



Defoliation of sugar beets:

Technique, costs and effects

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Current Situation



**to deep topping
= Mass loss**

1 cm = 12 % Mass loss



**sloping/angling
topping
= Mass loss**

Money is missing

Sugar losses on woundings



- **topping:**
 - open wounding
 - faster spoilage
 - high sugar losses

Our aims



- **Lower woundings/bruises due to lower sugar losses**
 - Optimize harvest-system
- **Better storability (because of campaign length)**
- **Yield increase**
- **Higher sugar-yield [t/ha]**
- **Higher proceeds for beetgrowers**

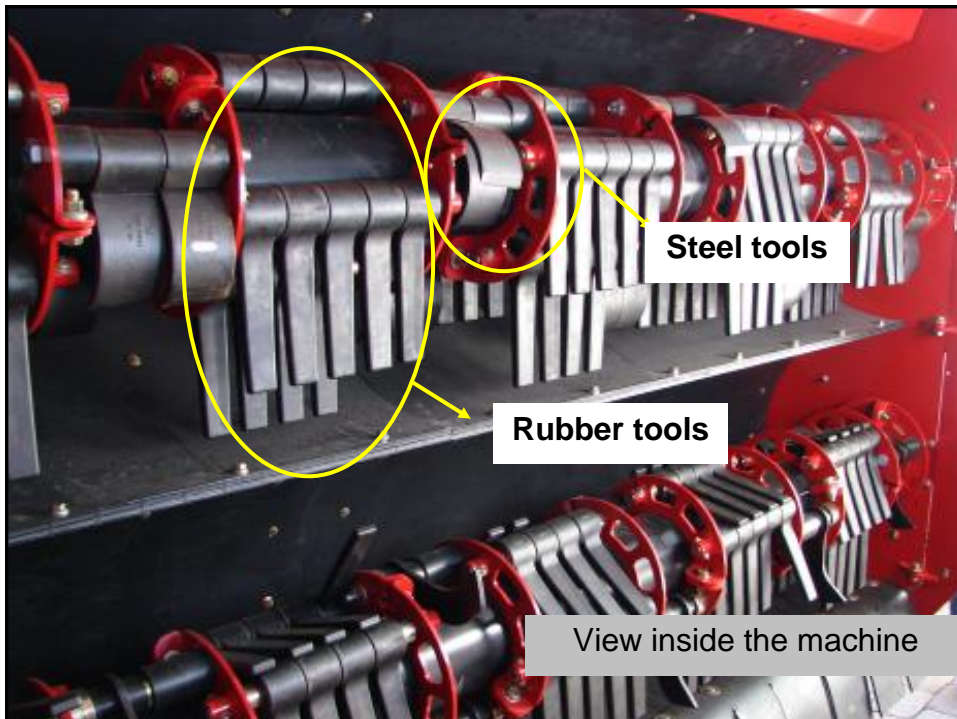


Higher Competitiveness of Sugar Beet







„Defoliation“ *or* „Whole beet harvesting“





Large scale trial 2009


Bachelor Thesis Daniel Töppe
(Fachhochschule Südwestfalen)




Assessment of harvest quality (6.400 examined beets)

						
Topping	untopped with petioles > 2 cm	untopped	under topped	correctly topped	over topped	angled topped
mean in %						


				
Defoliation	undefoliated with petioles > 2 cm	defoliated with small petioles	correctly defoliated	defoliated with damages
mean in %				




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Assessment of harvest quality (6.400 examined beets)

						
Topping	untopped with petioles > 2 cm	untopped	under topped	correctly topped	over topped	angled topped
mean in %	4,5	12,1	38,3	33,9	5,5	5,8


				
Defoliation	undefoliated with petioles > 2 cm	defoliated with small petioles	correctly defoliated	defoliated with damages
mean in %	3,6	16,2	66,8	13,4




