorders

Master thesis can be written in Norwegian or English. Most of the experimental work (storage trials) will take place at NIBIO Ullensvang. It is possible to combine the master thesis work with a summer job at NIBIO Ullensvang. NIBIO Ullensvang offers accommodation. Molecular work (real-time PCR) will take place at NIBIO Ås. All topics are best suited for 60 credits but can be modified to 30 credits.



Storage experiments with the new apple cultivar 'Asfari'

The yellow apple cultivar 'Asfari' is a relatively new apple variety grown in Norway. Therefore, little information regarding the potential storage length and optimal storage strategies are available. Different storage lengths and methods will be tested and will be set in context with fruit quality. The experimental work will consist of setting up field trials, harvesting, fruit quality analysis and the assessment of fruit for physiological disorders. Potential Master students should be aware that the fruit will be stored until March 2025. Therefore, the thesis should be delivered in autumn 2025 or in spring 2026.



Skin greasiness on apple fruit

The apple cultivars 'Red Gravenstein' and 'Summerred' are early cultivars and are popular among consumers. However, fruit peel can get greasy during storage. Preliminary experiment results have shown that storage at lower temperature can decrease greasiness, but other physiological problems can occur when fruit are stored at low temperatures. More knowledge about the molecular processes that lead to greasiness especially related to the ripening hormone ethylene are necessary to understand. The experimental work will consist of harvesting, fruit quality analysis, assessment for greasiness, RNA-isolation, cDNA preparation and real-time PCR. The practical experimental work can be completed in autumn and writing can be done in spring.



Crop load

To have the ideal fruit to branch/tree ratio it is critical to ensure optimal fruit size and quality. Crop load management is one of the most important management strategies and making sure trees have the ideal crop load poses a big challenge for fruit growers year after year. 'Eden' is a new apple cultivar grown in Norway and more research regarding the optimal crop load and the effect of a too high and too low crop load is needed. Crop load affects the fruit size which affects the development of physiological disorders before and after storage. The experimental work will consist of setting up field experiments, hand thinning, harvesting, fruit quality analysis and the assessment of fruit for physiological disorders. The writing can be finished in late autumn and writing can be completed in spring.

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Practical questions:

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