Making Silage in Custom Operations: Challenges and Opportunities

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Kings and Tulare Counties

Introduction

- Silage is an important feed.
- Estimate 800,000 acres corn/ small grains.
- About 18 million tons of silage.
- “Custom” operations harvest the vast majority of these crops.

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Custom Harvesters

- Critical members of the “silage team”.
- Assist in locating purchased sources of feed.
- Advise on forage crop management.
- Communication is important!

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Communicating with Custom Harvesters

- In planning the Silage Symposium we wanted to include their perspective.
- This led to an effort to find them, listen to them and describe them.

University of California
Agriculture and Natural Resources

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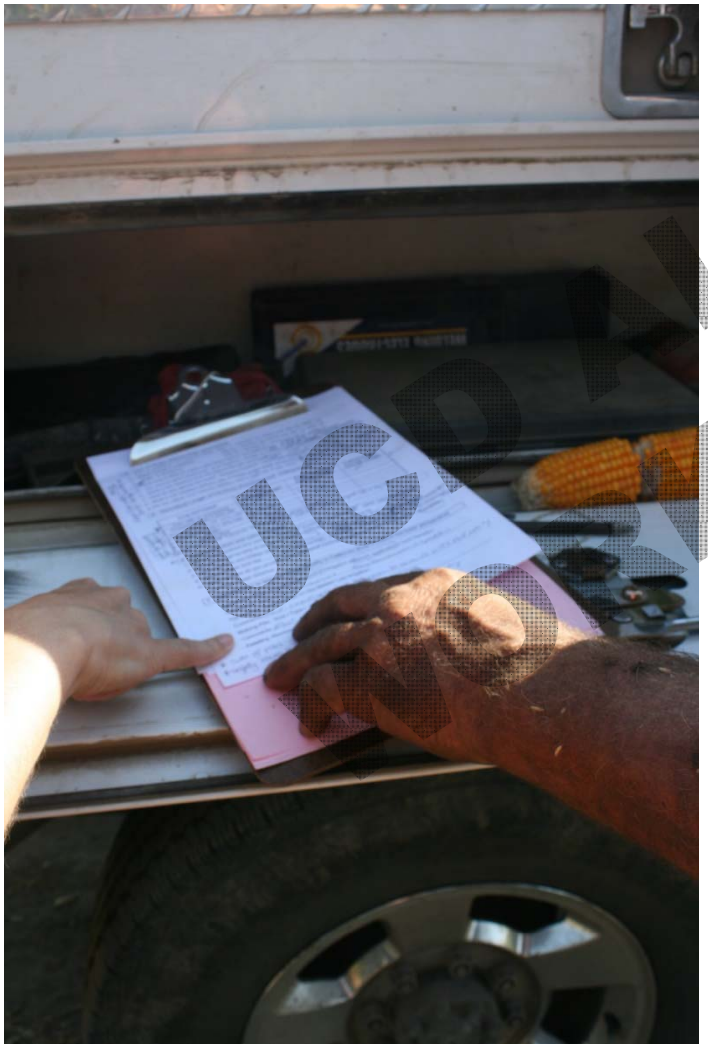
Background

Name:_____
Location _____
Serving the counties of:_____
How many years have you had your business? < 5 5-10 10-15 >15
Other_____
Are there other family members involved in the business? Yes / No, How many?_____
How many employees do you have? _____ Harvesting _____ Mechanics
How many crews do you have? _____ A crew includes: #_____choppers, #_____trucks, #_____packing tractors, #_____water truck, _____foreman
What is the longest distance you travel to provide your services?_____miles
How many acres do you harvest in a calendar yr (averg 5 yr)?
_____

Established Operations



- 25 to 30 in San Joaquin Valley ???
- We contacted 12; interviewed 9
- In person or by phone
- Kern to Merced

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What We Asked

- Background
- Harvest equipment
- Harvest scheduling
- Crops, delivery, packing
- Chop length, processing
- Pricing, subcontracting
- Problems / challenges
- Opportunities to improve quality

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What We Learned

Characteristics

- Business experience - 15 to over 40 years
- Family operations
- Crews – 1 to 9
- Employees – 10 to 130
- Service provided 50 to 70 miles from base
- 100,000 to more than 2 million tons/year

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Crews and Equipment

- Crew = foreman, chopper(s), trucks, packing tractor(s), and often water truck.
- Trucks are owned and/or subcontracted.
- Various brands, models and sizes of choppers and packing tractors.

