

Strategies to improve farm profitability

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Partner

Central Sands Dairy LLC

*Thirteenth Annual Dairy
Info Day Feb 27th 2024*



Dr. Gordie Jones

- 15 years Dairy Practice
- 10 years Dairy Nutrition / Facility / Cow Comfort consulting
- 3 years Monsanto (BST) consulting
- 6 years designed & managed Fair Oaks Dairy Farms (20,000 cows)
- 5 years build and manage my dairy farm!
- Consulting Again!



**The Star
of the
show!**





Top 10 cows in the world

- Over 34,000kg / 365 days
- 93Kg / Day !

Selz-Pralle Aftershock 3918

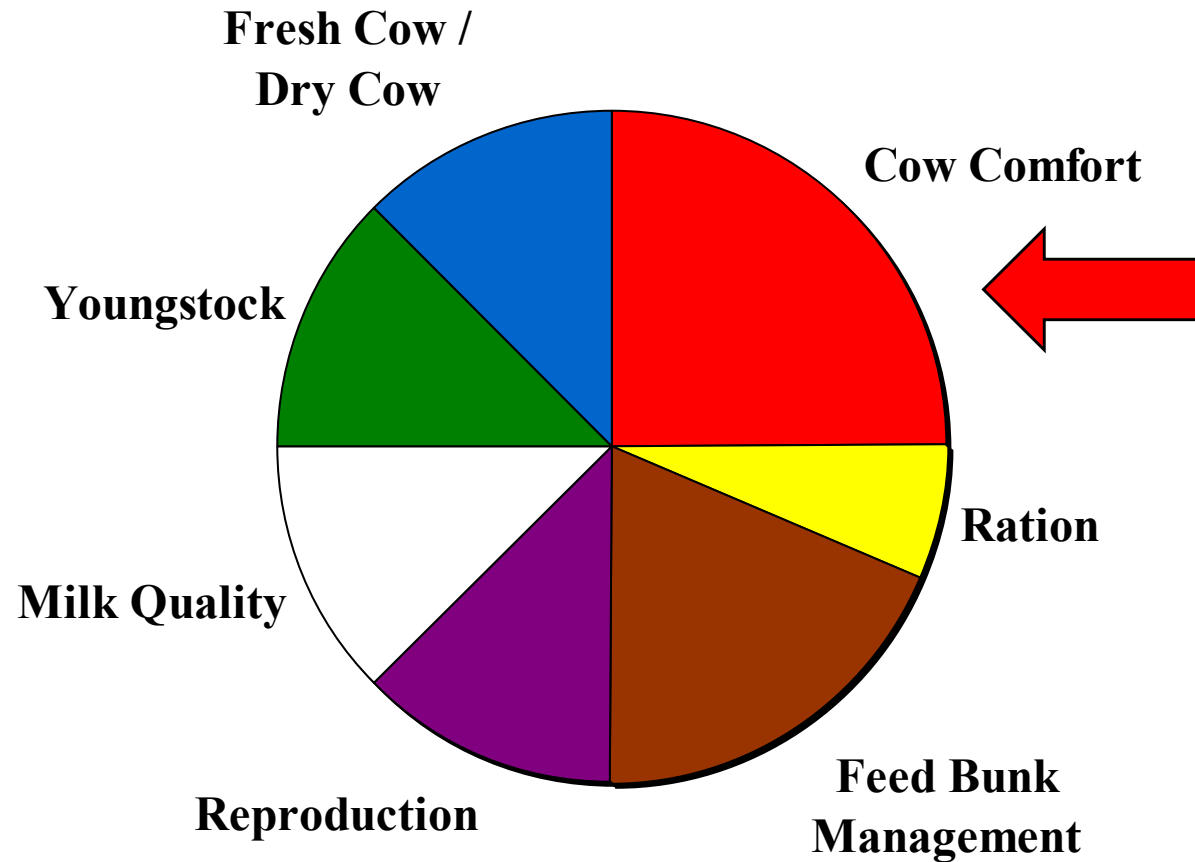


35,532Kg milk in 365 days
3.96 % Fat & 3.06 % Prot
97.3 Kg / Day!

3 things a Cows Should Do!

- Stand to MILK
- Stand to EAT & DRINK
- LAY DOWN

Milk Production





of Cow Comfort

A B C's



Air quality & ventilation

Bunk management

- * Ration formulated, mixed & consumed

- * Bunk design & space

- * Feed quality

Cow comfort

Dr Trevor DeVries

University of Guelph

- "We have grossly underestimated the effects of fresh air on Dry Matter Intake"
- Every time I increase fresh air to a dairy barn the cows go up in milk

