Bucking accuracy of alder and oak logs harvested in coppice stands during and after the growing season

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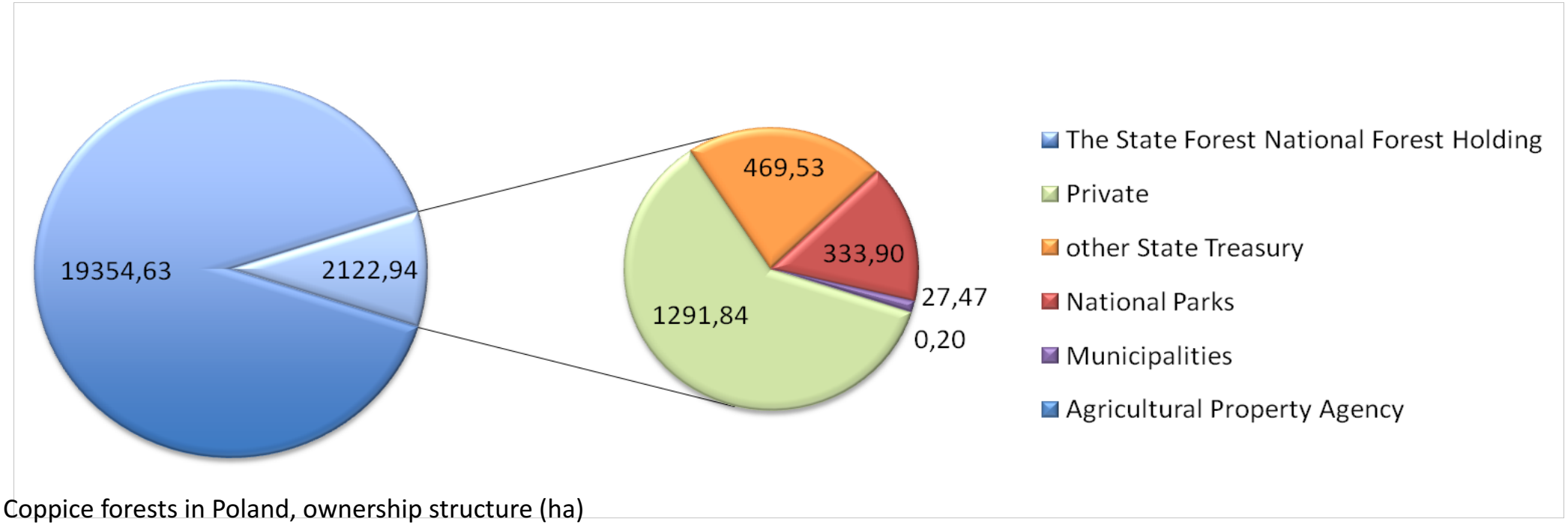
Forest management in Poland is focused on high forest system. Stands of seed origin provide timber of high quality, which corresponds to current demand of timber sector. Forests cover almost one third of Poland, 7 094 696 ha is under the State Forest National Forest Holding management.



Coppice forests in Poland, ownership structure (ha)

Coppice forests occur in Poland very occasionally and is considered as less important forest management type. Total area of coppice in Poland amounts to 21 477.57 ha and almost 89% belongs to the State Forests.

Black alder coppice in Pułtusk Forest District (M. Rosińska, 2015)

Aim

The objective of the presented research was to find out:

