

# The 3x3 of Top Silage Production

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# Three Pillars of Top Silage Production

1. Crop Production – yield and plant health
2. Bunker Management
3. In Field Management



We all know how to do it right!





# Crop Production

1. Variety selection
2. Nutrient balancing
3. Intensive Management

# Variety Selection

plant the highest potential

1. Proper maturity
  1. For the region
  2. Relative to other varieties in same field
2. Right agronomics
  1. Standability – corn and alfalfa !!!!
  2. Health package
  3. Nutrient utilization
3. Fit into your feeding program



# Nutrient Balancing

Utilize the full plant potential

1. Sustain soil nutrient levels
  - Adjust nutrient removal to higher yields
  - Corn and alfalfa
2. Split N application
  - N mouth feeding – apply when needed
  - Avoid losses
3. Proper manure management
  - Right timing
  - Incorporation
  - Utilize the potential of manure

# Intensive Management

Maximize the potential

1. Higher plant population increases yield
2. Split N plus late fungicide
3. High tech Crop sensing and monitoring:  
Quadcopter and Greenseeker















# June





# July





# August



# Three Pillars of Top Silage Production

1. Crop Production
2. Bunker Management
3. In Field Management



# Top Bunker Management

1. Bunk preparation
2. Packing
3. Covering - Take Out - Monitoring

# Bunk Preparation



# Start Clean



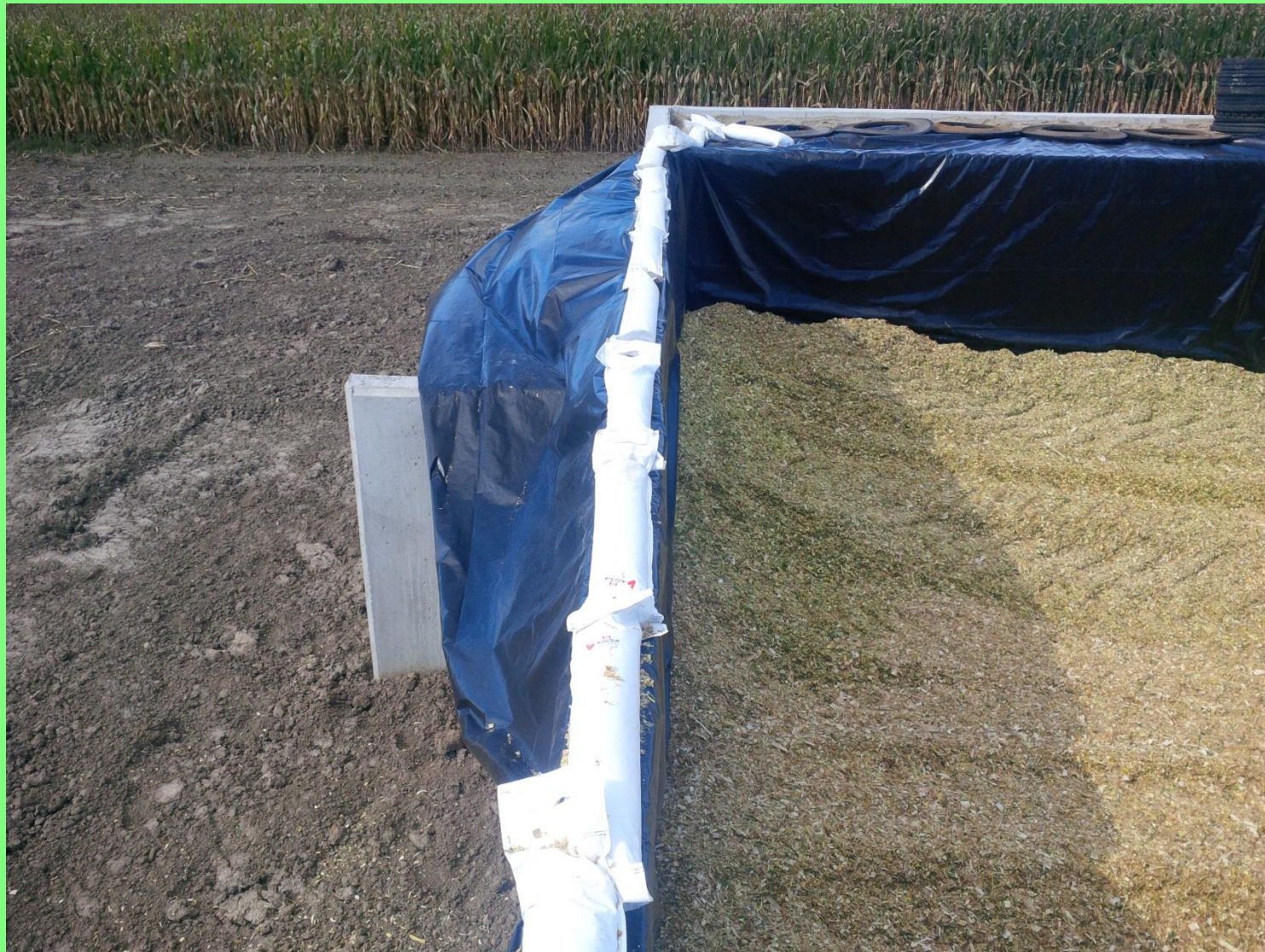


Lots of concrete in front of bunk





# Cover the Walls





Have enough work space





Don't go too much over the wall





# Packing















# Packing Goals

- 240 kg/m<sup>3</sup> DM density = 15 lbs/ft<sup>3</sup>
- 20% of the incoming FM weight/hr needs to be the weight of the packer – 160 t/hr FM requires 32 t rolling on the bunk
- For each mm longer than 18 mm add 1% to the weight requirement – if we chop 23 mm at 160 t/hr requires 40 t rolling on the bunk



