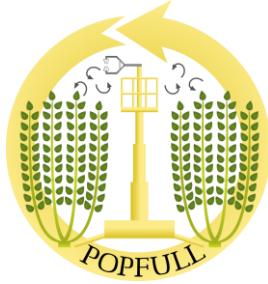




Operational short rotation woody crop plantations: manual or mechanised harvesting?



Stefan Vanbeveren

Coppice forests – past, present and future

10 April 2015



Overview

- The POPFULL project
- Harvesting
 - SRC
 - POPFULL
- Conclusions

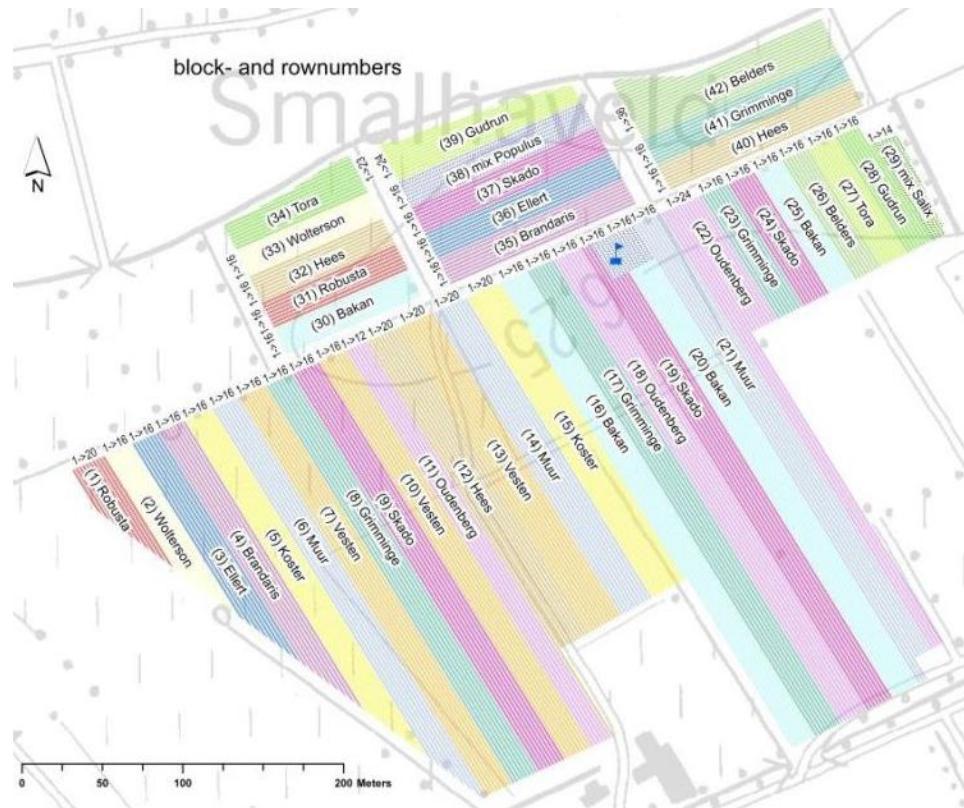




The POPFULL project

A short-rotation coppice culture

- 14.5 ha planted on 18.4 ha
- 12 *Populus* & 3 *Salix* genotypes
- No irrigation, no fertilisation

