Feeding Management Practices on California Dairies

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Objectives

1. Describe current feeding management practices on California's Central Valley dairies.

2. Identify opportunities to optimize feeding management.

Methodology

In summer 2009, a feeding management survey was mailed to dairy producers in Tulare, Stanislaus, and San Joaquin; the first, third and seventh largest dairy counties in California.

Methodology

Producers received an envelope containing:

1) an invitation letter to participate in the study,

2) a double sided one-page survey, and

3) a pre-paid return envelope.

Participant Dairies

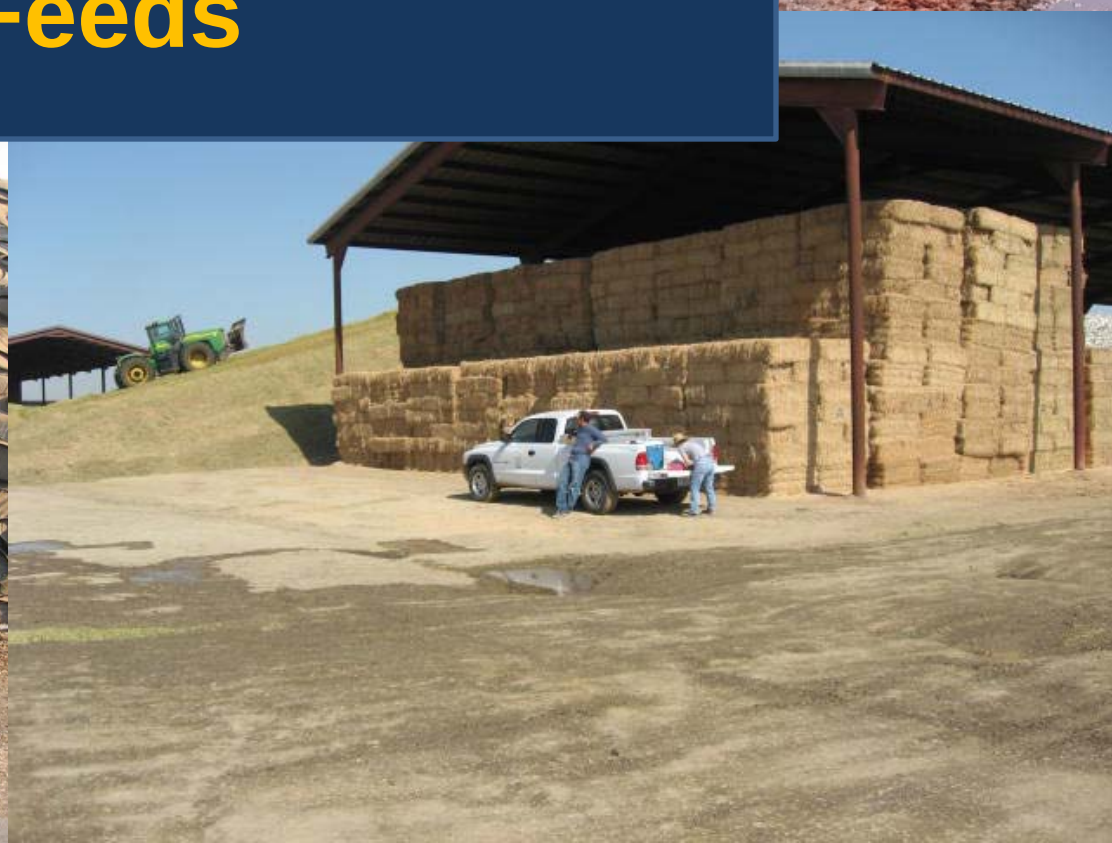
Response rate was 16.9% (120/710).

Herd size range: 160 to 6,600 lactating cows (median=950).

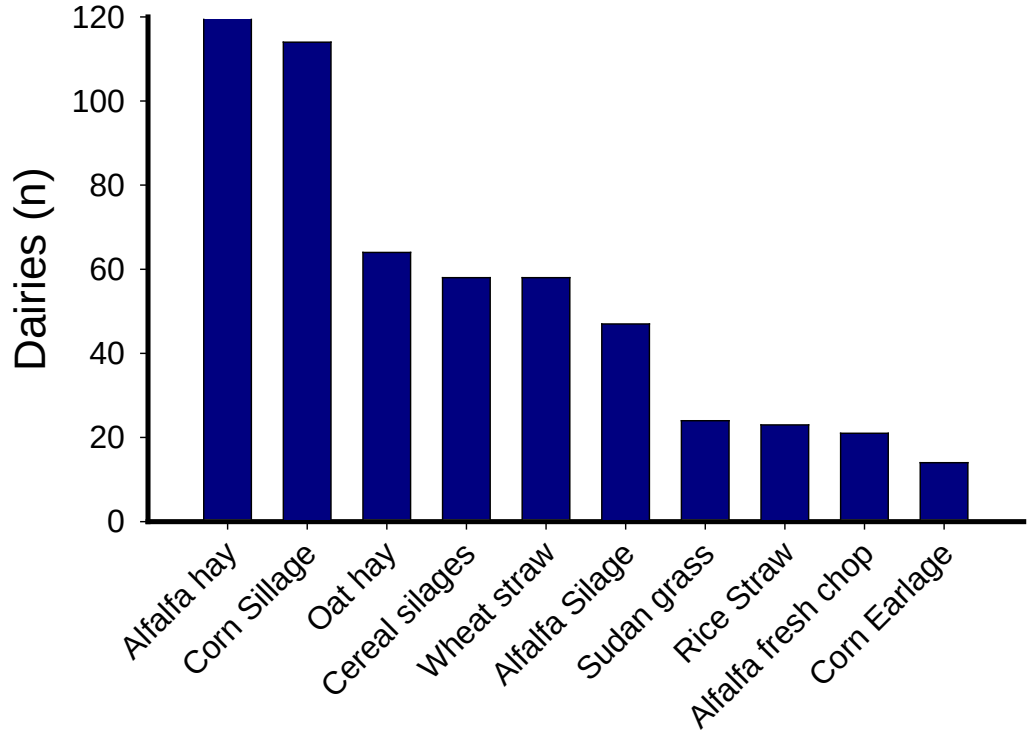
Results Outline

- ❑ Feeds used in Central Valley's dairies
- ❑ TMR Preparation and Mixing Equipment
- ❑ Feed Bunk Management Practices in High Producing Pens
- ❑ Software and Monitoring Tools