Management, Environment & Herd Performance

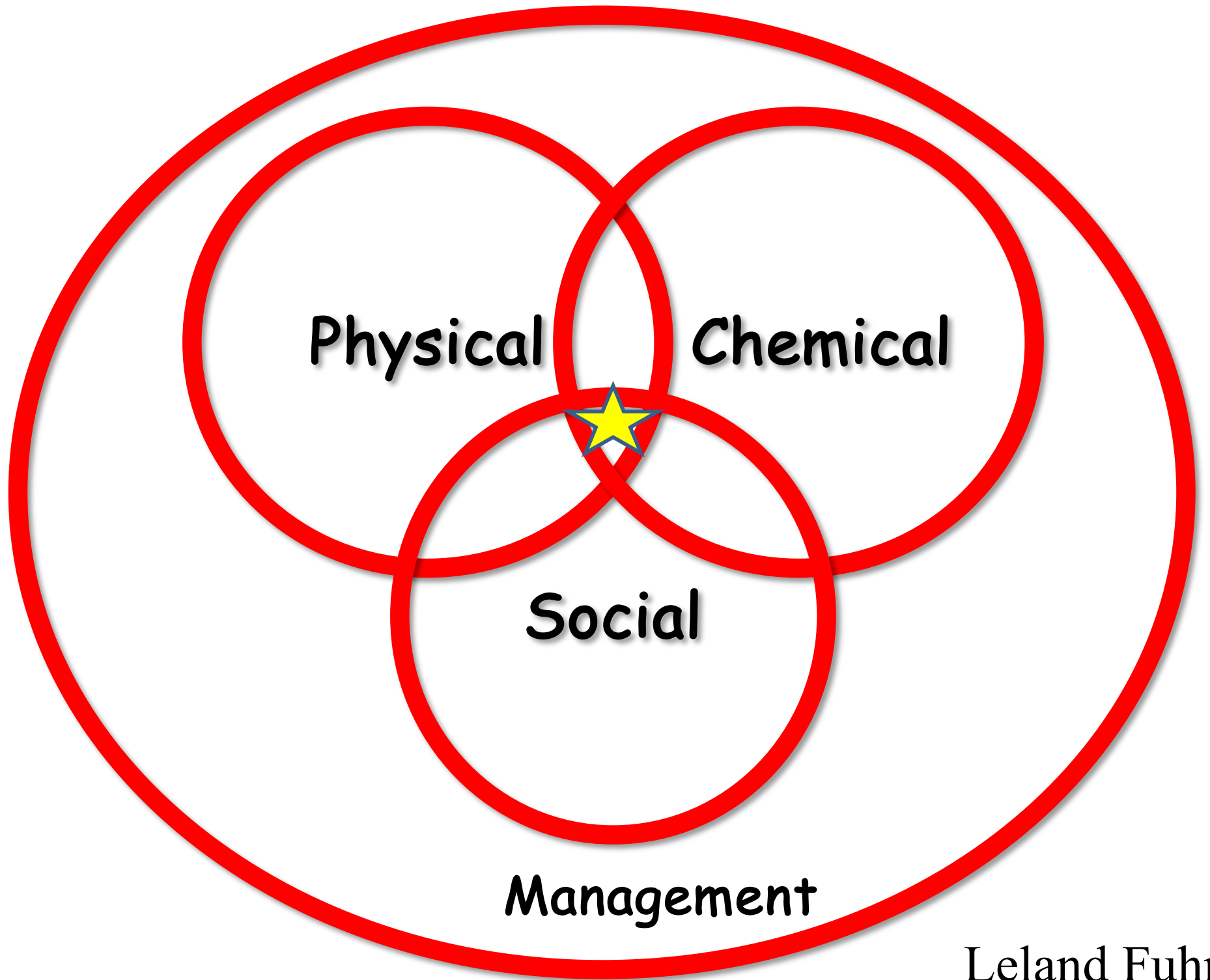
47 herds with similar genetics were fed same TMR

- **Milk yield varied by 29 lb/d (45-74 #) (20-34L)**
- **Non-dietary factors accounted for 56% of variation in milk yield**
 - Feeding management
 - Feeding for refusals (64.1 vs 60.6 lb/d)
 - Feed push-ups (63.7 vs 55 lb/d)
 - Stall design and management
 - Stalls per cow
 - Age at first calving

(Bach et al., 2008)

Performance

Making a Dairy Farm into a Symphony



Leland Fuhr

We are in the "Last Bite Business"

- What does a last bite look like?
- 1 Kg DMI = \$0.40 1 L Milk = \$1.00
- 1 kg DMI = 2.5 L of Milk
- \$0.40 feed = \$2.50 Milk





Peak Milk / Highest Cow Milk

- If 25L/cow, best cows should be 50L
- If 35L/cow, best cow should be 70L
- If 40L/cow, best cow should be 80L
- Average intake 26Kg
- Feeding 50% so 13Kg in bunk twice a day
- Best cow 80 L is 40 L more than average
- $40/2.5 = 16\text{Kg}$ extra intake $26+16 = \mathbf{42\text{Kg DMI}}$
- Cows want to eat 35% of DMI at first meal
- 35% of 42 = 14.7 Kg and you are feeding 13Kg
- 1.7 Kg short = 4.25L short every day!!!! ~ \$5.00

Feed Bunk

- Deliver >60% of DMI at Exit from Parlor
- Cows are Crepuscular!
- If herd is smaller feed at dawn
- If you milk then feed, try feeding in the evening so >60% is bunk at sunrise



"Semicircle Test"

- Every semi circle is a "Last Bite" not eaten
- 1-3Kg short in am
- Almost 5\$ every semicircle every day!





Lock up time

- No more than 1hr with Feed in front of cows
- Do your work with the cows eating
- NEVER Get cow up to eat or lockup