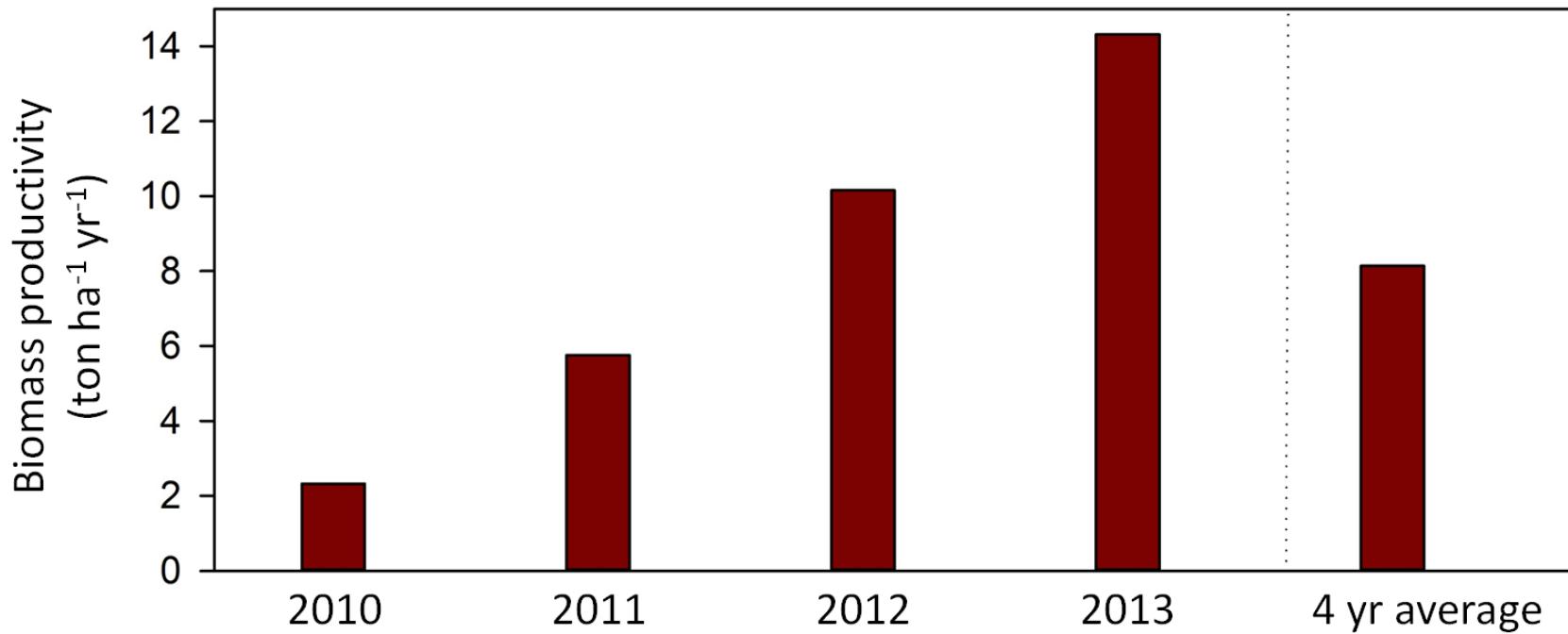




The POPFULL project

A short-rotation coppice culture

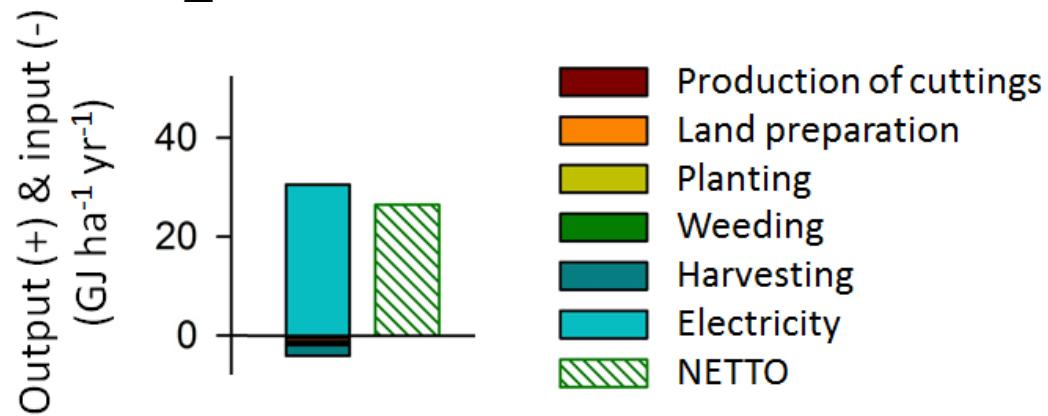
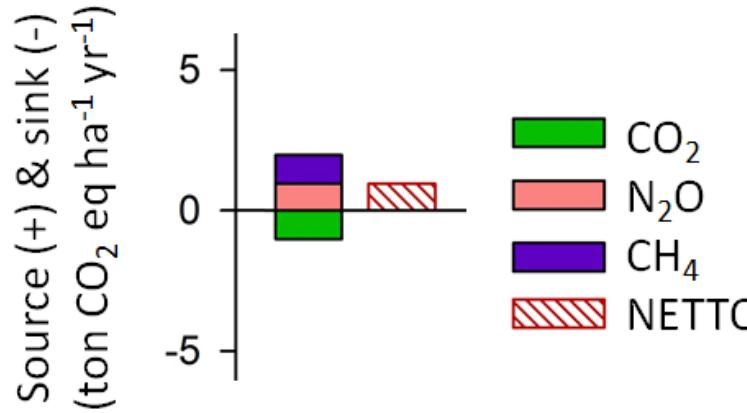
- 8000 plants ha^{-1} → 100.000 plants
- 2x 2 year rotations
- Double-row planting scheme



The POPFULL project

The three primary objectives

1. A complete greenhouse gas balance
2. A complete energy balance
3. A complete economic balance