Feeds

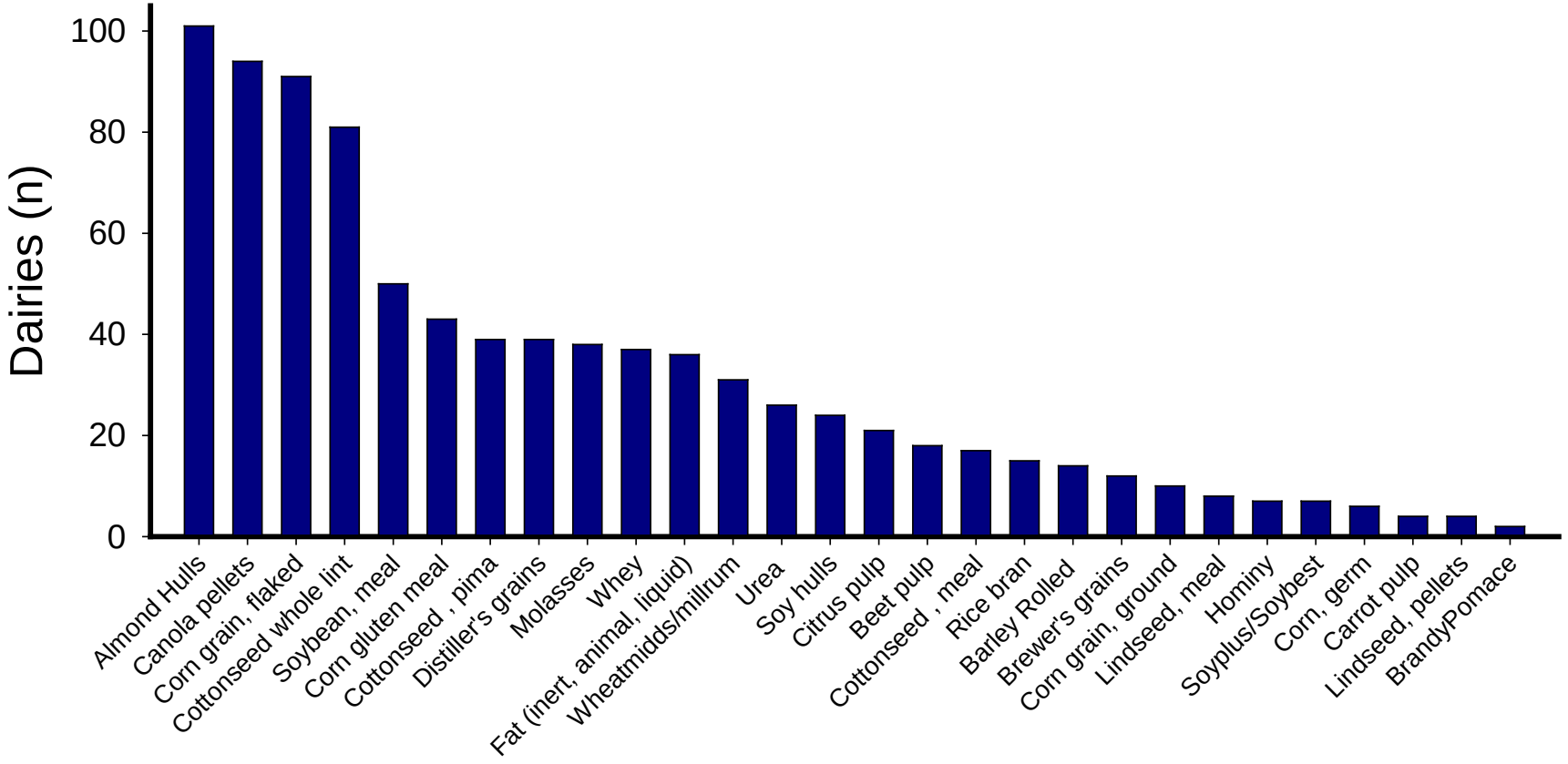


What forages do you feed?