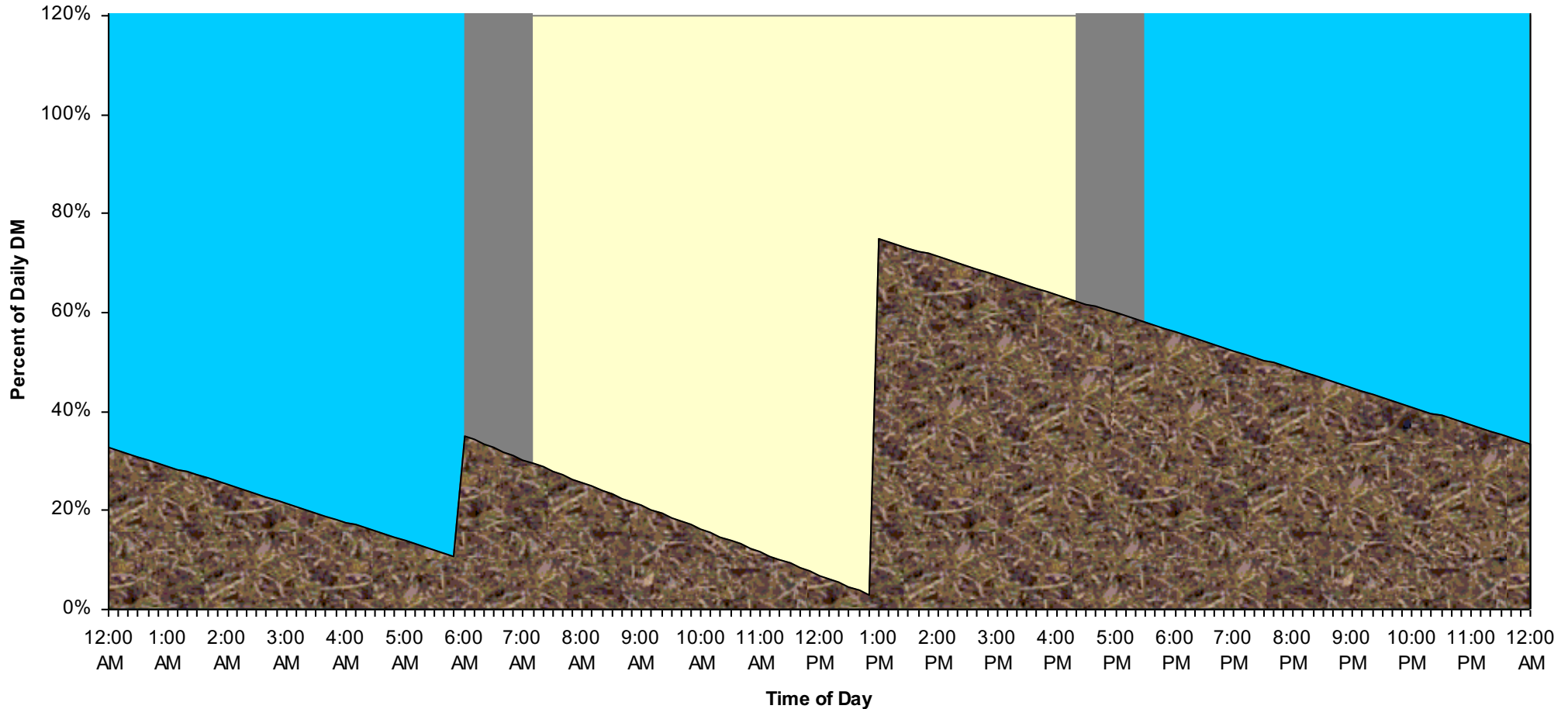


Feeding time @ Fair Oaks

- Trial to prove empty bunk feeding could work

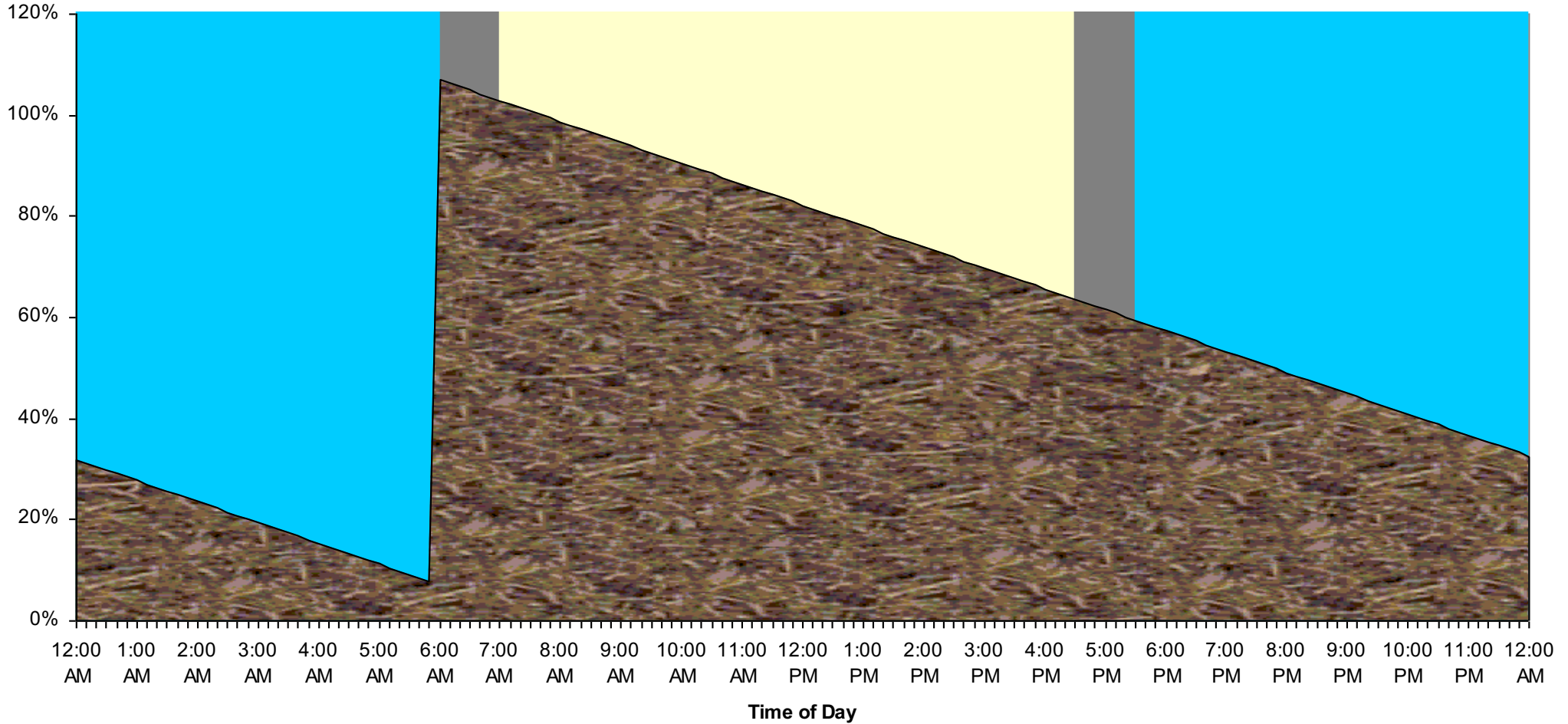
Empty Bunk Feeding

Feed In Manger by Hour



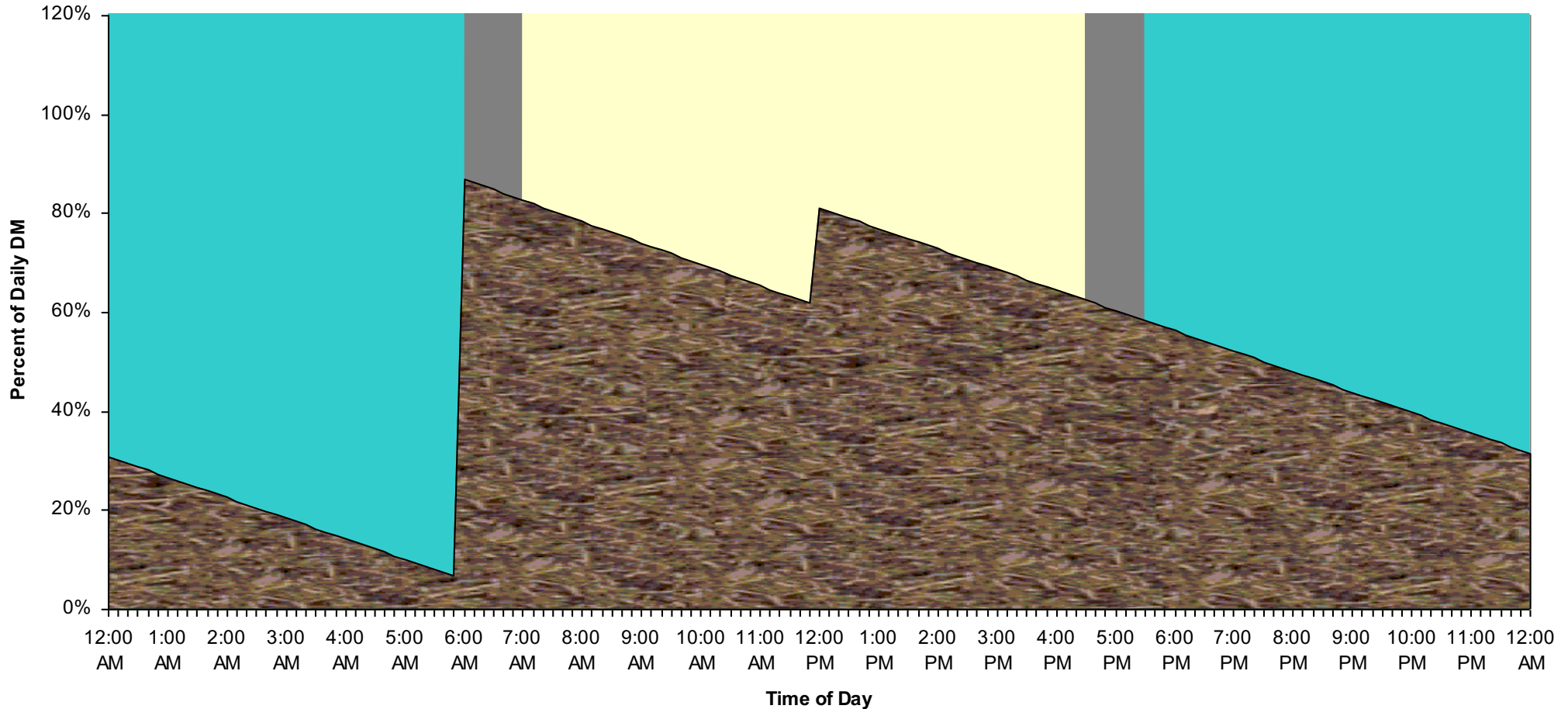
Once a day feeding

Feed In Manger by Hour
Newberry Dairy



80% AM 20% PM feeding

Feed In Manger by Hour
Fair Oaks Dairy Proposed



20 hours

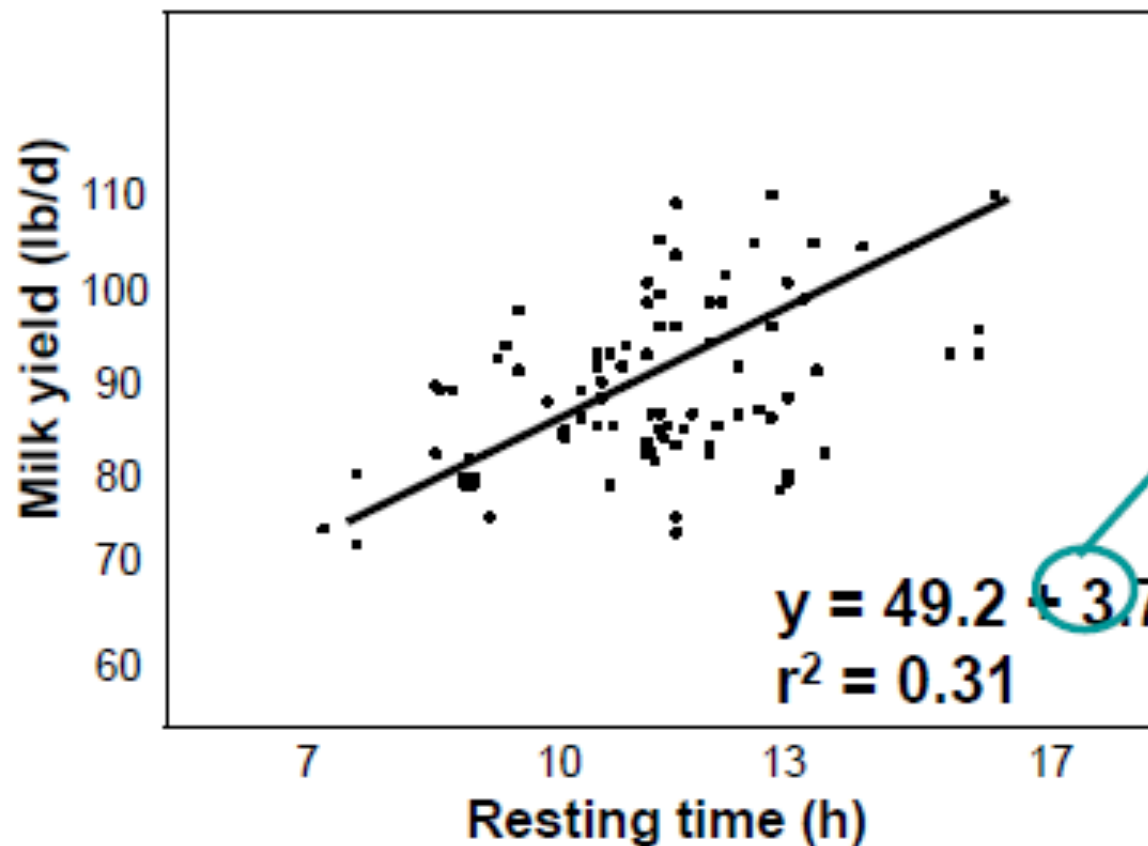
- Cows must be in pen 20 hours a day
- Gate Closed
- Bunk should never be empty
- Except when pushing out feed
- Weigh Back 1 kg DM not %

3 things a Cows Should Do!

- Stand to MILK
- Stand to EAT & DRINK
- LAY DOWN

Relationship Between Resting and Milk Yield

Miner Institute database



Increased resting time with greater DIM, milk yield (Bach et al., 2010)

~3.7 lb/d (1.7L) more milk for each extra hour

2 to 3.5 lb/cow

Novus (2.7 L) more in the fresh pen!

Get to Feed : Get to Bed

- If she can't get to feed, she doesn't eat!
- If she can't get to bed, she doesn't lay down!
- 2 row pen, Nose to Nose 50% cows Crossovers
- 3 row pen, 70% cows Crossovers
- 2 row Tail to Tail 100% use Crossovers







Swollen Hocks

- If you have swollen hocks
- You are losing +3L milk







Bedding

- Provide Cushion for cow!
- Absorb moisture to prevent bacterial growth!
- Prevent friction, prevent injury to Hocks!