Harvesting

Short-rotation coppice cultures in general

Harvest

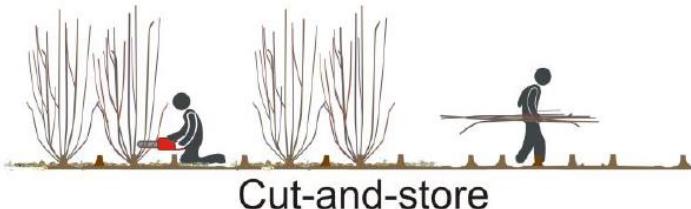


Cut-and-chip

Storage



Wet chips

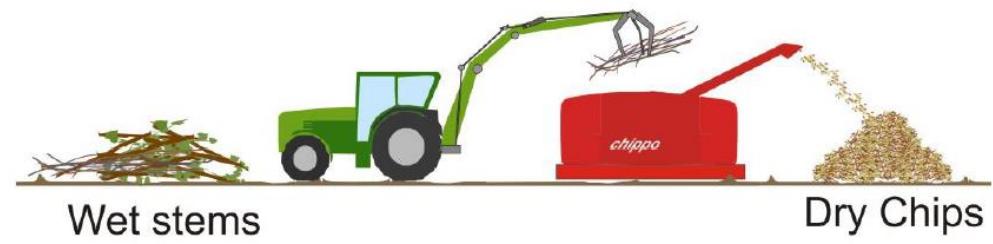


Cut-and-store



Cut-and-store

Chipping



Wet stems

Dry Chips



Harvesting

POPFULL at the end of the second 2 years rotation

- 10.07 ± 5.15 shoots per stump
- Diameter 18.59 ± 14.50 mm

1.36 ha manual (chainsaw)