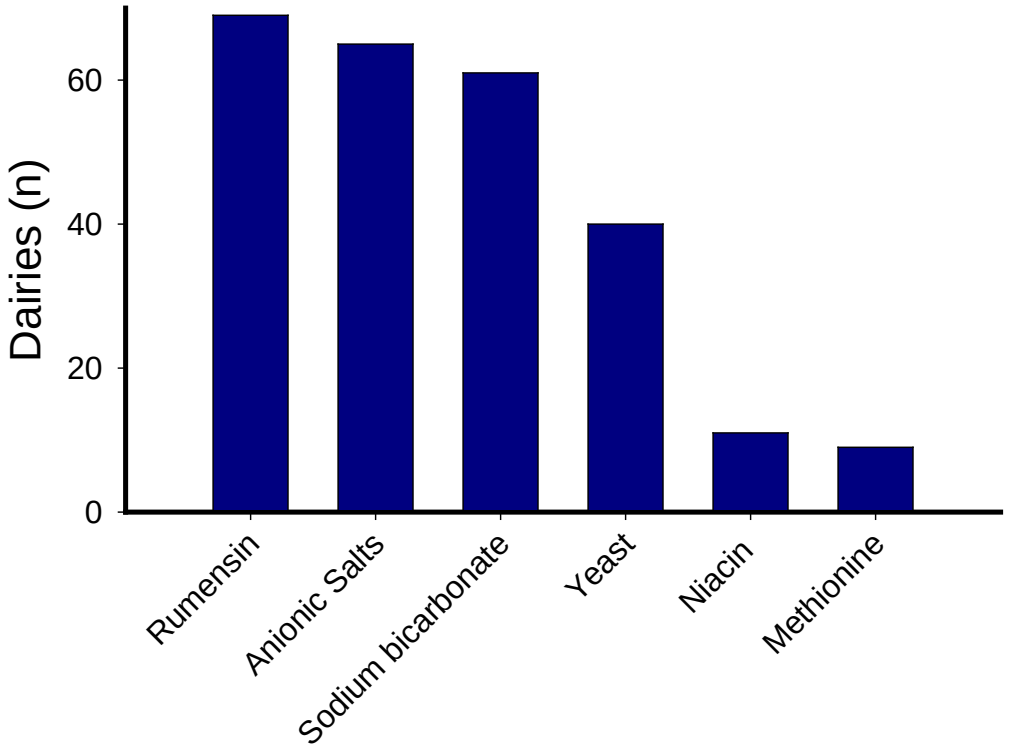
Alfalfa hay and corn silage are the two most common forages fed to dairy cows in California dairies. Cereal hay and silage are also frequently fed.

What byproducts and grains do you feed?



Very diverse byproducts are incorporated into dairy rations. This is a result of a vibrant local agriculture industry. Almond hulls and cottonseed (whole lint and pima) are the two most common byproducts.

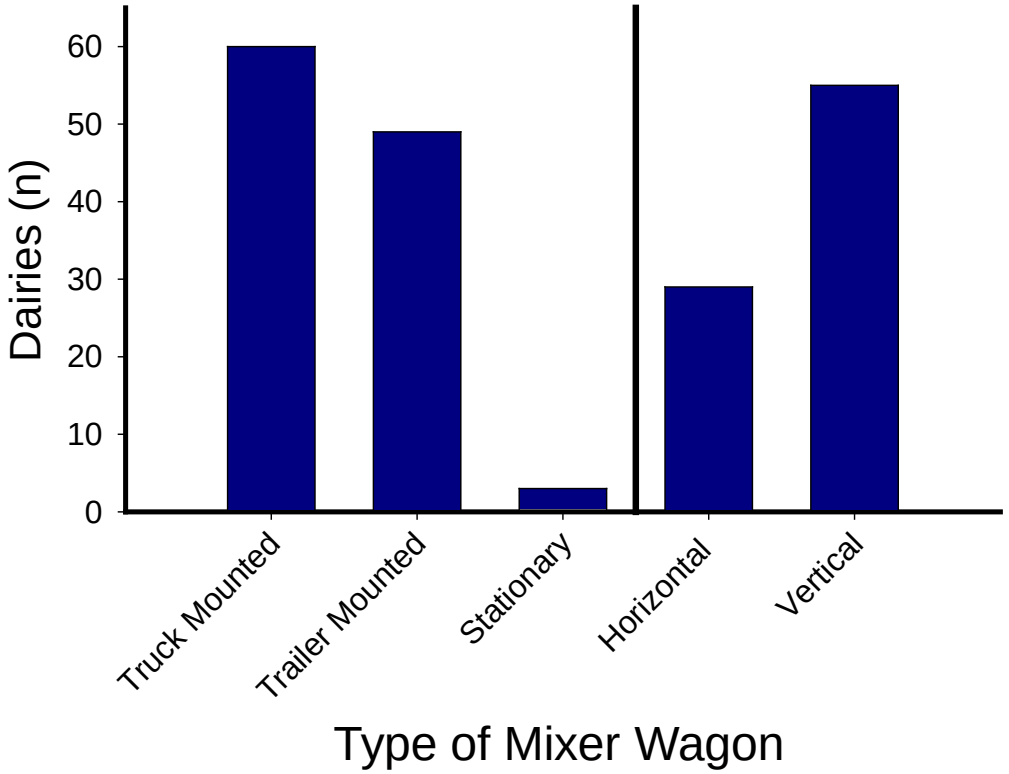
What additives do you feed?



Rumensin, anionic salts, sodium bicarbonate and yeast supplements are common additives used in dairy rations.

