Productivity in forwarding of logging residues

- Effects of fresh and dry residues

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Why are fresh or dry residues an issue

- Easy coordination with harvesting operations
- Less risk for soil damage
- Increased recovery rate

- Higher fuel quality
- Lower nutrient removal from the stand
- Increased forwarder utilisation
Forwarding of logging residues

- Low utilisation of forwarder load capacity
- Modified load carriers
Field study

Aims

• Do residue status affects forwarding time consumption per odt

• Does it affect forwarder load size in odt
Results

No differences in

- Load size
  - 4.1 odt fresh
  - 4.2 odt dried

- Machine speed
  - with or without load

- Total time for loading and unloading
Results

Loading and unloading
(minutes/odt)

Residue concentration  (odt/100 m)

- Fresh
- Dry
- Regression
Results

- Dry material
  - Slower collection phase
- Fresh material
  - Slower unloading
Future work

• Only one machine was studied
• 3 stands adjacent to each other
Conclusions

Fresh vs. dry residues

• No differences in Forwarder productivity
  - given equal concentration of residues

• Indirect effects on productivity may exist
  - due to differences in residue concentration
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