

Baltic ForBio, WP 2, GA 2.4

Information about thinnings demonstrating biofuel and roundwood production

Information about stand

Basic information

State	Latvia
Region	Vidzemes
Stand ID	129-8, <i>Pļaviņu region</i>
Area (ha)	3.36
Thinning year / season	2020
Topic	Thinning using Malwa harvester

Characteristics of work environment and soil bearing capacity

Poor logging conditions.

Location of demo site



Coordinates of plot centre: X - 613452 Y - 284661 (LKS92)

Figure 45: Location of compartment⁵⁵.

Stand characteristics before harvesting

Average DBH (cm)	13
Average height (m)	14
Number of trees (trees per ha⁻¹)	1690

⁵⁵ Background map from Google maps and map of Latvia from www.envirotech.lv

Growing stock (m³ ha⁻¹)	251
Stand composition	10E
Stand age during thinning	34
Dominant species	Spruce
Stand type	As (<i>Myrtillosa mel.</i>)

Stand management targets

To increase forest value by extraction of damaged and small size trees and to ensure favourable growth conditions in the stand. Harvesting is done so to reduce negative impact to environment (avoid ruts formation, mechanical damages of remaining trees and soil compaction). Small dimension trees should be used for biofuel production and from bigger trees standard roundwood assortments (small logs and pulpwood) should be produced.

Stand characteristics after thinning

Average DBH (cm)	18
Average height (m)	17
Number of trees (trees per ha⁻¹)	890
Growing stock (m³ ha⁻¹)	123
Stand composition	10E
Dominant species	Spruce



Figure 46: Stand characteristics after thinning⁵⁶.

Mechanical damages due to thinning

Damage to the remaining trees does not exceed 2%, no ruts have been detected.

Applied work method in thinning

Work order considers thinning to minimal basal area or number of trees according to average tree height after thinning.

Distance between technological corridors 20 m with "ghost paths" between the corridors, which are used only by harvester.

Logs are located along the technological corridors. Undergrowth trees are not extracted before mechanized thinning.

Harvesting is done using compact class harvester Malwa. Forwarding is done using compact class machine Malwa.

⁵⁶ Photo G. Saule.



Figure 47: Harvester Malwa⁵⁷.

Harvesting productivity

While producing biofuel in pre-commercial thinning (average extracted tree $D_{1.3}$ 10 cm), average productivity of harvester is $4.7 \text{ m}^3 \text{ h}^{-1}$.

⁵⁷ Photo G. Saule.