TMR Preparation and Mixing Equipment

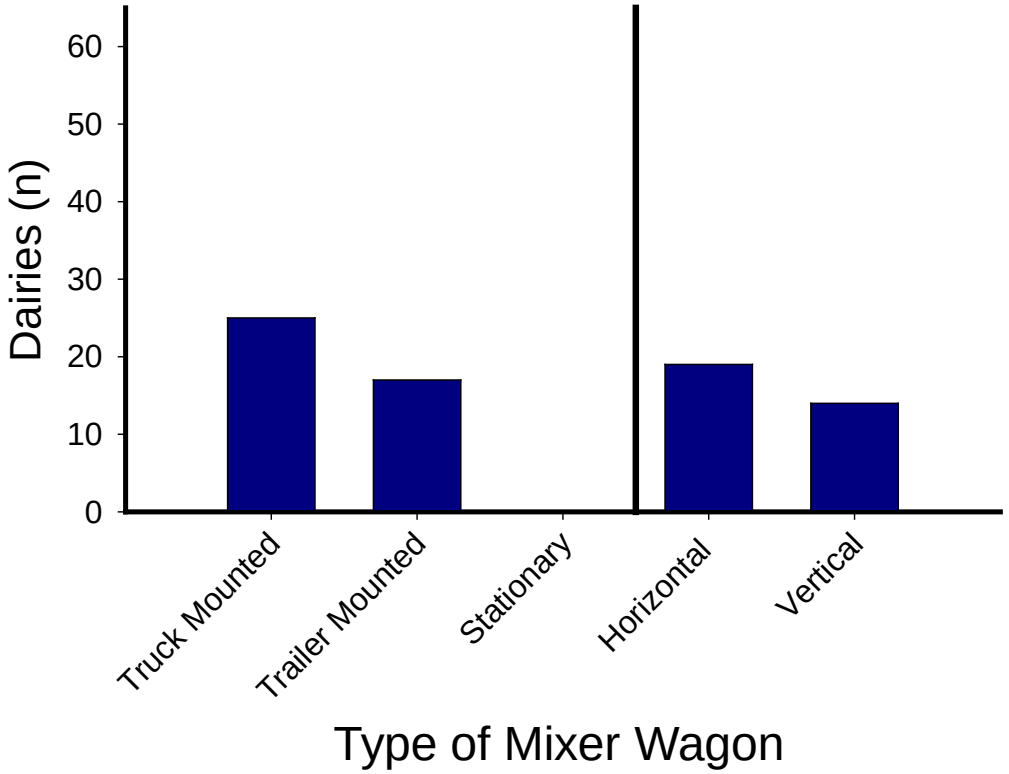
What type of mixer wagon do you have? Primary Mixer Wagon



(n=112/120)

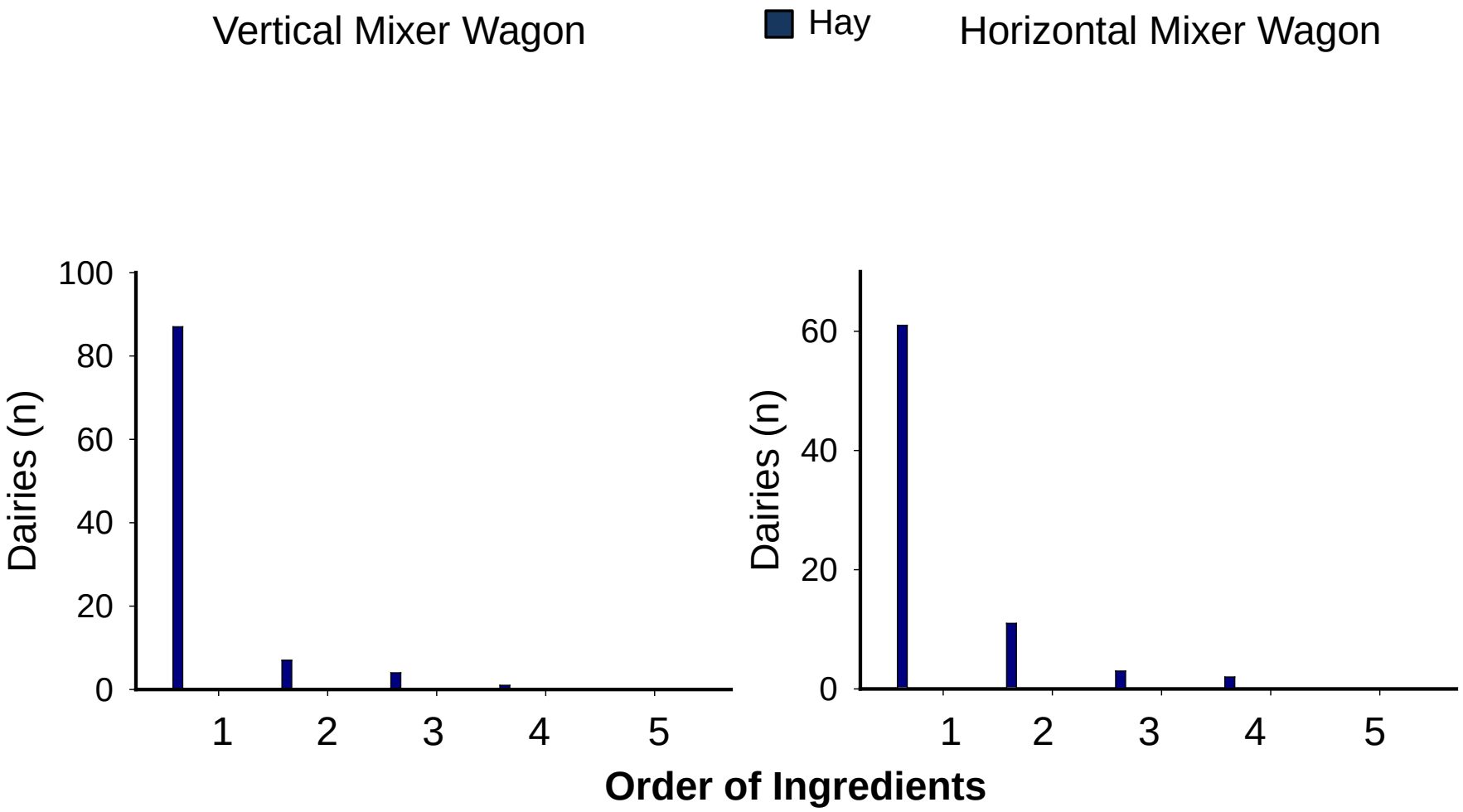
Primary mixer wagons are either truck mounted or trailer mounted. Vertical mixers are more popular than horizontal mixers.

What type of mixer wagon do you have? Secondary Mixer Wagon



No one type of mixer wagon is more popular than another.

In which order are feeds added to the mixer?