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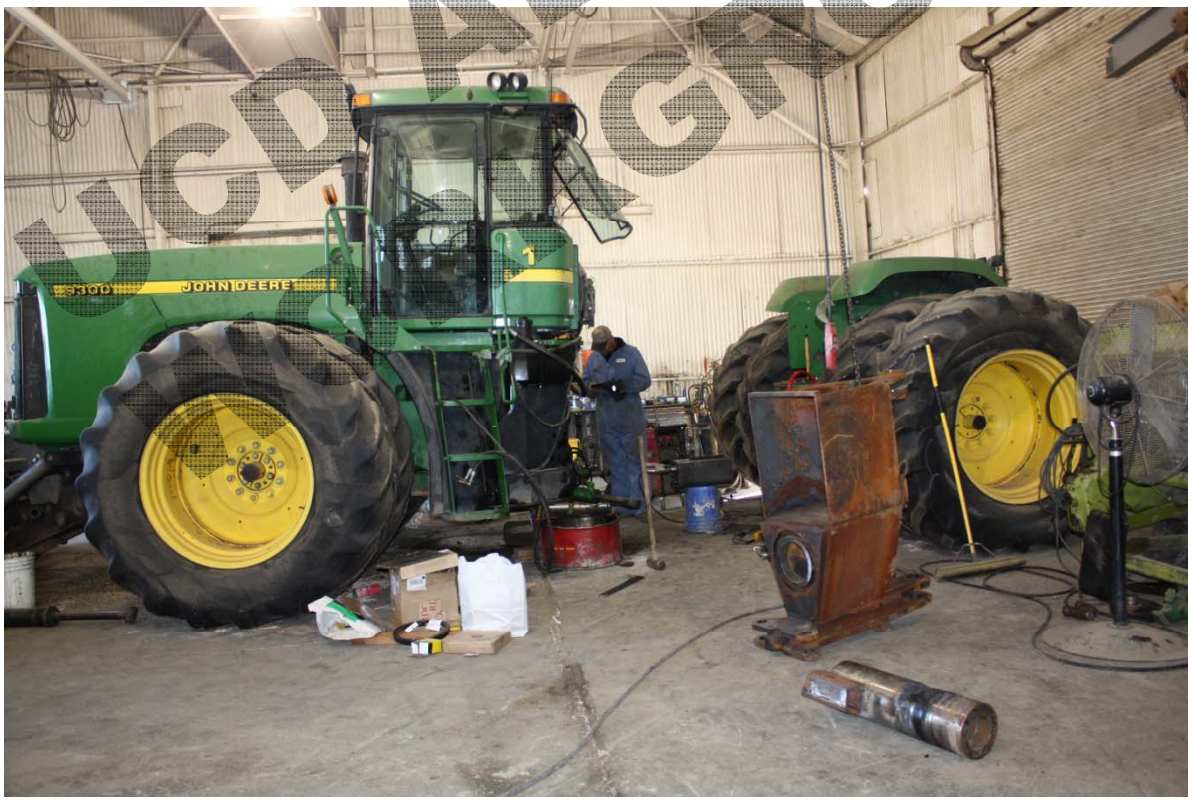
Equipment Service/Repair

- In season - daytime and at night.
- Major overhauls in between seasons.
- Mechanics and well equipped shops.