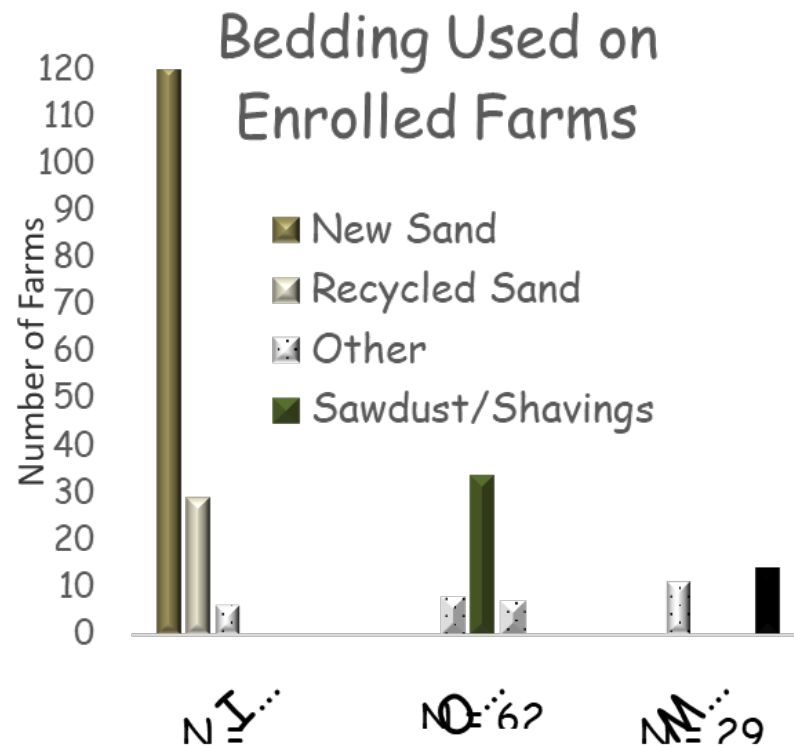
Bedding

What type should you consider?

- Sand?
- Solids both digested and raw?
- Mattresses with bedding?

Bedding Study - Farm Characteristics

- 325 herds
- 282,235 lactating cows
- Herd size -
 - 255 to 8,100 lactating cows
 - 37 kg/cow/day Milking routine
 - >99% pre & post dip
 - 92% dry teats
 - 87% forestrip



Ruegg and
Rowbotham,
JDS, 2015

Characteristics by Bedding Type

Herds with a Single Type of Bedding

Outcome	Sand Bedding	Mattresses with sawdust	Manure - based bedding
Number of farms	195	62	29
Number of cows	849	706	1,502
Milk/cow/day kg	37.7	34.5	35.4
Bulk milk SCC (cells/mL)	198,000	<u>220,000</u>	<u>248,000</u>
Cows with Milk not Sold (%)	1.6%	<u>1.9%</u>	<u>2.4%</u>
Cows milking $4 \frac{1}{4}$ (%)	4.5%	4.8%	6.3%

As compared to herds using Sand Bedding

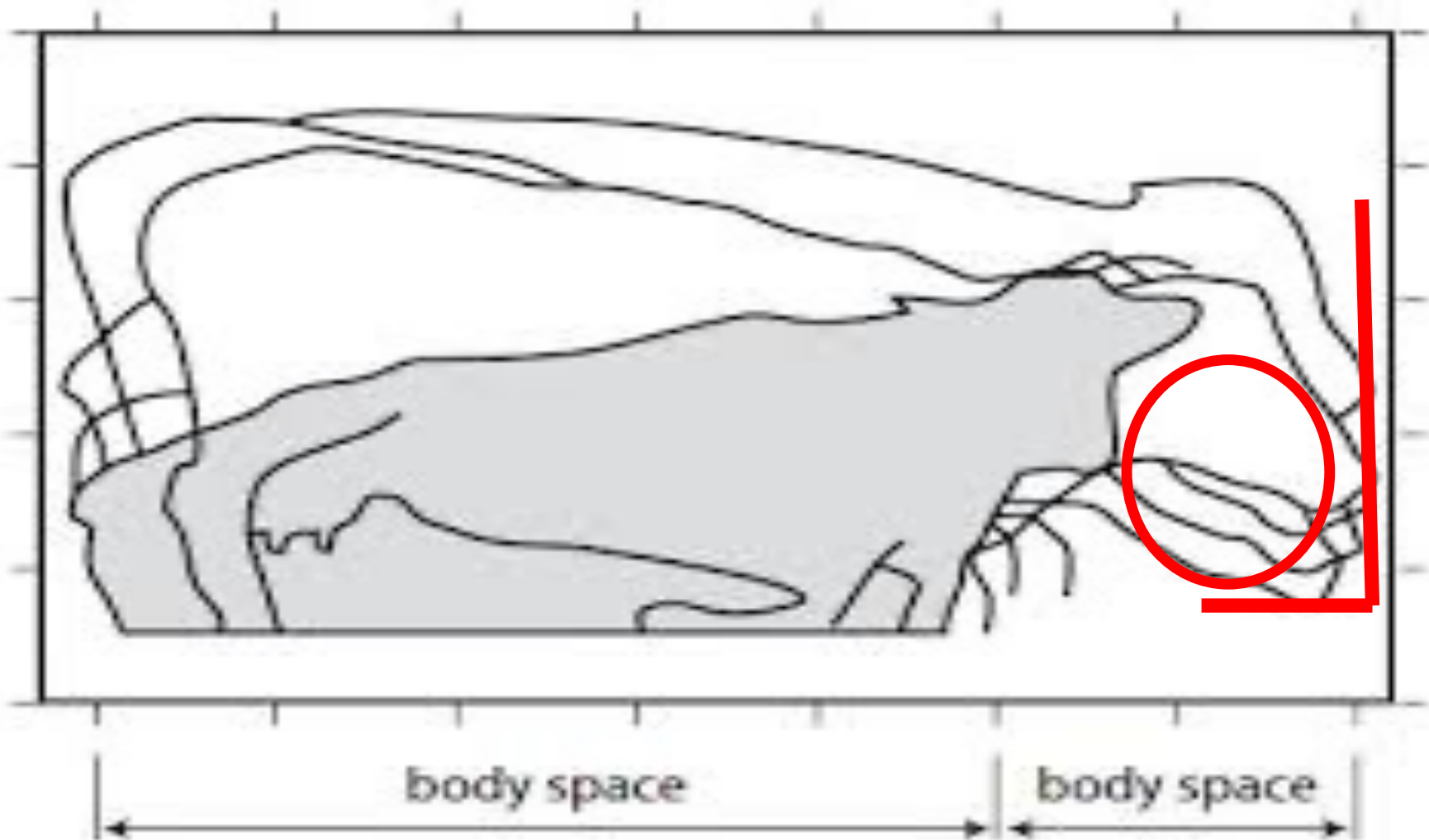
- Herds with Manure or Other organic bedding
 - Produced considerably less milk
 - Mat 3.2L
 - Solids 2.3L
- Mastitis probably accounted for a portion of the loss
 - Greater BT SCC
 - Greater % milk discarded
 - Greater % cows with dry quarters



3 things a Cows Should Do!