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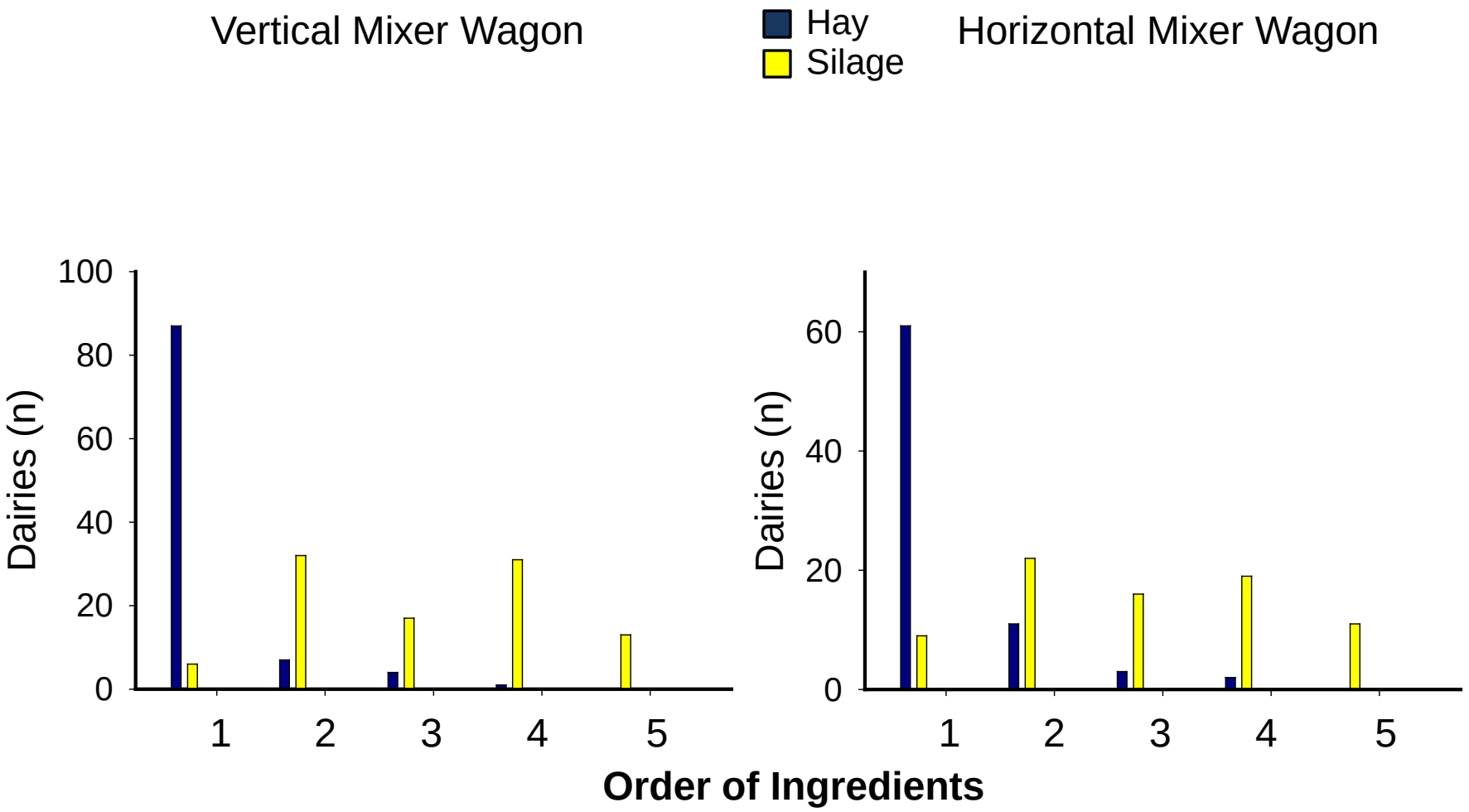

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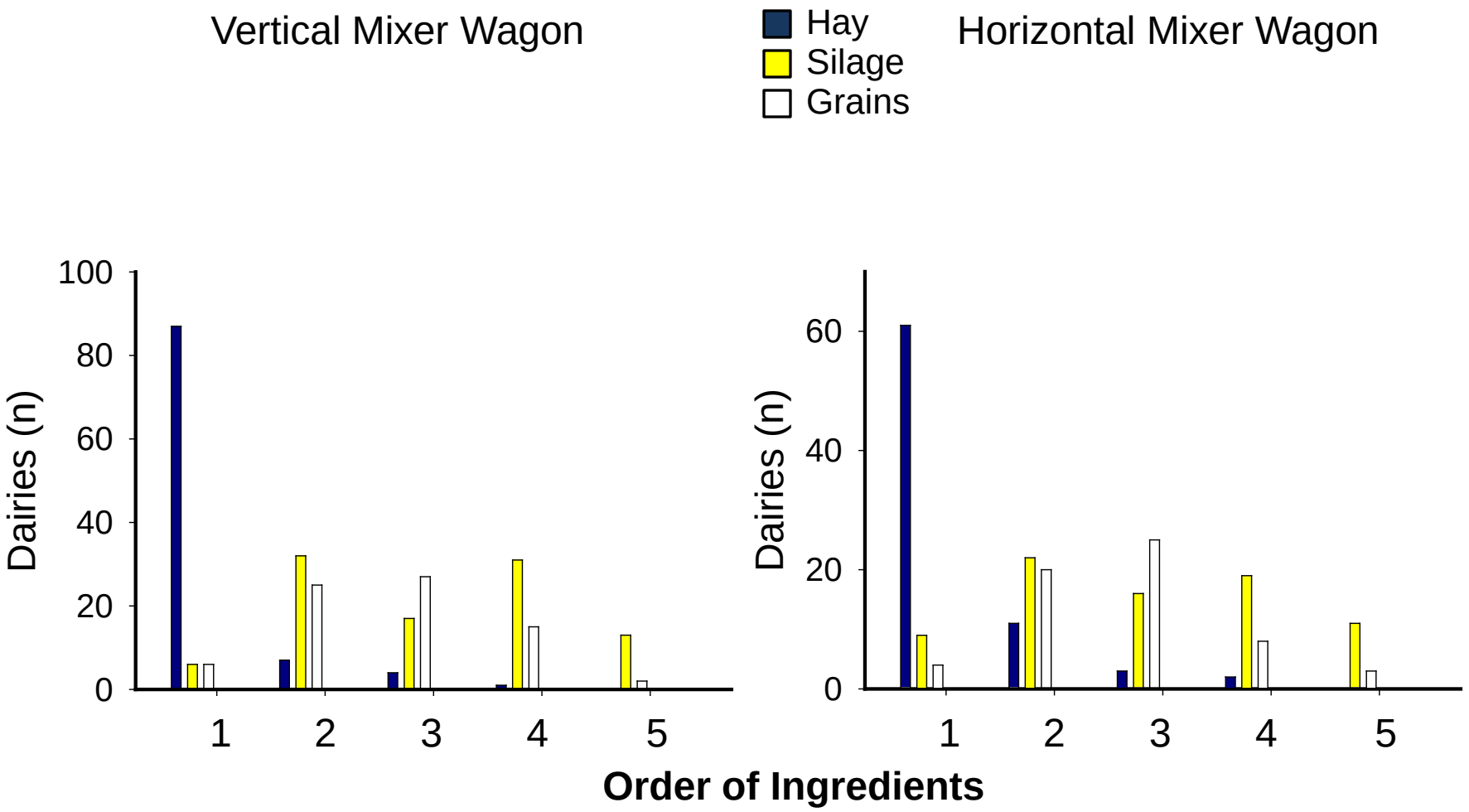

