

A review of berry harvest machine development in Sweden

S. Olander

Acta Horticulturae 965: 171-177. 2012.

Abstract

The development work included in this paper started at the Department of Agricultural Engineering at the Swedish University of Agricultural Sciences by the author in the early 1980s. The first years were represented by studies of technology for mechanical harvesting of raspberries, black currants, strawberries, and tree fruit. Development of a strawberry harvester based on earlier work at Michigan State University was started in 1986, completed in 1989 and was tested during four seasons with good results. Work with a novel cultural system for bush fruit, High Density Cultural System (HD), started in 1986. The experiment included raspberries and black currants planted with a density of 40,000 bushes per hectare. Harvest measurement in the HD system was by cutting down four bushes in the center of the plots and picking the berries by hand. High yield was recorded already by the first harvest in the second season. Development of a complete harvester started in 1989. The cutoff bushes were fed on to a grid conveyor where the berries were shaken off by a new type of shaker shaking in axial direction. In experiments with single cutoff branches, over 99% efficiency was recorded. The complete harvester had a cutting header, shakers and separation of debris and was tested during four seasons in the early 1990s. The black currant harvester was also tested in rose hips and sea buckthorn. Rose hips were successfully harvested, while sea buckthorn required shaking at higher frequencies than could be achieved by this harvester.