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CLAAS
960
JAGUAR

Silage Structures

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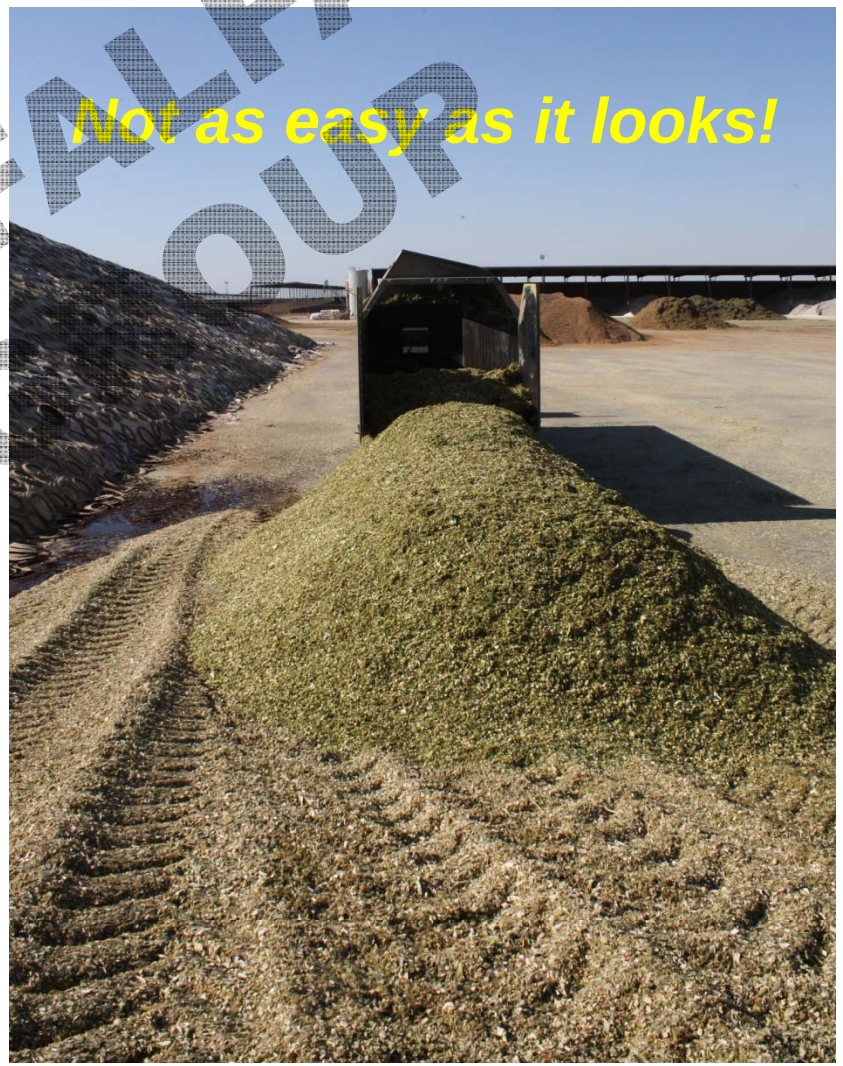
- Pile is most common.
- Bunkers, drive over, bags less common.
- Size range from 500 to over 20,000 tons.

Building Piles

- Time to build varies.
- Days to a month or more.
- Target 150 to 250 tons per hour.
- Temporary covers for extended harvest.
- Opened / resealed 3 or more times.



