The logistic potential of large chip trucks and chipper truck in a combined system

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The concept

- Standard GWW: 64 ton
- Test vehicles: 74 ton
- Chipper-truck is a common system but usually as independent truck
Roughly...

- Chipper truck 74 ton: 500 000 Euro
- 64 ton chip-truck: 300 000 Euro
- 74 ton chip-truck: 400 000 Euro
Objectives

• To study and evaluate the system in terms of performance and profitability.

• To find bottlenecks and factors for improvement.

• To evaluate different vehicle-types in cooperation.
Vehicles in the analyze

1. **Chipper-truck**, trailer with walking floor, 74 ton GWW
2. Chip truck, walking floor, 74 ton, extra trailer (**Walking74 2T**)
3. Chip truck, tilting, 60 ton GWW (**Tilting60**)
4. Chip truck, tilting, 74 ton GWW (**Tilting74**)
5. Chip truck, walking floor, 74 ton GWW (**Walking 74 1T**)
Timeshares for Walking74 2T

- At landing [PROCENT]
- At industry [PROCENT]
- Maintenance and other [PROCENT]

[Diagram showing the distribution of timeshares among different categories]
Weighing in [PROCENT]

Shunting at industry [PROCENT]

Unloading, truck [PROCENT]

Unloading, trailer [PROCENT]

Loading, truck [PROCENT]

Loading, trailer [PROCENT]

Shunting at landing [PROCENT]

Waiting [PROCENT]

Weighing out [PROCENT]

Drivers break [PROCENT]

Repair [PROCENT]

Service [PROCENT]

Tanking [PROCENT]

Other [PROCENT]
Timeshares for Chipper-truck

- Chipping: 50%
- Waiting: 10%
- Move to new landing: 5%
- Breakdown: 15%
- Repositioning within area: 10%
- Establishment (on and off): 10%
Total time at industry

- Chipper-truck
- Walking 74 2T
- Tilting 60

- Min
- Average
Performance

The graph shows the performance of different transport methods as a function of transport distance. The x-axis represents the transport distance in kilometers, while the y-axis represents the tonnage per hour (Ton/h). The lines correspond to different transport methods:

- **Chipper-truck**: Black line
- **Walking74 2T**: Blue line
- **Tilting60**: Yellow line
- **Tilting74**: Orange line
- **Walking74 1T**: Pink line

The performance decreases as the transport distance increases for all methods.
Conclusions

• The gain of high capacity increases with distance.
• Terminal times critical on short distances.
• Much to gain with a tilting truck – but what about the trailer…
• Simulation studies are needed