

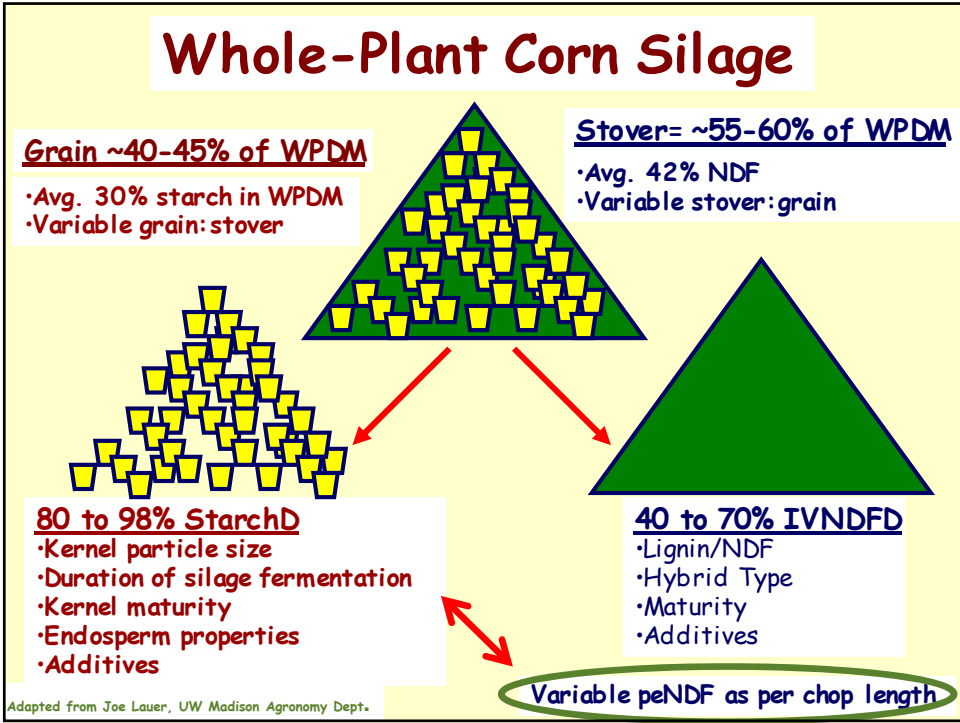



DEPARTMENT OF
DAIRY SCIENCE
 University of Wisconsin-Madison

Shredlage®: What we've learned

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 UW Madison





 DEPARTMENT OF DAIRY SCIENCE
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UW Madison Shredlage® Trials

	Trial 1	Trial 2
Hybrid	Dual Purpose	Brown Midrib
Crop Year	2011	2013
Harvest DM	34% ± 2	38% ± 4
Ensiling	Silo Bags	Silo Bags
Months in Storage Before Feeding	1	4

UW Madison Shredlage® Trials

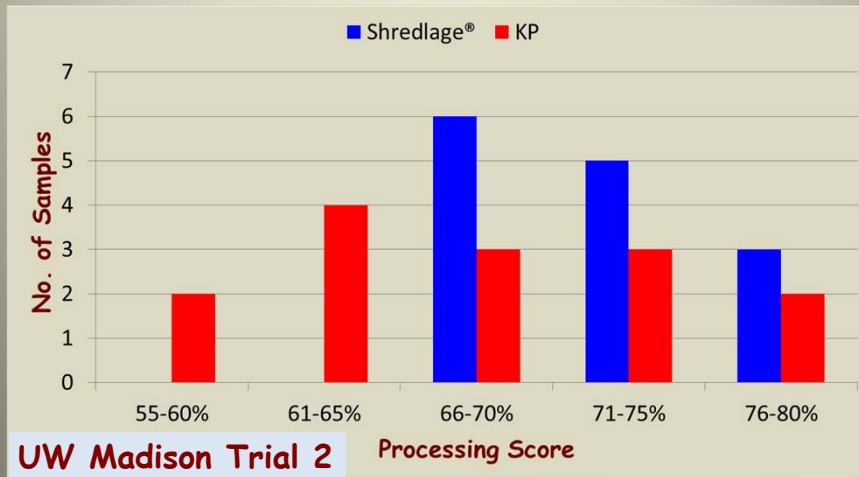
	Trial 1		Trial 2	
	Control	SHRD	Control	SHRD
TLOC, mm	19	30	19	26
WI-OS MPL, mm	10.4	11.2	10.0	11.4
% PSU Top	6%	32%	7%	18%
% PSU Top 2	82%	73%	75%	73%

UW Madison Shredlage® Trials

	Trial 1		Trial 2	
	Control	SHRD	Control	SHRD
Roll gap, mm	2 - 3	2.5	2	2
Roll Speed Differential	≈20%	≈30%	≈40%	30%-40%
Processing Score	60% ± 4	75% ± 3	68% ± 7	72% ± 4

Kernel Processing Score

Samples obtained weekly during feed-out from the silo bags



UW Madison Shredlage® Trials

% of Diet DM	Trial 1	Trial 2
Forage	60%	55%
Corn Silage	50%	45%
Forage NDF	23%	24%
Starch	25%	29%
CP	17%	16%