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- Stand to EAT & DRINK
- LAY DOWN

Lunge Space!



Source: Irish and Merrill.

Anything in red circle 3L milk











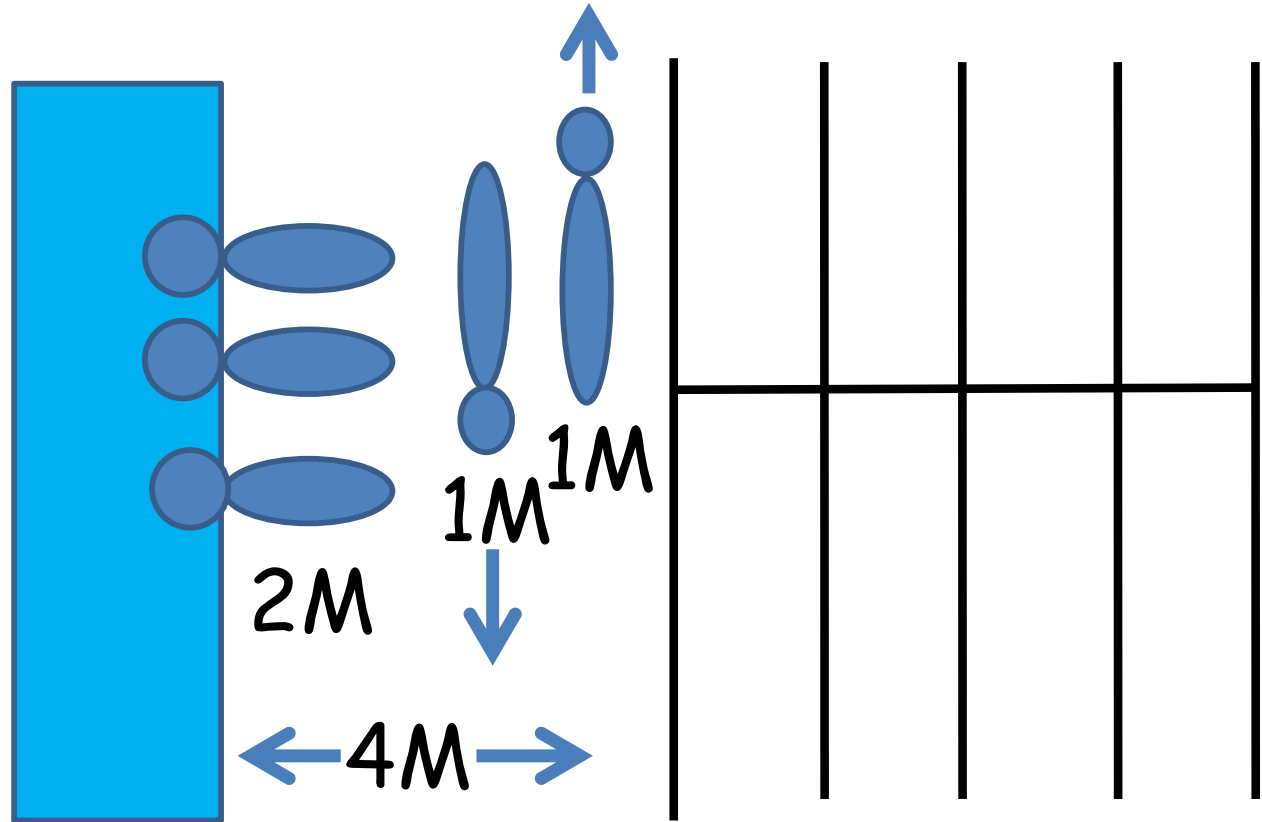
Water

- Cows drink +30% of their intake
- Within the first hour after milking.