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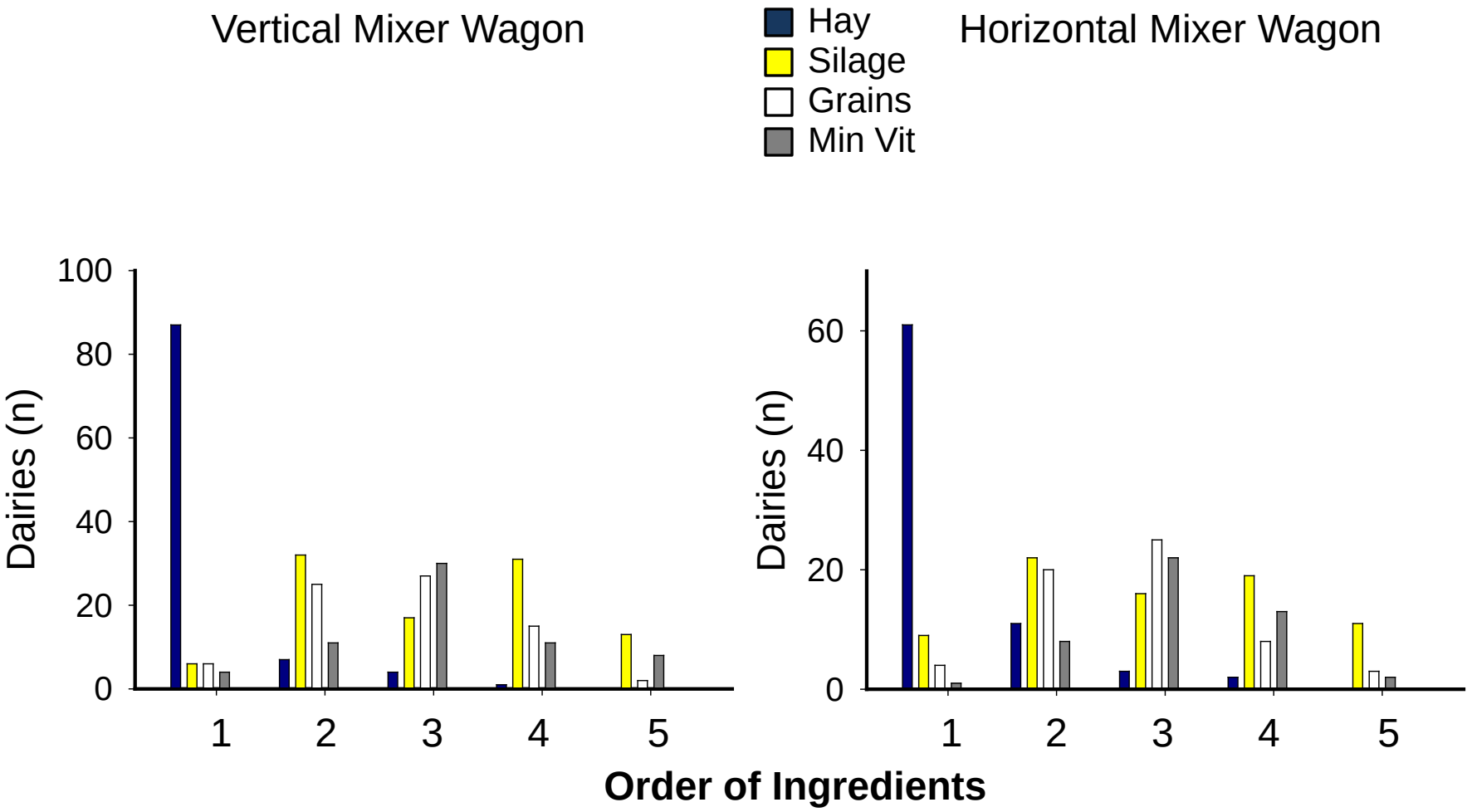