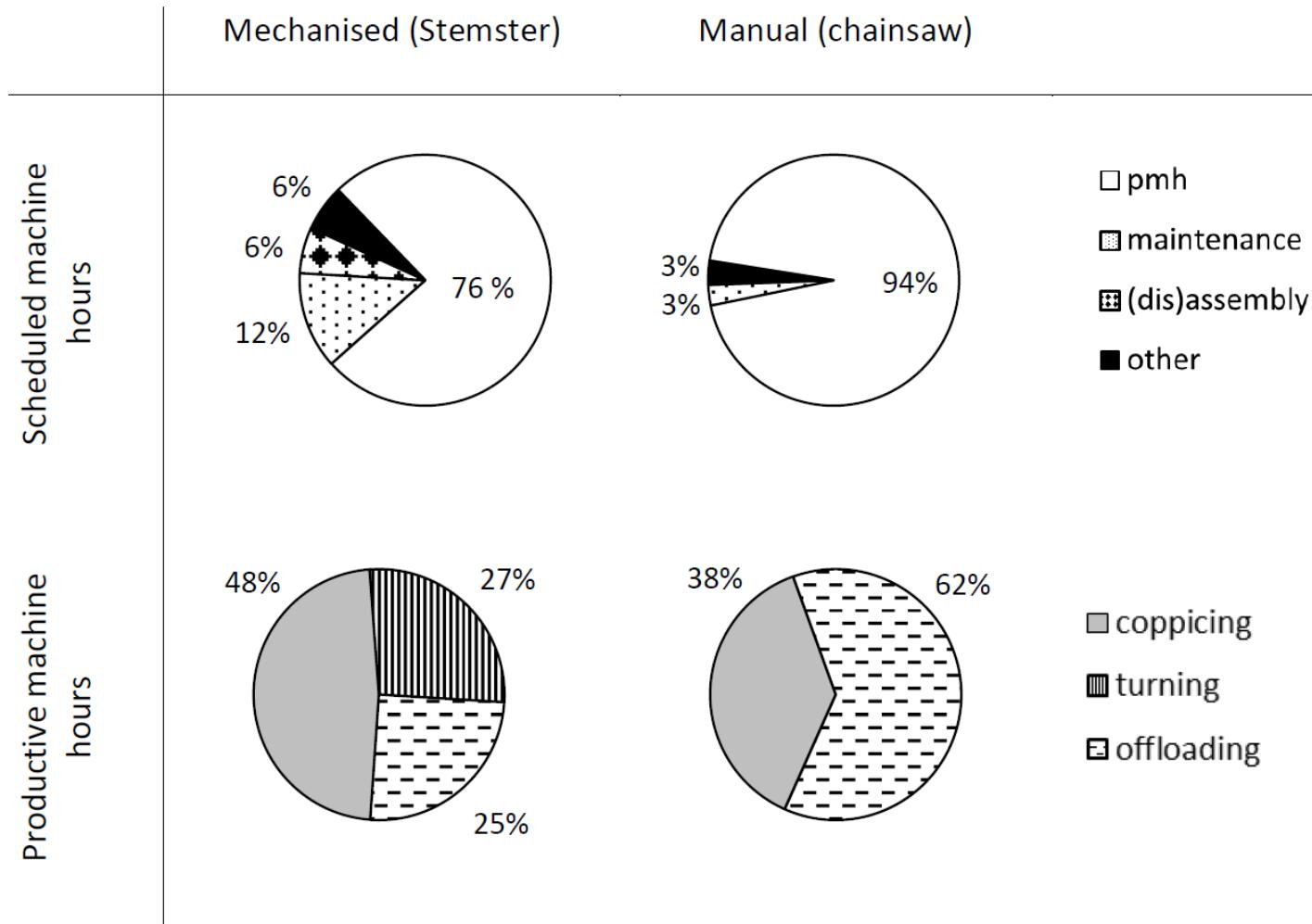
13.28 ha mechanised (Stemster MKIII)