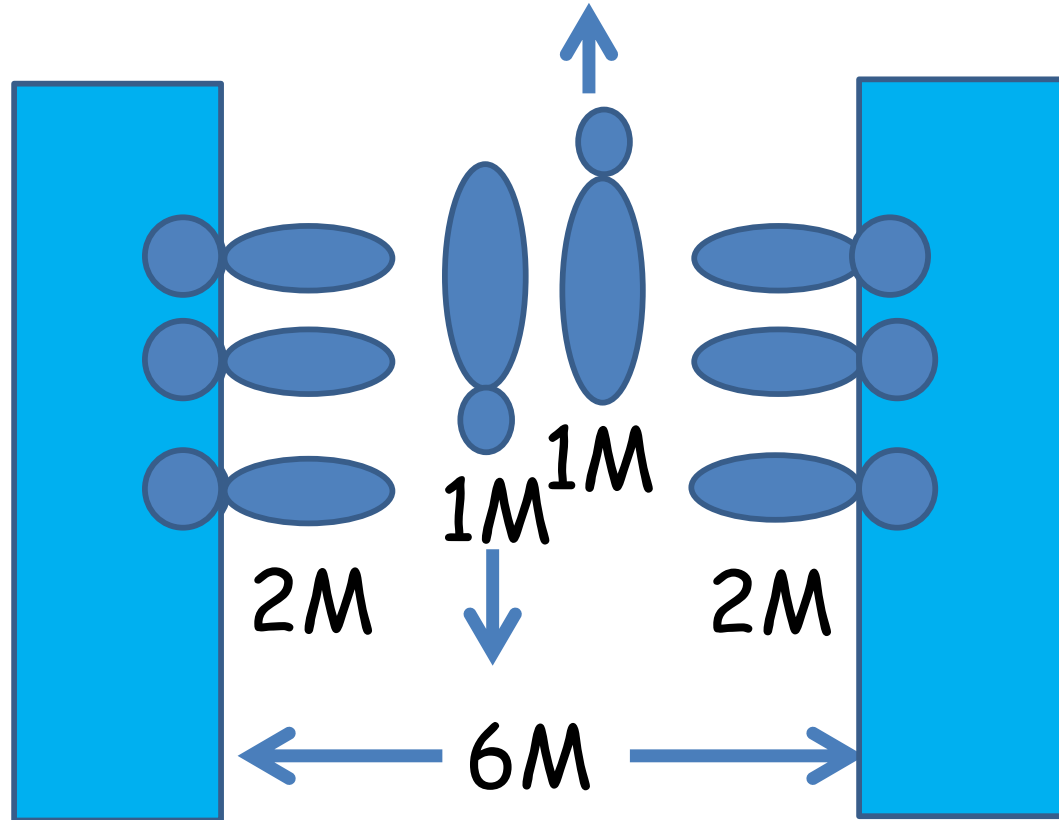




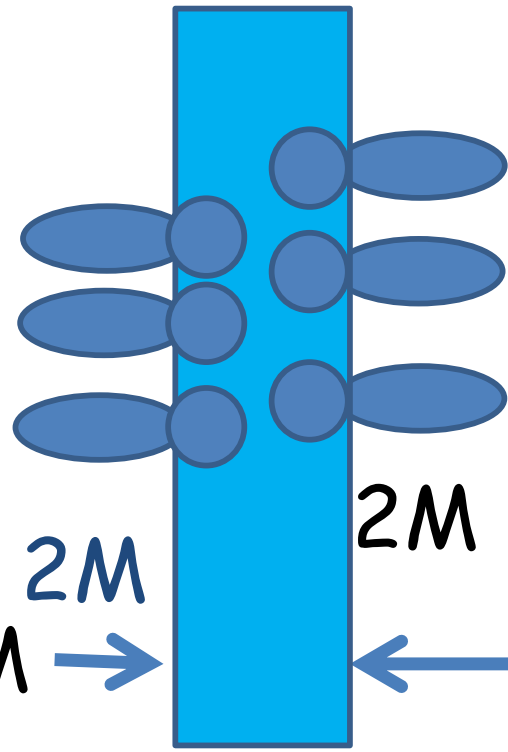
All Crossovers and feed lanes



All Crossovers and feed lanes



Crossovers to divide pens



1M

1M

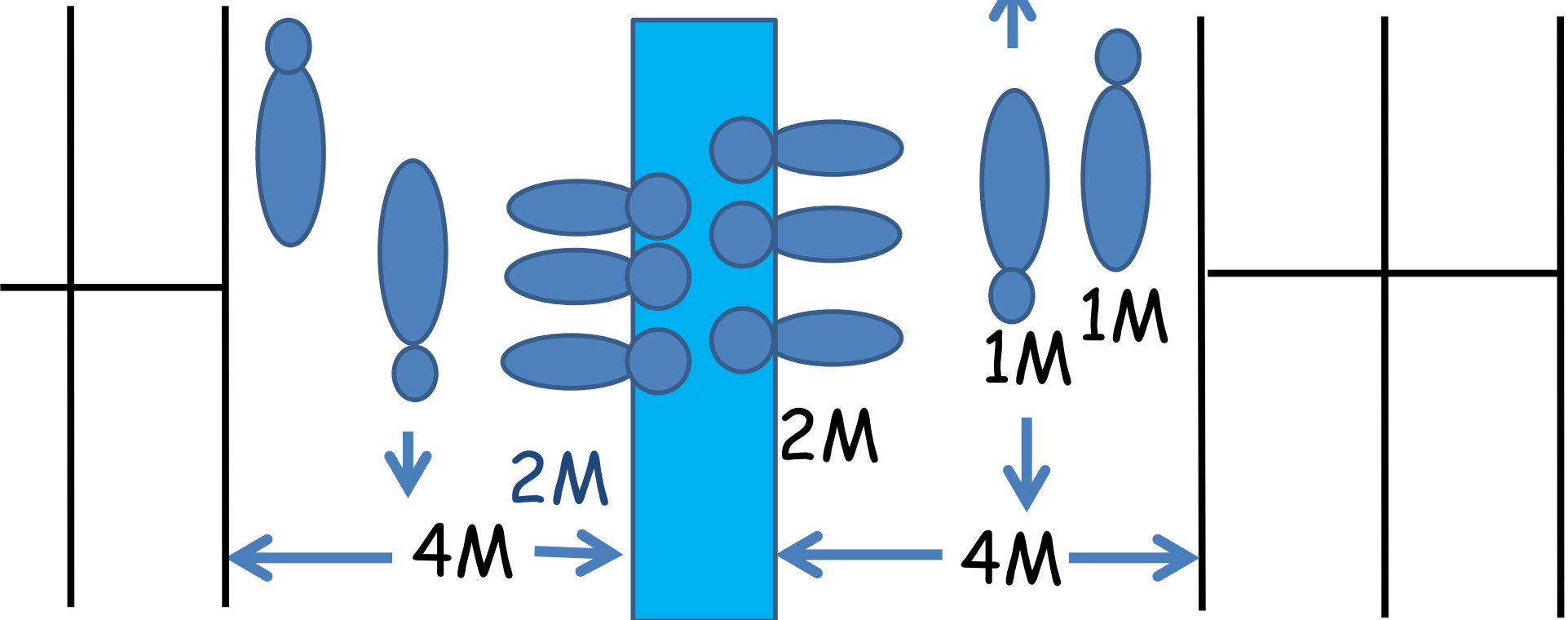


4M

2M

2M

4M



Social Order

- Cows can only learn 100 names (faces)
- 1-100 cows = 1 social order
- 100-200 cows = 2 social orders
- Introduce cows to new social order in groups
- Try moving in late evening into new pens
- Most cows will lose 2-3L with new social groups.

All Freestalls Barns must have:

- 4M cross overs + waterer
- 4M + feedlane
- NO Deadends, cows walk in circles
- 10cm Of water space/cow
- Waterers in the middle of Crossovers add flexibility
- 2 waterers per 100 cows
- So, if group is <100 cows 2 waterers
- If group is >100 cows 4 waterers

Get it correct!!
And it looks like this!



Get it
wrong!!
And it
looks
like this!



Stop making it so hard

- Great Air
- Great Beds
- Easy Access to Beds (bigger crossovers!)
- Easy Access to Feed >60% in Bunk 1st feeding
- One Milk cow ration
- One Dry Ration (Goldilocks!)

Stop making it so hard

- Big main street
- Easy in & out of Pen
- Least Labor
- No job should take more than one person

" Milk is the Absence of
stress!!!"

Questions? Thoughts?