# Covering – Take out - Monitoring









# Covering – Take out - Monitoring







FUEL SHUTOFF

SIEMENS

Max 5000g x 1g 50/100g x 0.1g

54.6

ON/TARE OFF

CARQUEST

60









pH Pro  
waterproof

Shindengen

5.8

ISFET pH METER 98704

CE





# CLAUSSEN FARMS CUSTOM FARMING INC.

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## Silage Density Testing

Customer:		Farmer		Sampled by:		Claussen Farms
Date and Time:	11:40 AM		5-Sep-13	Bunker silo #, description:		1
Silage type:	CS, CCM, HMC, AAS		CS	Harvesting Date:		
Storage type:	bunk, tower, bag		bunk	Dry Matter %:		37
Inoculant Product used			Pioneer	Plastic cover: yes, no, condition		2 layers
Progress of feed out:			39.6 m	Wall cover: yes, no, condition		none
Cutting length:			21 mm	Seepage none, some, flow		some
Feedout management:	face structure, loose material, birds etc.			good face		

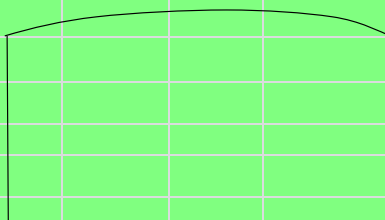
Inspection:			Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Benchmark	Comment
Location on face:	bottom, center, top		C	B	T	B	T		
	left, center, right		C	R	R	L	L		
Color inspection	natural, dark, light, other		N	N	N	N	N	natural	
Odor inspection	mild, strong, intense		M	M	M	M	M	mild	
	sweet, acetic, fecal, decaying, earthy, alcoholic, tobacco		A	A	A	A	A	acetic	
Temperature	on surface	degree C	10.8	10.2	11.8	12	14.4		
	back in hole	degree C	18	17.2	22.2	18.6	23.2		
PH level	on surface		3.7					< 4.5	
Density Calc.	Formula	Units							
Weight of sample		g	673	658	639	686	542		
Fed Density(1)	Weigh (g) x 1.4	kg/m3	942.2	921.2	894.6	960.4	758.8		
Dry Matter Density	Fed Density(1) x DM %/100	kg/m3	348.6	340.8	331.0	355.3	280.8	240	
Dry Matter Density	Fed Density(2) x DM %/100	lbs/ft3	21.9	21.4	20.8	22.3	17.7	15	
Density Rating	very low, low, OK, high, very high		VH	VH	VH	VH	VH		

Map of bunker and probe location on surface:

Comments, Suggestions, etc:

Bunkersilo width: 12.7 m

- samples 1&4 were wet
- overall this is a well packed bunk





steautmann  
vecti-mix  
2001 SF  
Double

40



# Three Pillars of Top Silage Production

1. Crop Production
2. Bunker Management
- 3. Field Management**

# In Field Harvest Management

1. DM management
2. Crop processing
  1. Cutting length
  2. Kernel processing
  3. Use of inoculant
3. Logistics



# DM Management





# Merging when mowing





# Merging after mowing





# CornSilage









# High Moisture Corn





# In Field Harvest Management

1. DM management
2. Crop processing
  1. Cutting length
  2. Kernel processing
  3. Use of inoculant

# Processing and Cutting Length





# Processing and Cutting length

- Cutting length and processing quality is determined by the dairy producer
- Cutting length should be adapted to crop DM  
- cut shorter when drier, change settings during the day
- Corn Silage processing score should be 70 or over – it takes a lot of effort and technology to achieve that consistently

# Inoculant





# In Field Harvest Management

1. DM management
2. Crop processing
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# Logistic





The loads need to be timed right!  
The Packer Operator is the King!



# The Most Important Point:

## COMMUNICATION!!

1. Dairy manger and Nutritionist
  - Silage quality and quantity goals
2. Contractor and Dairy Manager
  - Harvest timing
  - Quality goals
  - Feedback both ways !
3. Harvesting Team
  - Packer and harvester
  - Harvester and dumptrailer
  - Dumptrailer and packer



# Outlook

## 1. Technology

- Yield, moisture and quality measurement
- On the go harvester setting adjustments
- Sensor technology for nutrient application

## 2. People

- Changing workforce with different goals
- Qualification

## 3. Equipment utilization

- equipment costs increase

Thank You!

