

Yield and Quality of Defoliated and Topped Sugar Beets



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Objectives

I. Theoretical changes in yield and quality of defoliated beets

(2 locations, 8 varieties, 2009; data from: Hoffmann und Wulkow, 2010)



II. Yield and quality of defoliated and topped sugar beets harvested according to common practice on commercial fields

(10 locations, 2009; data from: Wulkow et al., 2010)




III. Storage losses of defoliated and topped sugar beets

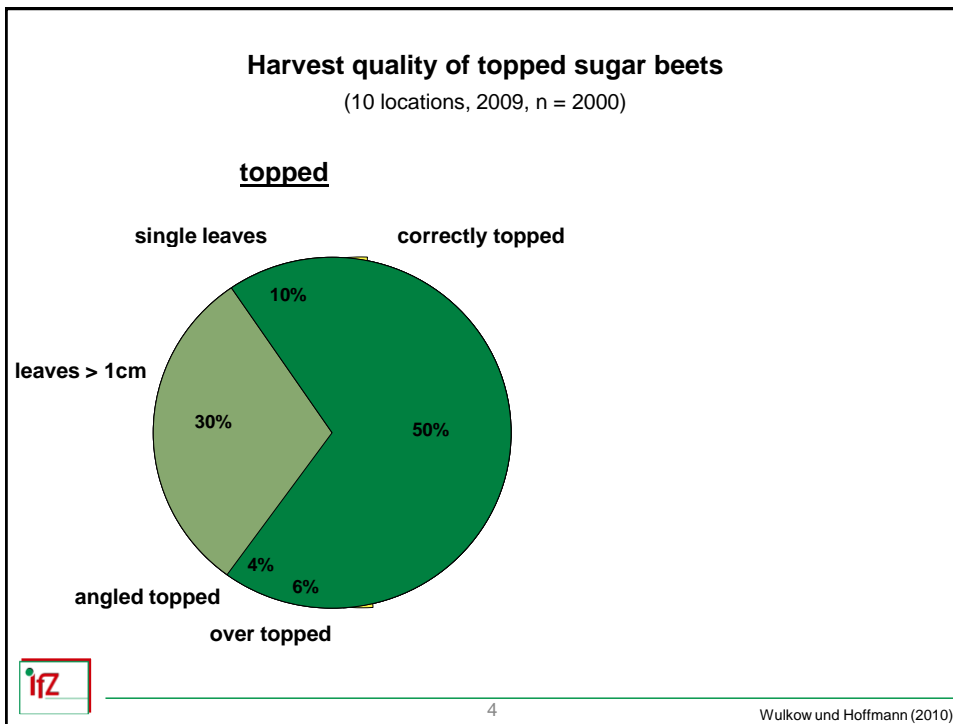
(1 location, 2009; data from: Wulkow and Hoffmann 2010)

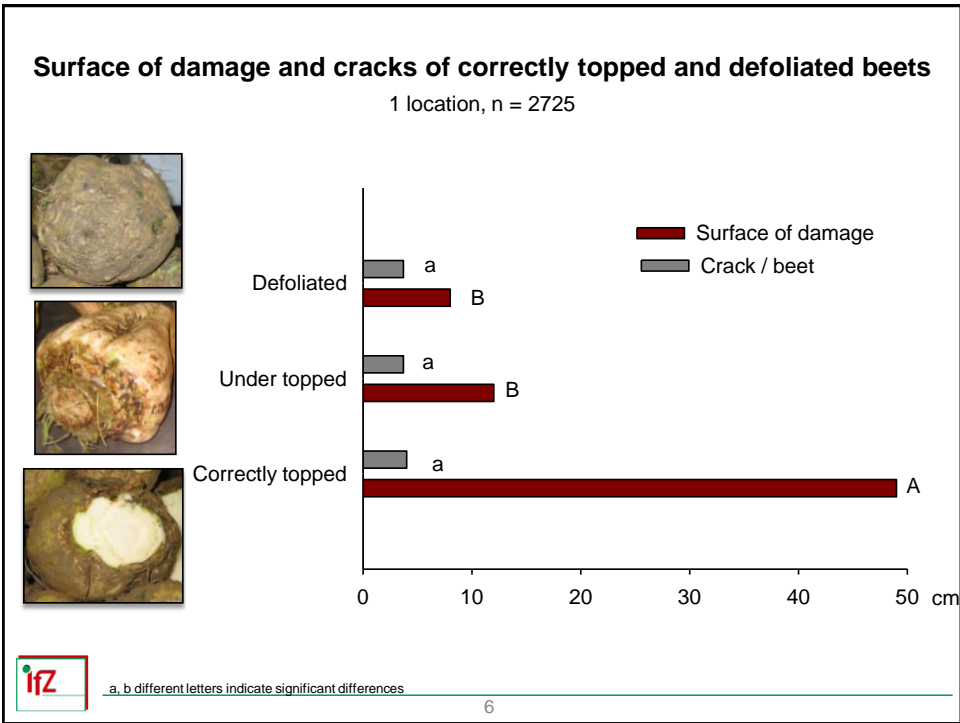
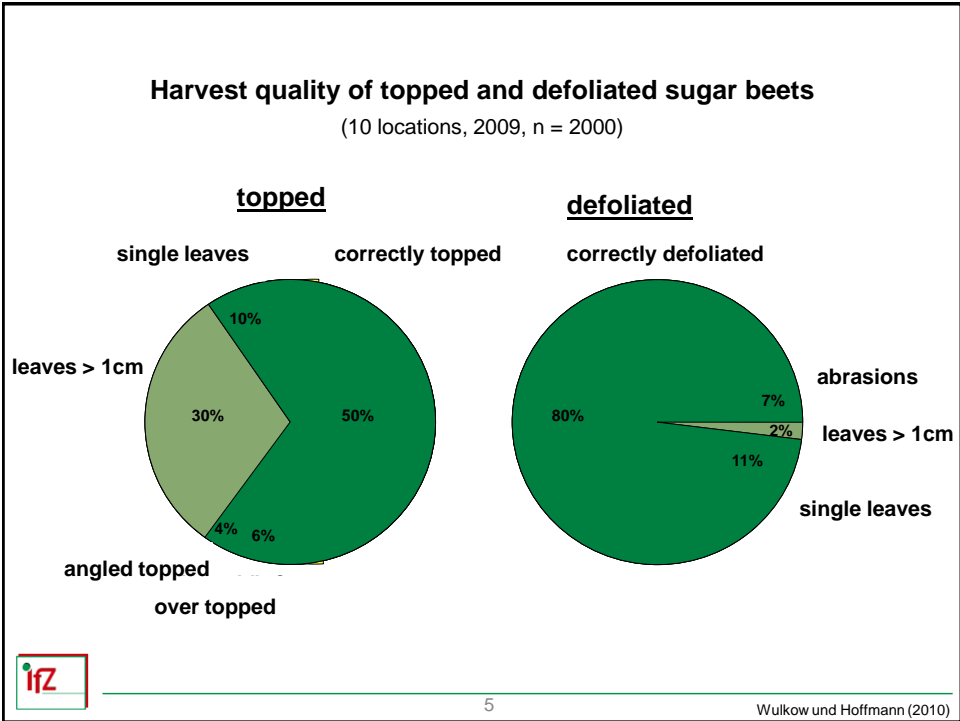