Harvesting

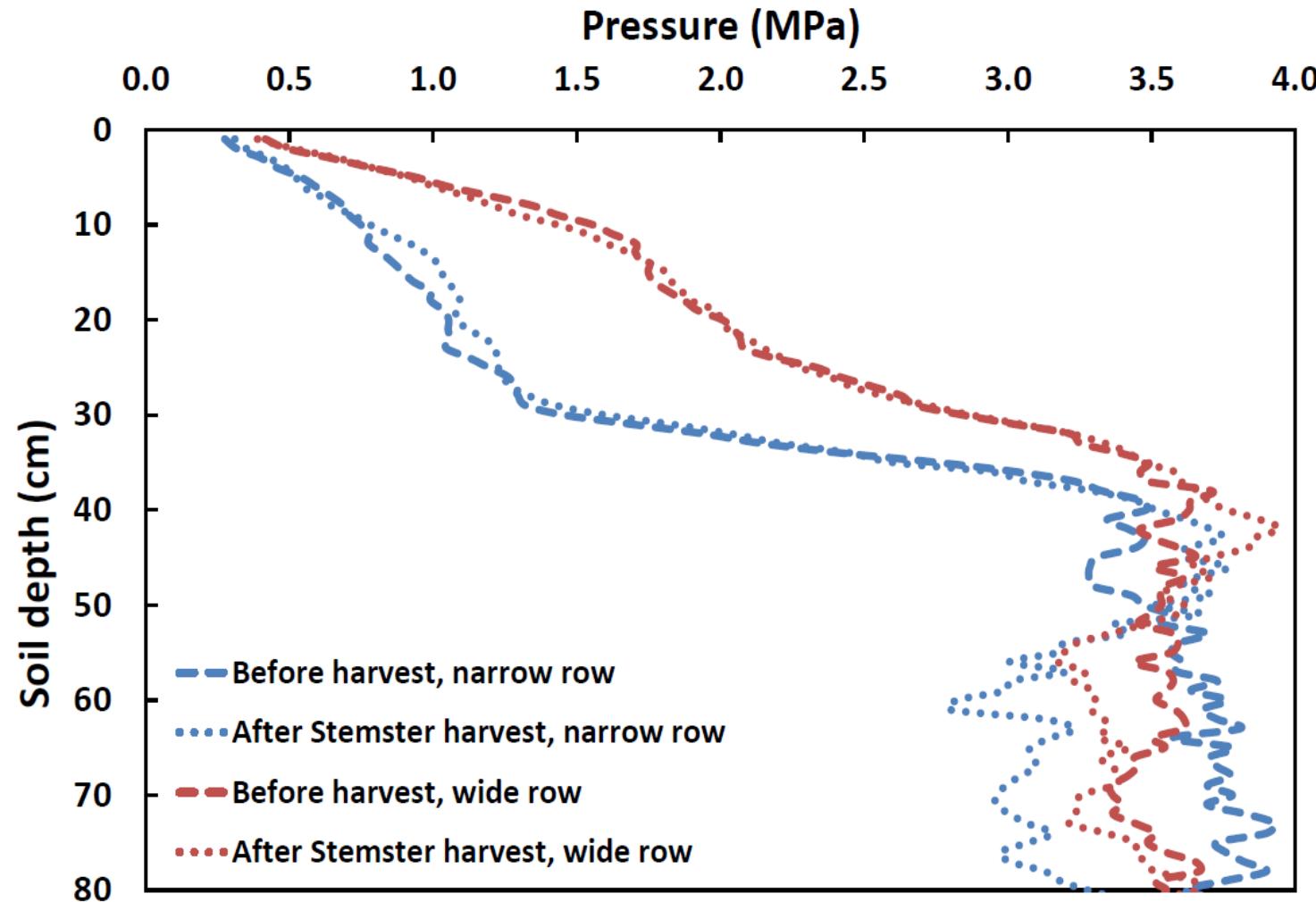
POPFULL





Harvesting

POPFULL

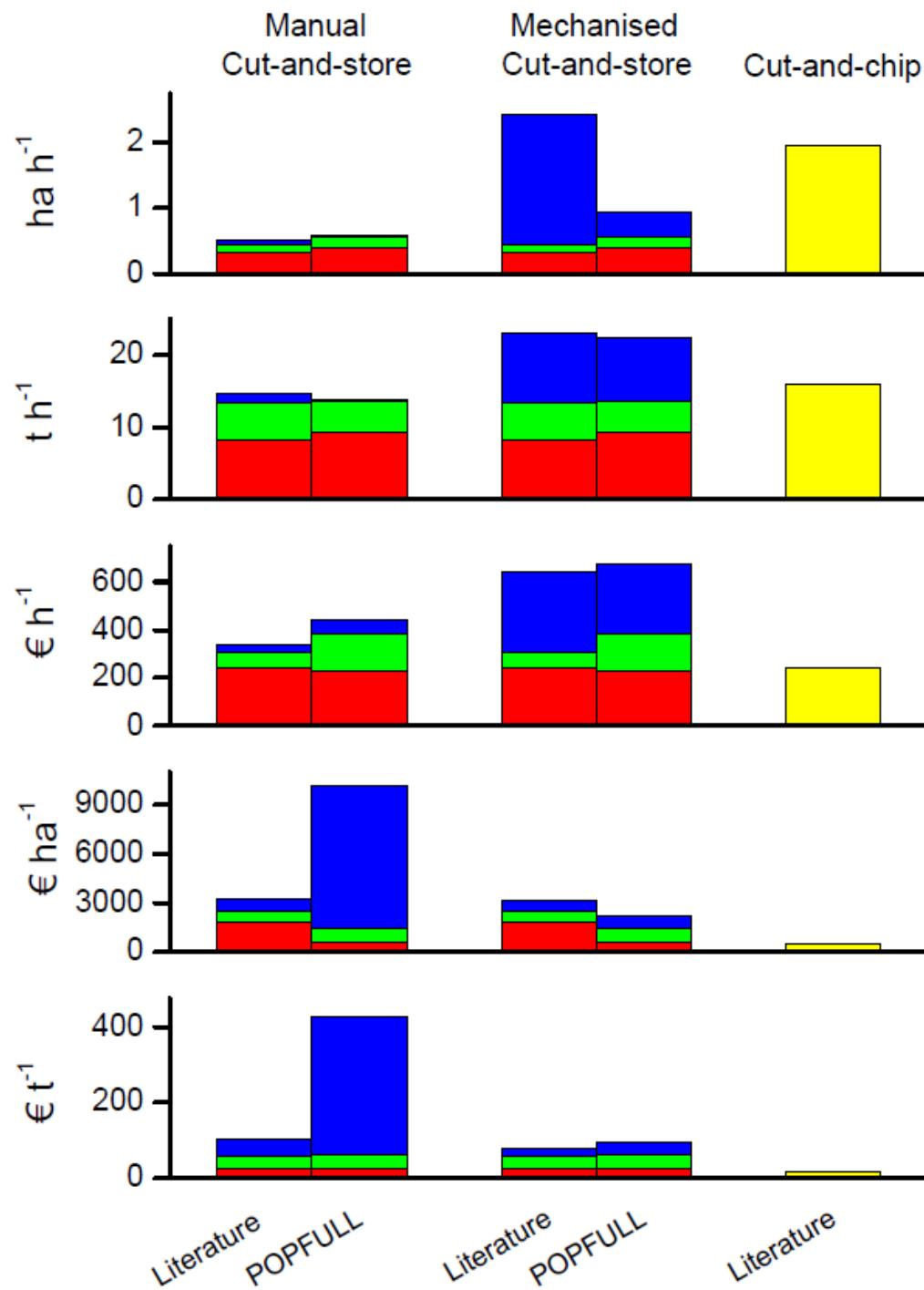




Harvesting

POPFULL

10





Conclusions

- POPFULL more expensive than literature averages

- € cut-and-chip harvesting

€€ mechanised cut-and-store harvesting

€€€ manual cut-and-store harvesting

	Cost per tonne (€ t^{-1})	
	POPFULL	Literature
Cut-and-store – manual	426	104
Cut-and-store – mechanised	94	78
Cut-and-chip		17



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More information

- Published as
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- <http://uahost.uantwerpen.be/popfull/>

