OLSSON, ÅSA*, LARS PERSSON and ROBERT OLSSON, NBR Nordic Beet Research Foundation, Borgeby Slottsväg 11, 237 91 Bjärred, Sweden. **Damage to sugar beet roots caused by harvesters; influence on rots and sugar losses during storage.**

Storage of sugar beets with a minimum of sugar losses requires that only undamaged, clean and healthy beets are harvested and put in the piles. The objectives of this study were to determine the influence of beet damages caused by harvesters, on rots and sugar losses during storage in Sweden. Winter temperatures in the south of Sweden are variable and range from -10ºC to + 10ºC. Sugar beets were harvested with two different types of harvesters to create two classes of damaged beets: gently harvested beets and roughly harvested beets. Hand harvested (more or less undamaged beets) were used as control. After harvest, tip breakage, surface damage and cracks were evaluated on approximately 25 roots in each of eight replicates per damage level. For the majority of the gently harvested beets (90%), the diameter of the broken off root tips were less than 2 cm which can be compared to 11% for the roughly harvested beets. The beets were then stored in two temperatures, 5ºC and 15ºC. After storage for 63 days, all roots were evaluated for fungal growth and rots on surface and on root tips. Sugar loss/day was also determined. The results show that provided that the temperature is low during storage, around 5ºC, sugar loss/day are similar for both gently and roughly harvested beets. If the temperature is increased to 15ºC, the sugar loss/day for roughly harvested beets (0.26% sugar/day) is almost triple that of the gently harvested beets (0.10% sugar/day). The root tip was the most sensitive part of the root and wounded tips provided direct entrance for fungal attacks by e. g. *Botrytis*. Other fungi that were isolated from rotted tissue were *Penicillium, Sclerotinia* and *Fusarium* spp.