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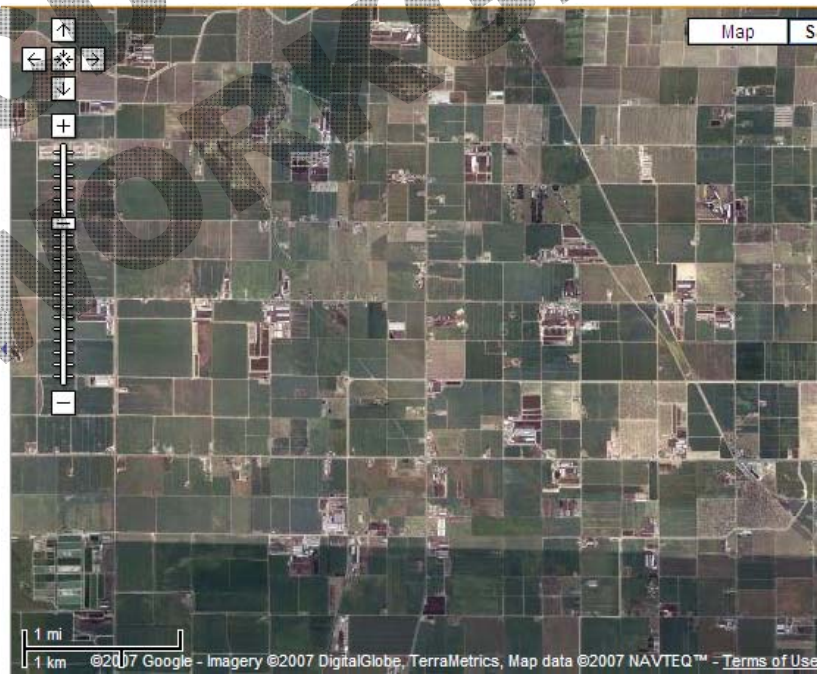
Field Size

- Average 50 to 60 acres (range 20 -160).
- About 1400 to 1700 tons corn.
- Multiple fields required for large piles.
- Adds logistical complexity to harvest.



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Packing Piles

- Packing assured by adjusting number of packing tractors and delivery rate.
- Distance from field to pile is 3 to 5 miles.

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Packing Piles

Great skill is required for packing.

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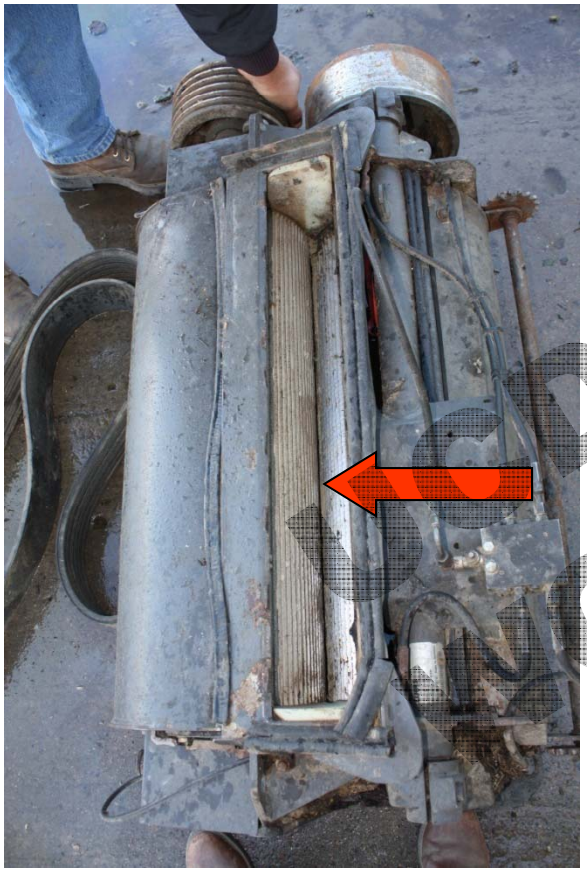
Delivery Rate

- Problem when forage arrives too fast.
- Can adjust truck number, choppers in field.
- Extra tractor on pile not always an option.
- Other variables can impact rate.
- Careful, detailed coordination required.

Drive Over Piles

- Not popular.
- Main concern is space required.
- But if client wants, they will build.

Chop Length (TLC) and Processing



- TLC 10 – 21 mm (0.4 to 0.8 inches).
- Adjust for moisture – shorter for drier material.
- Most corn is processed.
- Roller open 0.5 to 3.0 mm (0.02 to 0.12 inches).

