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Summer storage of snow in a sub-alpine climate

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Summer storage of snow related to cross-country skiing has increased in the Nordic countries during the last decade. There are several successful examples of snow storage after the first experiments in Ruka in Finland in 2001. Østersund in Sweden has for more than 10 years stored snow (60.000 m2) to be prepared for competitions in late November and early December. Beitostølen ski resort in Norway started in 2012. The snow storage at Beitostølen has been a great success to ensure early season snow for exercising and competitions. The stored snow is suitable as a base layer for cross country skiing. Meteorological data and snow melt under sawdust/wood chips has been monitored for 4 seasons (2012-2016). A preliminary model of snow melt has been developed. In the 2015/2016 season an additional field experiment was run comparing surface melt under sawdust with different combinations of geotextiles and one aluminum folio covered insulation. The results show that sawdust is superior in protecting the snow from melt in this sub-alpine climate. The most cost effective method will however depend on local weather conditions, site specific costs and time of the year when the snow is needed.