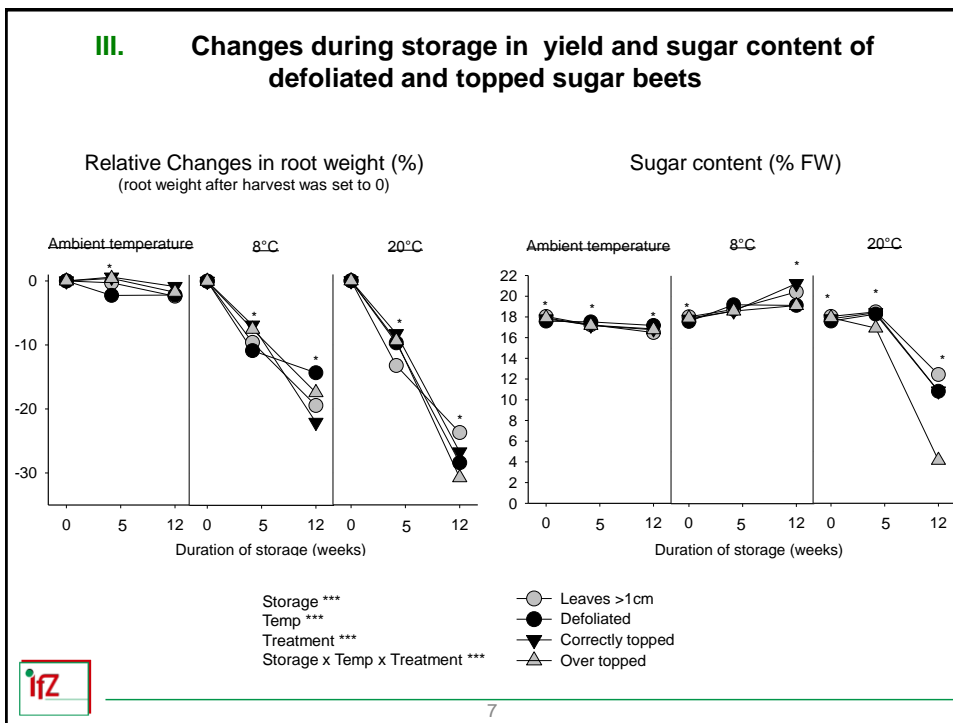
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I. Theoretical changes in yield and quality of defoliated beets				II. Yield and quality of defoliated and topped sugar beets harvested according to common practice on commercial fields		
Randomized field experiments			Paired comparisons			
	Correctly topped	Defoliated	Changes (correctly topped =100%)	Topped	Defoliated	Changes (topped =100%)
Root yield (t ha ⁻¹)	94,8 b	103,4 a	+ 9,1	78,0 b	81,0 a	+ 3,6
Sugar content (%)	18,5 a	18,0 b	- 2,8	18,2 a	18,0 a	- 0,6
Sugar yield (t ha ⁻¹)	17,4 b	18,4 a	+ 5,7	13,8 b	14,2 a	+ 2,8
Potassium (mmol kg ⁻¹ FM)	31,7 b	33,5 a	+ 5,6	30,9 b	31,8 a	+ 2,7
Sodium (mmol kg ⁻¹ FM)	2,4 b	3,3 a	+ 37,5	4,9 b	5,4 b	+ 8,4
Amino-N (mmol kg ⁻¹ FM)	8,9 b	10,0 a	+ 12,4	13,6 a	13,9 a	+ 3,7

 a, b different letters indicate significant differences on average of the varieties used in randomized field experiments and on average of the locations used for paired comparison







Summary

- Defoliation decreased harvest losses/ increased root yield because angled topped and over topped beets were avoided.
- Defoliated beets have inferior quality compared to correctly topped beets > lower sugar content and higher content of impurities.
- Differences induced by defoliation depend on the topping quality of beets used for the comparison.
- Defoliated and topped sugar beets did not differ in storage losses.

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Thank you for your attention !