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Services Provided

- Find silage for dairies and dairies for silage.
- Agronomic advice; timing of last irrigation.
- Chop, haul and pack.
- Price range $8.05 to $9.25 per ton.
- Paid by buyer of crop.
- No correction for moisture.
- Extra: inoculant application, additional packing tractor, mileage if more than 2-3 miles from pile.

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Challenges

- Crop moisture assessment
- Short harvest window for small grains
- Inadequate space for building piles
- Difficulty with hired labor
- Working with consultants (especially nutritionists)
- New “start ups” undercutting price
- Collecting payment from dairies

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Issues with Moisture

Timing last irrigation

Issues with Moisture

- Determining moisture of standing crop is very difficult.
- Target is 67 to 70% moisture.

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Dino Giacomazzi

Issues with moisture

Fields are not uniform.

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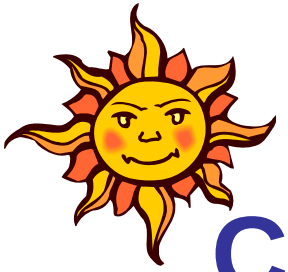
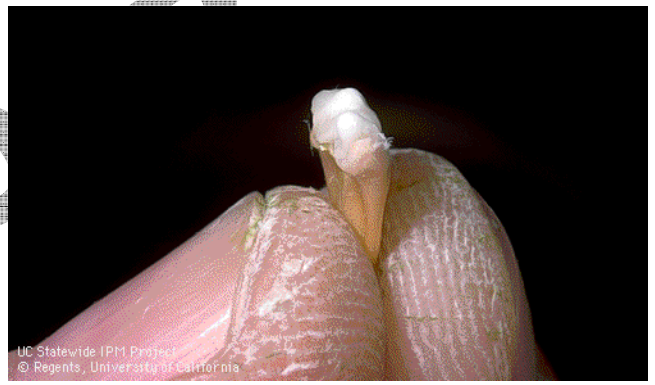
Harvesting when plant moisture is too high leads to excessive run off – or worse, a “split” pile.

Pulling out of a field that is too wet is costly – time and money.



Small Grains: Compressed Harvest Window

- Big problem; south SJV
- Six weeks or less
- Late March to early May
- Mostly wheat; few varieties
- Mature within a narrow time frame
- Harvest capacity stretched to limit



Soft dough stage wheat

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Not Enough Space

- Silage storage capacity has not kept up with increased dairy size.
- Inadequate space for incoming crop.
- Irregular shapes or very high piles can be dangerous.
- Impacts quality.

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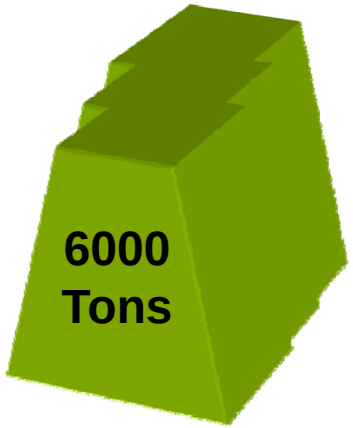
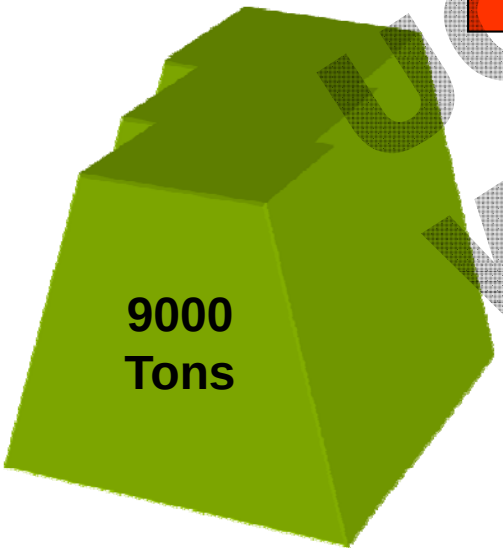
Have space for:



Need space for:



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Labor Issues

- Most work is seasonal.
- “Hard to find good people for seasonal work.”
- Core group may return each season – but need for additional workers can ramp up quickly.