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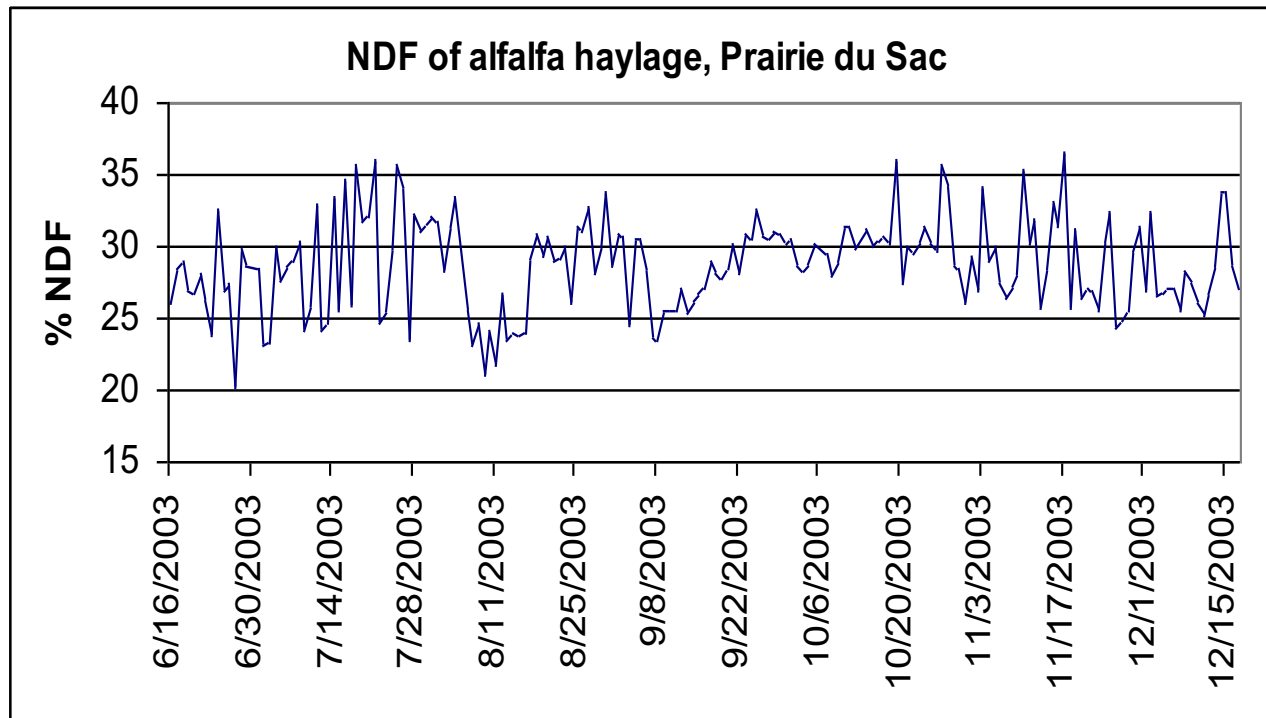
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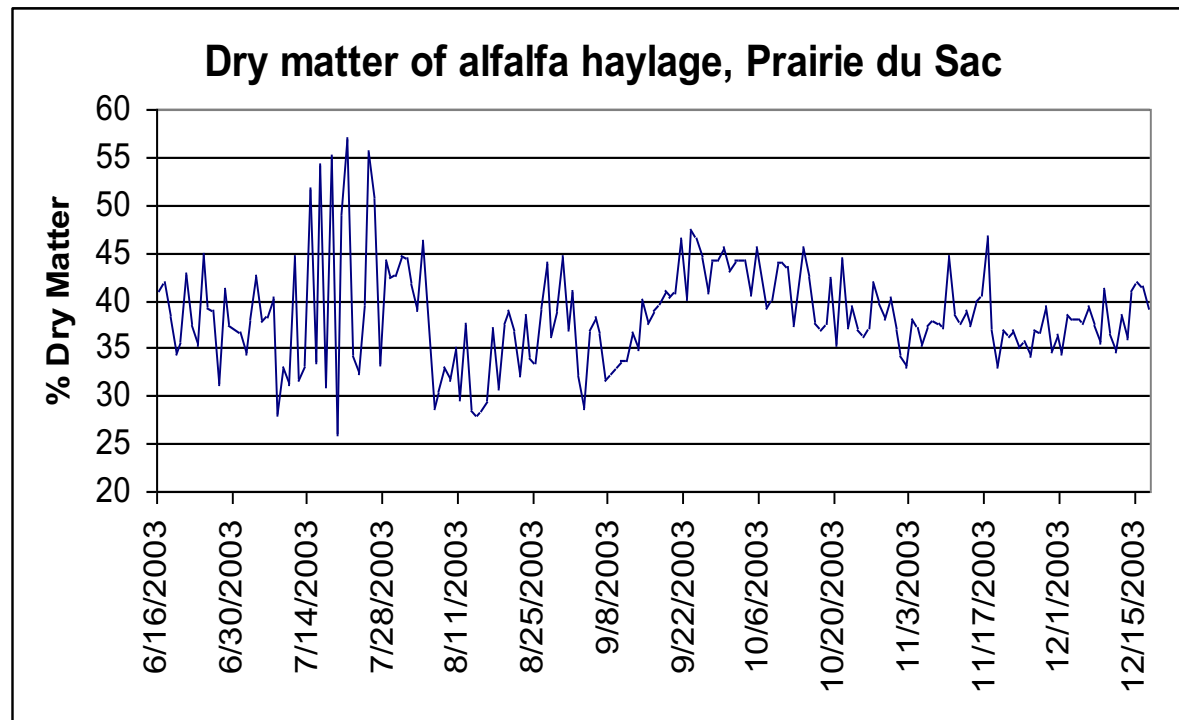
gordon.a.jones@att.net

Variation in forages



Dr Dan Undersander

Variation in forages



Dr Dan Undersander







Questions? Thoughts?



All Dairy Facilities are Tools

- Facilities are tools that let you implement the dairy plan.
- If no plan, then the facility will dictate management
- Facilities last a long time.
- So do your decisions!

Performance

- Welfare / Cow Comfort
- Nutrition / Rations
- Management / People

Goals of Management

- Breed cows
- Pregnancy check
- Vaccinate Herd
- Milk quickly
- Manure
- Treatment
- Deliver Feed
- Deliver Bedding
- 20 hours of eating/ drinking/ lying
- Move Cows
- ???

"Predicting the future is like driving a car blindfolded, following the instructions of someone looking out the back window."