UW Madison Shredlage® Trials

	Trial 1	Trial 2
DIM at trial start	116 d ± 36	81 d ± 8
Trial Duration, weeks	10	16
Trial Average Control Milk, lb/cow/day	94	110

UW Madison Shredlage® Trials

	Shredlage Response	
	Trial 1	Trial 2
DMI	no	no
Milk Yield	avg. +2 lb	avg. +2.5 lb
Feed Efficiency	no	no
Milk Composition	no	no
Milk Component Yields	yes	yes

UW Madison Shredlage® Trials

	Shredlage Response	
	Trial 1	Trial 2
Body Condition Score	no	no
Body Weight Change	no	no
Rumination Activity	---	no

UW Madison Shredlage® Trials

	Shredlage Response	
	Trial 1	Trial 2
Total Tract Diet StarchD	yes	yes
Ruminal Silage StarchD	yes	yes
Total Tract Diet NDFD	yes	no
Ruminal Silage NDFD	no?	no

Industry Makes Advances in Corn Silage Processing

(CVAS Data, 2006 to 2014)

Crop Year	Number	Average	Percent Optimum	Percent Poor
2006	97	52.8	8.2	43.3
2007	272	52.3	9.2	37.9
2008	250	54.6	5.2	34.8
2009	244	51.1	6.1	48.0
2010	373	51.4	5.9	43.4
2011	726	55.5	12.3	33.1
2012	871	60.8	14.8	19.9
2013	2658	64.6	36.0	12.9
2014	322	61.8	24.2	9.0

Adapted from slide provided by Ralph Ward of CVAS

Shredlage® Progression

- 2010 - 3 Claas SPFH
- 2011 - 11 Claas SPFH
- 2012 - 49 mostly Claas SPFH
- 2013 - ≈300 mostly Claas, but Loren Cut® roll kits sold for NH, Krone & JD (TLOC capability?)
- 2014 - similar sales as 2013

Note: Not all Claas knife drums capable of 26-30 mm TLOC

New Processing Alternatives

- Novel intermeshing disk processors
- Processors with greater roll speed differential
- Unsure of TLOC & MPL or comparability of fiber shredding



2014 Farm Survey

Gustavo Salvati, Randy Shaver, Matt Lippert, Eric Ronk, & Chris Wacek-Driver

- **Farm Sampling April - June 2014**
 - 76 Samples from 69 Farms (WI, MN, IL)
 - 46/76 Claas SPFH with Shredlage® processor
 - 5/76 Loren Cut® rolls
 - 72/76 bunkers/piles; 4/76 silo bags
 - Hybrids
 - 31/76 Dual-Purpose
 - 19/76 Silage-Specific
 - 11/76 BMR
 - 11/76 Combination
 - Silage inoculant used 58/67 farms

2014 Farm Survey Results

All farms	# of Milking Cows	Milk			
		lb/day	Fat%	Protein%	MUN mg%
Average	840	87	3.8	3.2	10.1
Std. Dev.	655	10	0.4	0.2	1.6
Max	3500	109	5.6	3.9	15.4
Min	66	52	3.3	2.9	6.0

2014 Farm Survey Results

Verbal TLOC		Verbal Roll Gap	
	<u>n</u>		<u>n</u>
>26 mm	10	>2.5 mm	2
26 mm	33	2.5 mm	10
22 mm	22	2.0 mm	30
19 mm	4	1.5 mm	11
<19 mm	1	1.0 mm	7
		<1.0 mm	3

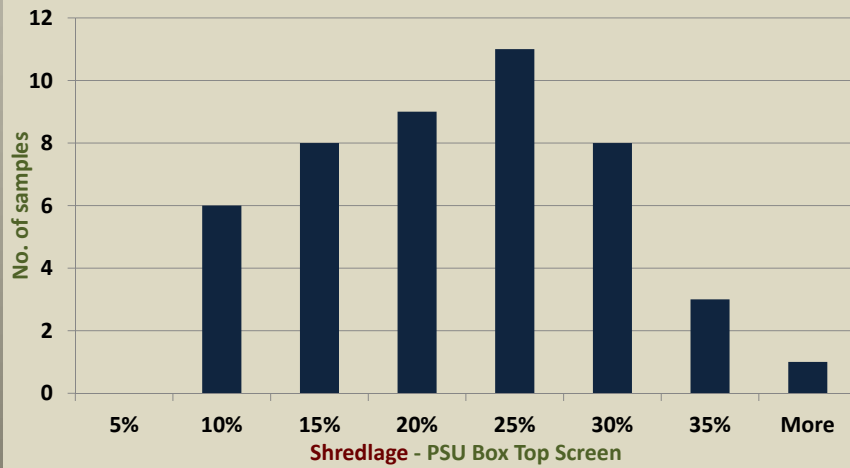
2014 Farm Survey Results

Samples	n	% on Top Screen of PSU Box	Processing Score % Starch thru 4.75 mm Sieve
All	76	17.9%	66.4%
Shredlage	46	19.6%	67.3%
Loren-Cut Rolls	5	14.7%	66.0%
Conv. Processor	6	16.1%	62.2%
JD Conv. 32%	5	12.3%	65.1%
Horning Rolls 32%	2	6.3%	69.8%
Kooima Disc	5	14.6%	65.8%
Uncertain	7	20.7%	64.7%