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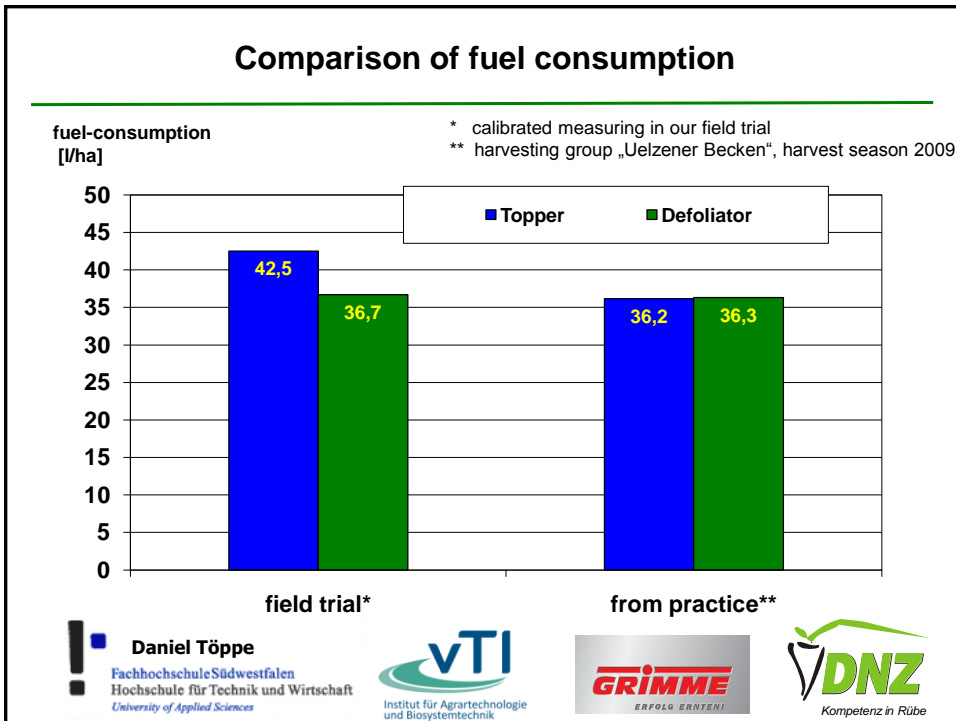
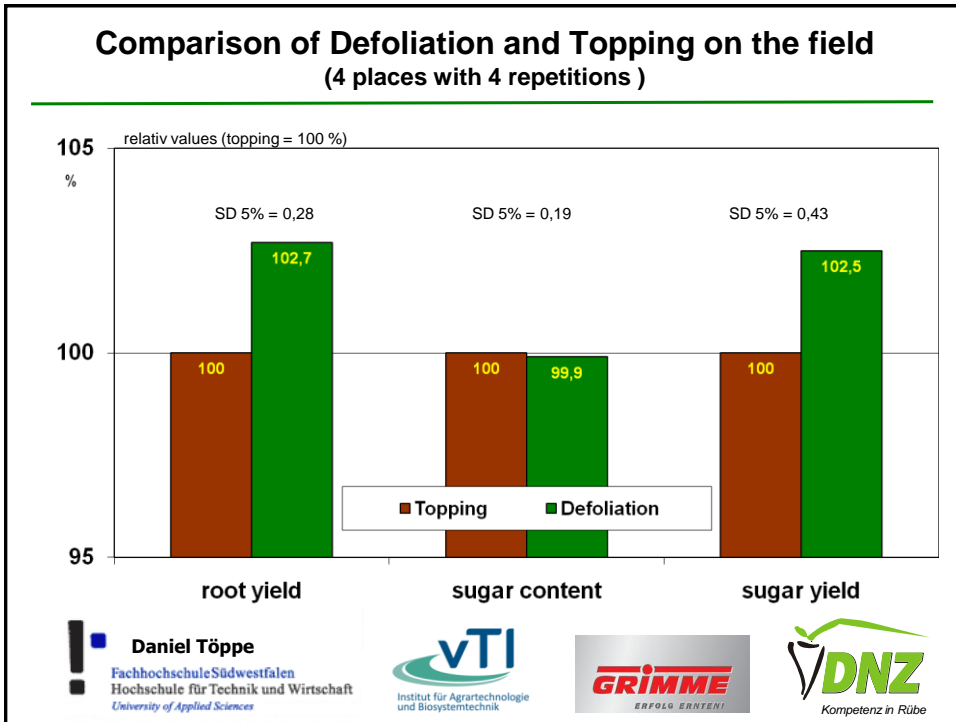
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Do we have different costs?



	€	€/ha
Higher price for defoliation system	3.900	
Depreciation 5 years, 600 ha per year	975	1,30
Interest (5 % of ½ aquisition value)	97,50	0,16
Higher fixed cost compared to topper		1,46
Higher variable costs in comparison to topping system		3,68
Total costs		5,14

Still remains a higher margin of 30-60 €/ha

Conclusion: Comparison of defoliation and topping

- higher root yield and sugar yield
- comparable sugar content
- slightly higher amino-N-content
- more money for the farmer

- comparable fuel consumption
- equal driving speed and area performance
- uniform beet material with less leaves/stalks

- better stability time of rubbersticks is required

What do we do in 2010

- Continue the comparison of defoliation and topping technology
- Add harvesters with micro-topping technology
- Storage-trials with beets from this harvestors



Thank you for your attention !

