

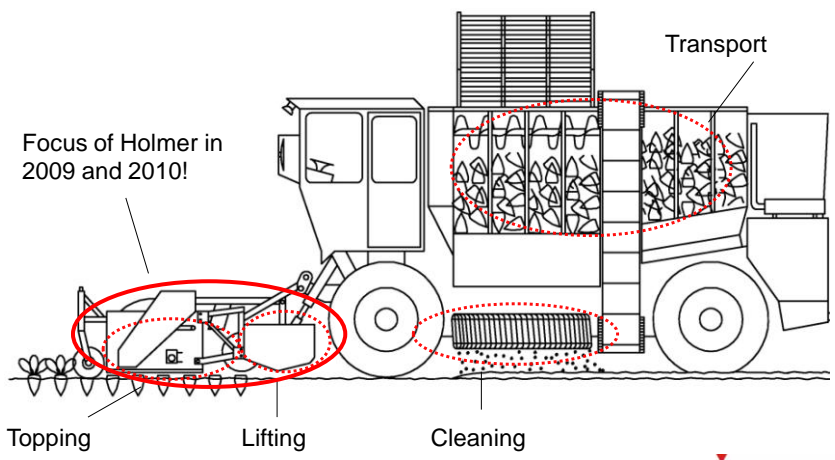


Meeting the future requirements in sugar beet harvesting

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Lelystad (NL), 17.10.2010

Harvest process quality



Quelle: Zeichnungsarchiv
Landtechnik Weihenstephan




Topping and defoliation

Different requirements different solutions

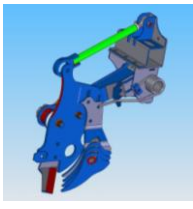
Topping

Scalper knives with automatic adjustment of cutting thickness



Optimized for topping standard „Göttingen“

Scalper knives for minimized cutting thickness




Optimized for removing leaves, petioles & epicotyl

Defoliation

In test since 2006!

Rotating Rubber flails



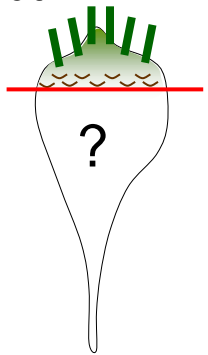
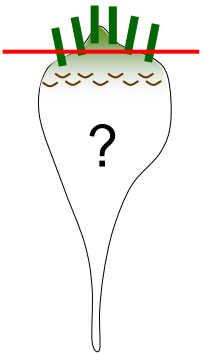
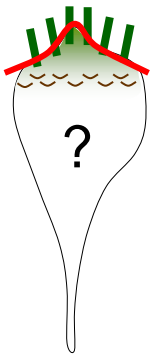
Optimized to remove leaves and petioles.

HOLMER
Erfolg aus Erfahrung

Topping and defoliation

A question of standards

But...

...what is the new optimum???

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Lifting, uprooting & cleaning

Problems of the standard lifter concepts

Undulating surface

Soil horizon

Field

Driving

⇒ Increased soil intake and/or beet damages

To high

To deep

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Lifting, uprooting & cleaning

HR- Lifter concept

1. Single row adjustable working depth

Adapted single row modules

- Minimum soil intake by optimal working depth in every row
- reduced soil mass movement at the rollers and turbines


⇒ enhanced cleaning of adhering soil

⇒ this enables reduced speed at turbines to reduce root tip losses

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Erfolg aus Erfahrung

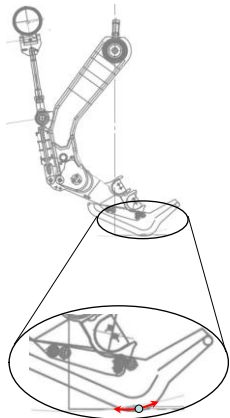
Lifting, uprooting & cleaning

HR- Lifter concept

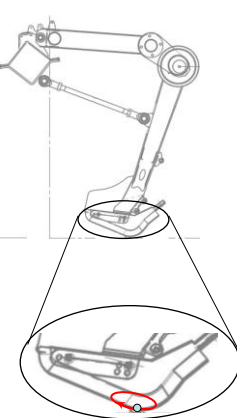


2. Enhanced working share movement for improved beet lifting


Standard



HR




- ⇒ active driven vertical share movement
- ⇒ active vertical beet lifting
- ⇒ reduced root tip losses
- ⇒ reduced surface damages



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Erfolg aus Erfahrung

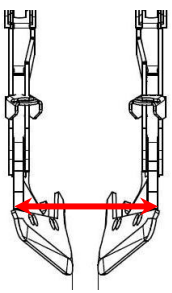
Lifting, uprooting & cleaning

HR- Lifter concept

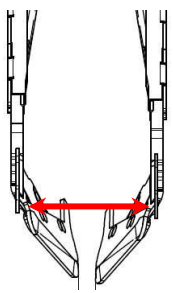


3. Optimized share geometry for lower soil intake & adherence


Standard



HR



- ⇒ reduced opening width at the share intake reduces soil intake
- ⇒ more shallow share geometry reduces soil adherence at the beet
- ⇒ this enables reduced speed at turbines to lower root tip losses



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Capacity& soil compaction

T3_{plus}: An optimized harvester

- Front wheel size 900/60 R32
- Permanent dual wheels at the rear axle
 - => tire pressure less then 2 bar
 - => +36% footprint increase
- Automatic adjustment of track width and steering angle for road traffic

This harvester fits the requirements of the VDI guideline 6101 for in field traffic!



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Capacity& soil compaction

(Transport) Capacity on demand

Problem: Certain tank volume always fits to a certain field & yield situation

- working time analyses of a typical self propelled tanker-harvesters shows up to 45% non-harvesting time (turning, transport to clamp, unloading,...)
- => Capacity adaptable by flexible use of a transport unit
- => necessary transport capacity is adaptable on field size & transport distance



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Erfolg aus Erfahrung

Capacity & soil compaction

(Transport) Capacity on demand

The effects of decoupling harvest and in field logistics:

		<u>Tank harvester</u>	<u>Harvester with Transport unit</u>	Rel. %	SD
capacity	ha/h	0,88	1,41	+58	0,31
Fuel consumption	l/ha	41,2	34,3	-17	4,8
Distance (field)	km/ha	5,1	4,3	-16	0,32
unloading	h/ha	0,19	0,17	-11	0,02
Unoccupied cycle time	h/ha	0,11	0,05	-55	0,03
Based on 100 data sets exemplary for Bavaria, Saxony and Lower Saxony					

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Erfolg aus Erfahrung

Thank you for your
attention!

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