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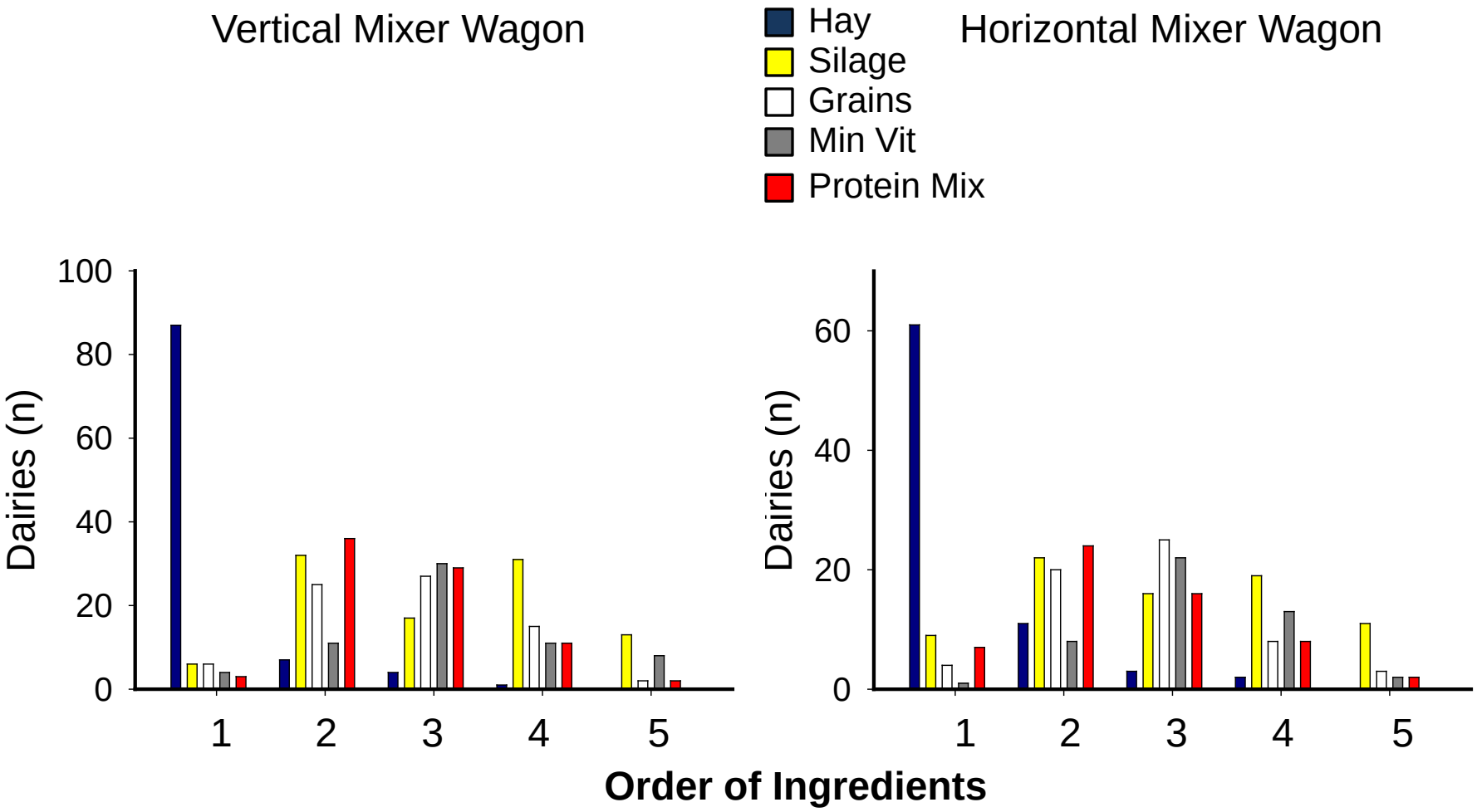
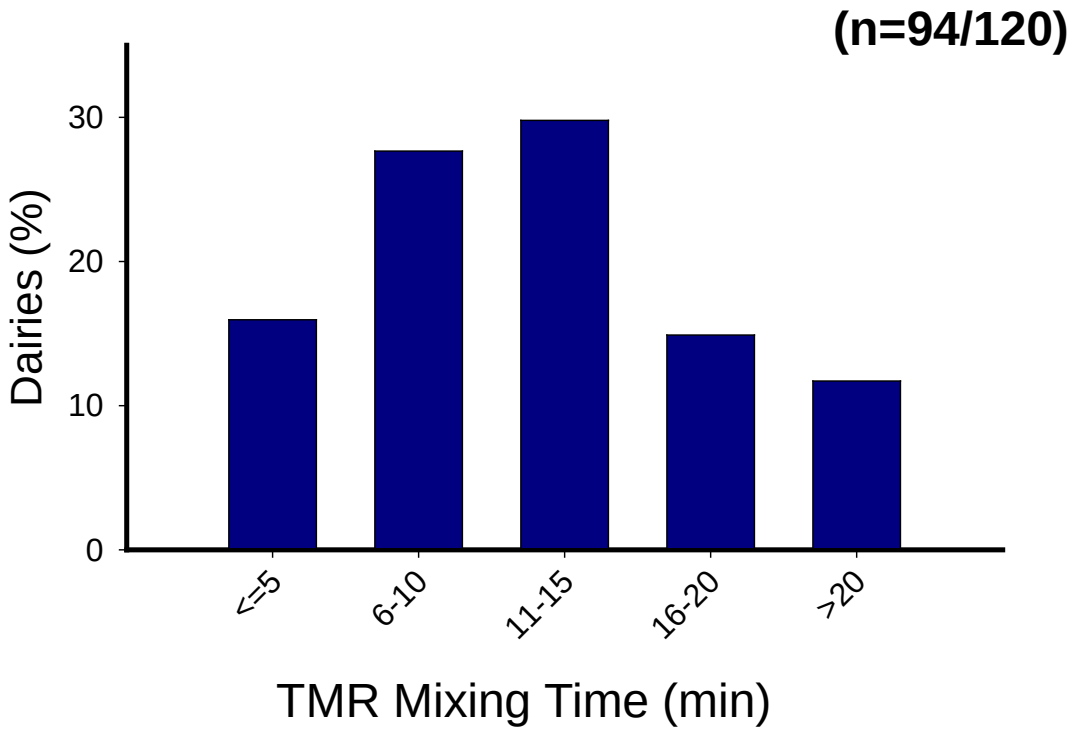