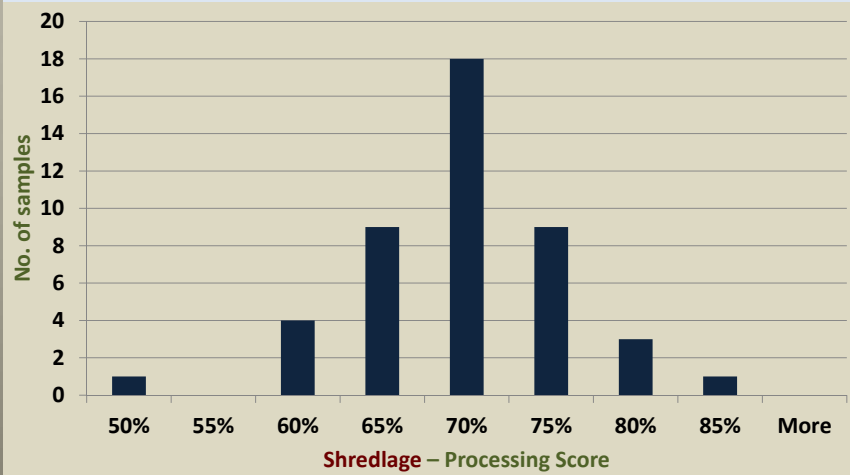
2014 Farm Survey Results

Shredlage (n=46)	% on Top Screen of PSU Box	WI OS Particle Separator MPL (mm)	Processing Score % Starch thru 4.75 mm Sieve
Average	19.6%	11.9	67.3%
Std. Dev.	7.8%	1.4	5.9%
Max	39.9%	14.8	82.7%
Min	7.2%	9.0	49.5%

2014 Farm Survey Results



2014 Farm Survey Results



2014 Farm Survey Results

% forage in diet DM	% of 63 farms
Increased	22.2%
Same	68.3%
Reduced	9.5%

2014 Farm Survey Results

% corn silage in diet DM	% of 64 farms
Increased	46.9%
Same	50.0%
Reduced	3.1%

2014 Farm Survey Results

Use Hay or Straw	% of 65 farms
Yes	53.8%
No	46.2%

2014 Farm Survey Results

Hay or straw reduced	% of 35 farms
Yes	40.0%
No	60.0%

2014 Farm Survey Results

Feed sorting	% of 67 farms
Increased	14.9%
Reduced	14.9%
No Change	67.2%
Unsure	3.0%

Visit UW Extension Dairy Cattle Nutrition Website

<http://www.uwex.edu/ces/dairynutrition/>

Cooperative Extension
Dairy Cattle Nutrition UW-Extension

Welcome to Dairy Cattle Nutrition UW-Extension
 The Dairy Cattle Nutrition UW-Extension site is designed to provide research-based information for the public seeking resources on applied aspects of the nutrition of dairy cattle.

2014 Four-State Dairy Nutrition & Management Conference

- [Registration Brochure](#)

2014 ADSA 28th Discover Conference - Search for Ruminants

- [2014 ADSA 28th Discover Conference Brochure](#)

Crop-Related Feeding Issues in 2013-2014

- [Navigating the 2013-2014 Dairy Feed Situation](#) Randy Shaver & Pat Hoffman
- [Forage Substrate and By-Product Feeding May Be Not \(SOPAC\)](#) Madison, WI & Larry Chase (Cornell University, Ithaca, NY)
- [Feeding Strategies When Forage Supplies Are Short](#) Randy Shaver

FeedVal - 2012

- [Online Tool](#) Vicky Cabrera, Liv Ameliano and Randy Shaver
- [Registration](#) Vicky Cabrera
- [Groups](#)

UW Feed Grain Evaluation System

- [Feed Grain 2.0 Evaluation System](#)
- [Feed Grain 2.0 Background and Development Guide](#) Pat Hoffman, Randy Shaver and Dave Hartman

UW Milk2006

- [Milk2006 Corn Silage Calculator](#) TDN, TD, NEL, CP, Milk per ton, and Milk per acre Randy Shaver, Joe Lauer, Jim Coors, and Pat Hoffman

Extension Publications

- [Alternatives to Corn for Dairy Rations](#) Randy Shaver: Proceedings 2013 Florida Ruminant Nutrition Symposium
- [2013 Four State Dairy Nutrition & Management Conference Proceedings](#)
- [Dairy Shaver: Skills, Science, Marketing, Feeding & Nutrition](#) (Webinar #1)

Extension Presentations

- [Alternatives to Corn for Dairy Rations](#) Randy Shaver: 2013 Florida Ruminant Nutrition Symposium

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