1) the bucking accuracy of alder and oak logs during and after growing season

Main product, pulpwood 2.50 m

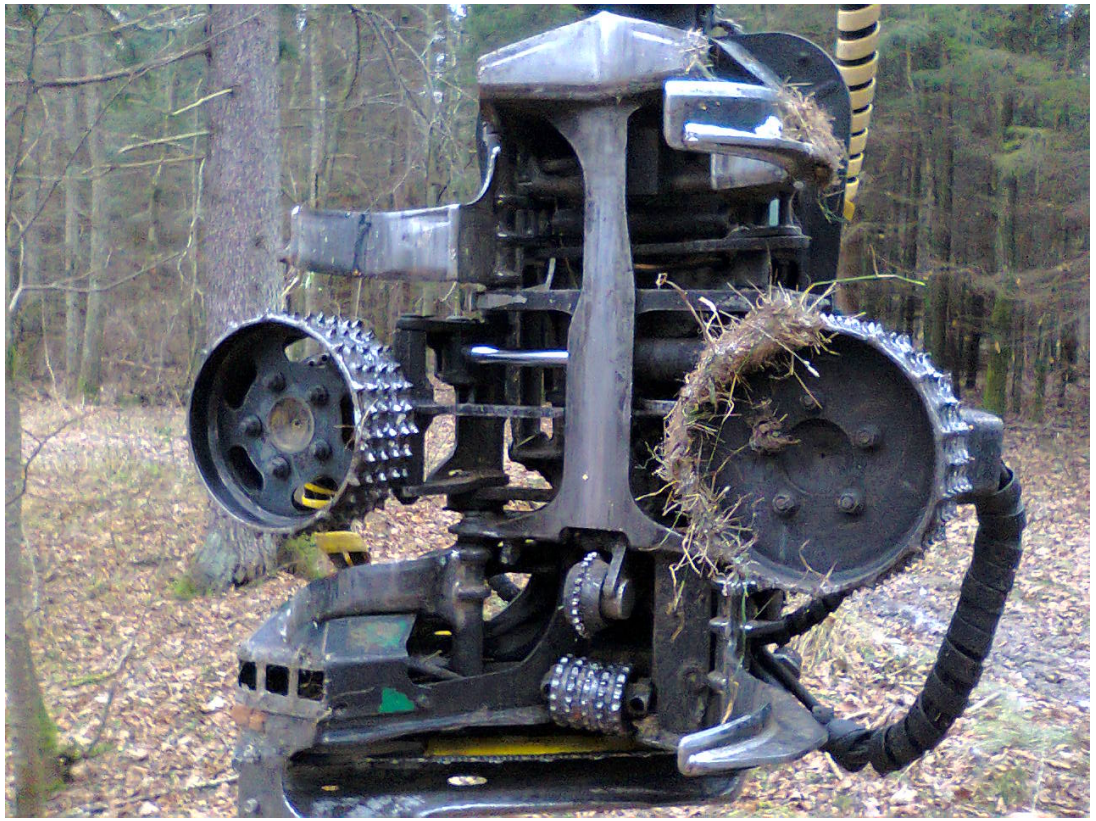
Karaszewski et al. 2017

Field plot no 1

- Black Alder (*Alnus glutinosa* Geartn.)
- Early thinning, 31 y.o.
- North of Poland, RDSF Olsztyn, Forest distric Zaporowo
- Harvester Preus 84 V.II equipped with Kesla 20 RH II head
- Operator: 4 years experience

	During growing season	After growing season
Mean DBH [cm]	14.7	15.5
Mean height [m]	17.4	17.0

Harvester Preuss 84 V. II (fot. S. Tragier)



Kesla 20 RH head (fot. S. Tragier)

Pulp wood with an intended length of 2.50 m and a tolerance of ±0.05 m.

Field plot no 2

- Oak (*Quercus robur*)
- Late thinning, 55 y.o.
- North of Poland, RDSF Olsztyn, Forest Distric Kwidzyn
- Harvester Valmet 901.3 equipped with Valmet 350.1
- Operator: 7 years experience

	During growing season	After growing season
Mean DBH [cm]	18.6	18.1
Mean height [m]	17.5	17.6

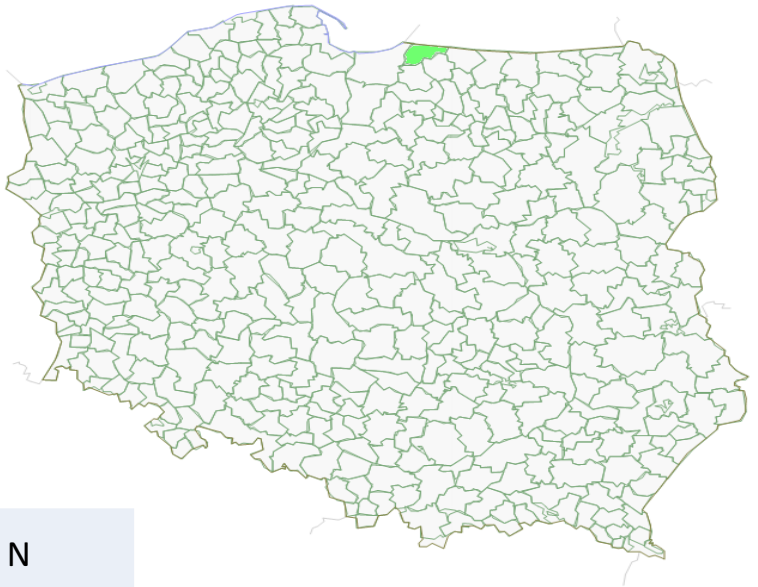
Harvester Valmet 901.3 (fot. S. Fabiszak)

Valmet 350.1 (fot. S. Fabiszak)

Pulp wood with an intended length of 2.50 m and a tolerance of ±0.05 m.