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Issues with Consultants

- Do not always appreciate harvest logistics when making recommendations.
- Communicate <u>early</u>.
- Show up during harvest.
- “We both work for the dairyman.”

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Opportunities

Agronomic:

- Water - slope, leveling, irrigation schedule.
- Manure application to fields.
- Pest and weed control (poor last season).
- Crop selection and planting schedules to lengthen harvest season in spring.
- Focus by seed companies on genetics suited to irrigated Western conditions.

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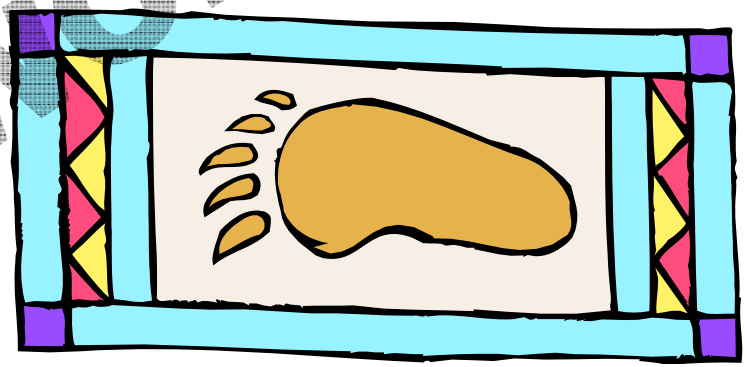
Opportunities

Logistical:

- Water – ability to move volume needed when needed for proper irrigation.
- Pile construction – provide a bigger footprint; “give us more room!”



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Opportunities

Interpersonal:

Foster communication within the team.

Rodney Evangelho, Dan Miller

Don Giacomazzi

? and Doug Gisi

Seed people, growers, dairymen, nutritionists and harvesters – all can benefit from improved understanding of issues and constraints.

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Summary

- Making silage is complex, intense work.
- All aspects require great coordination.
- Harvesters strive to deliver what clients want.
- Agronomic /logistical opportunities to improve quality may be constrained by economy…

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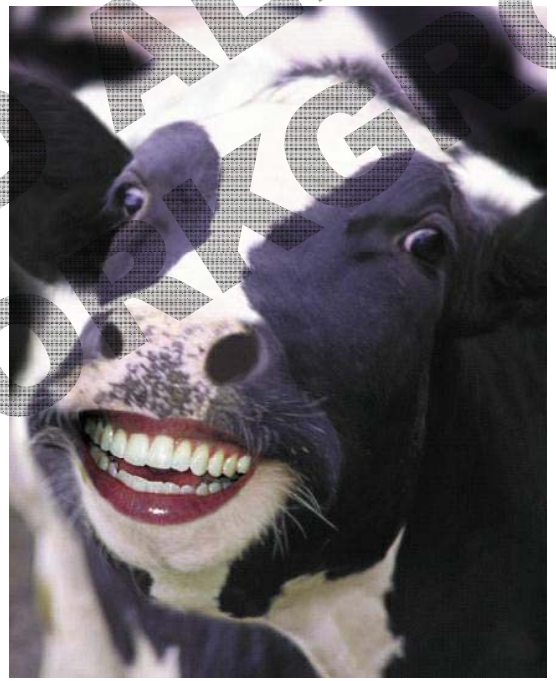
Summary

…open dialogue among everyone with a vested interest in growing, harvesting and feeding silage holds promise for improved quality.



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And that could make EVERYONE happy!

Acknowledgements

Thank you to all of the harvesters that we interviewed – for sharing your time, your stories and your trust in us.

And thank YOU for attending the Silage Symposium (because this starts the dialogue).

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