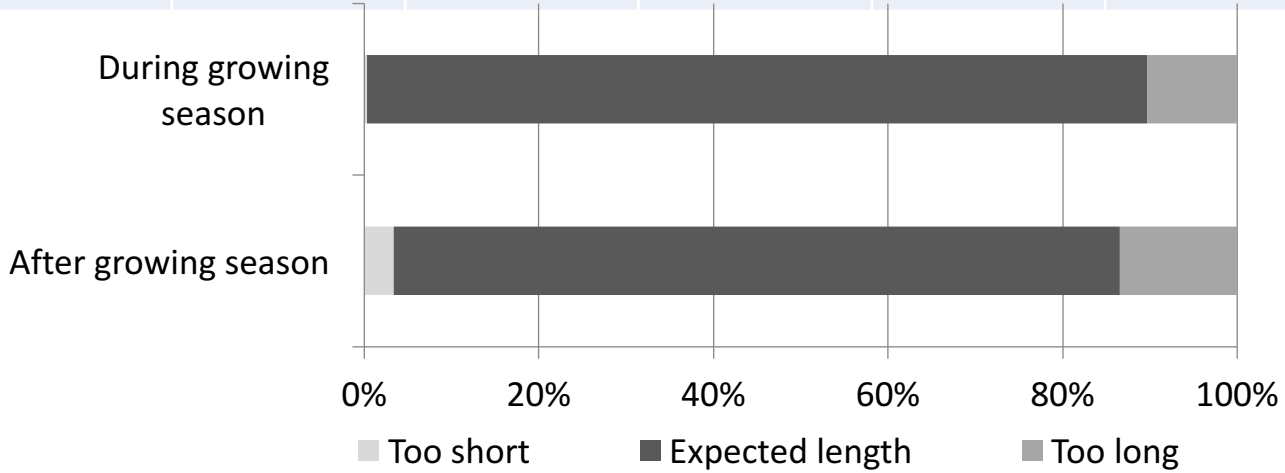
Kwidzyn Forest District

Field plot no 1



- Black alder (*Alnus glutinosa* Geartn.)
- Early thinning, 31 y.o.

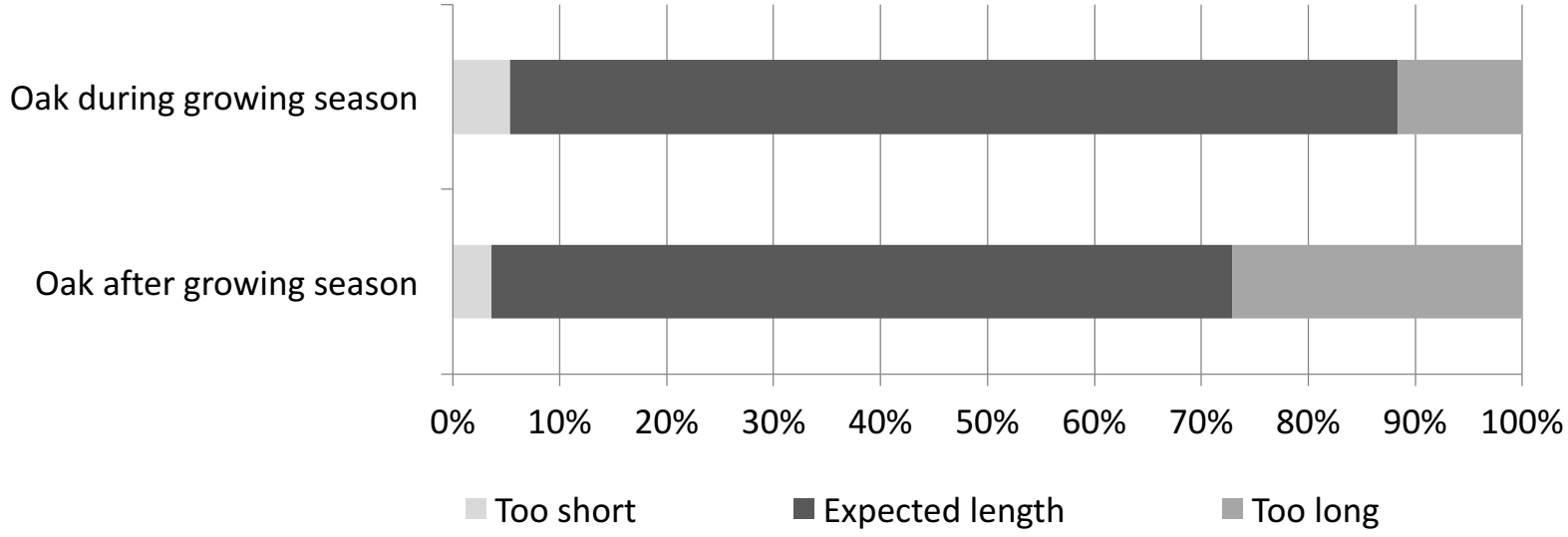
Alder logs	Mean	Minimum	Maximum	Median	N
During growing season	252,4	233,1	270,6	252,2	285
After growing season	252,4	242,0	266,0	252,0	119



Field plot no 2

- Oak (*Quercus robur*)
- Late thinning, 55 y.o.

Oak logs	Mean	Minimum	Maximum	Median	N
During growing season	252,0	228,0	279,0	252,0	207
After growing season	253,8	236,0	278,0	254,0	166



Conclusions

1) For both species, more accurate processing was achieved during growing season.

2) Unexpectedly, high bucking accuracy of alder and oak logs from coppice forests was observed.

3) Lenght accuracy of alder logs was better than of oak logs. 27% of oak logs were too long when processed after growing season.

4) Most of logs had the expected lenght, while too short logs were the least represented (less than 10% for each species).

Thank you,

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