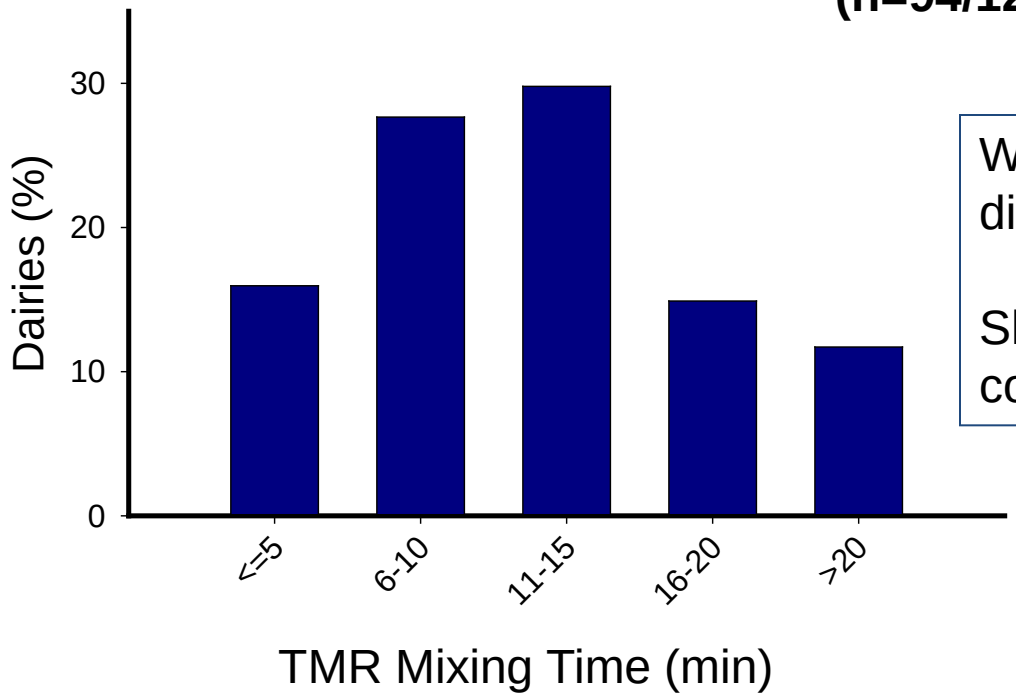
How long is the TMR mixing time (addition of first ingredient to the end of mixing before feed delivery)?



The distribution of the targeted TMR mixing time varies widely (range: 3-35 min).

How long is the TMR mixing time (addition of first ingredient to the end of mixing before feed delivery)?

(n=94/120)

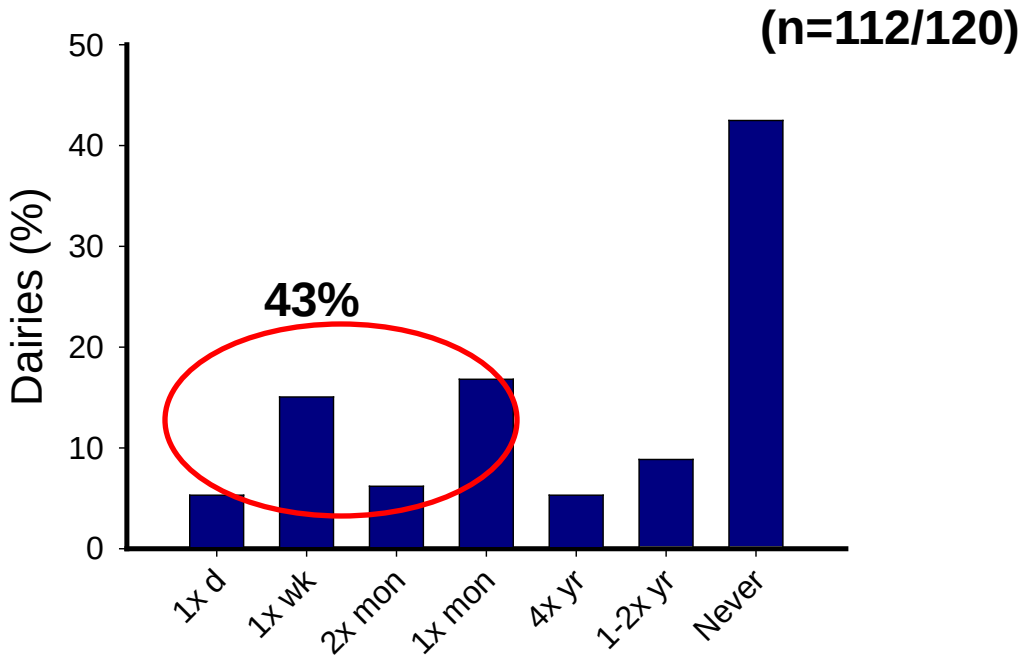


What explains this distribution?

Should we be concerned about it?

The distribution of the targeted TMR mixing time varies widely (range: 3-35 min).

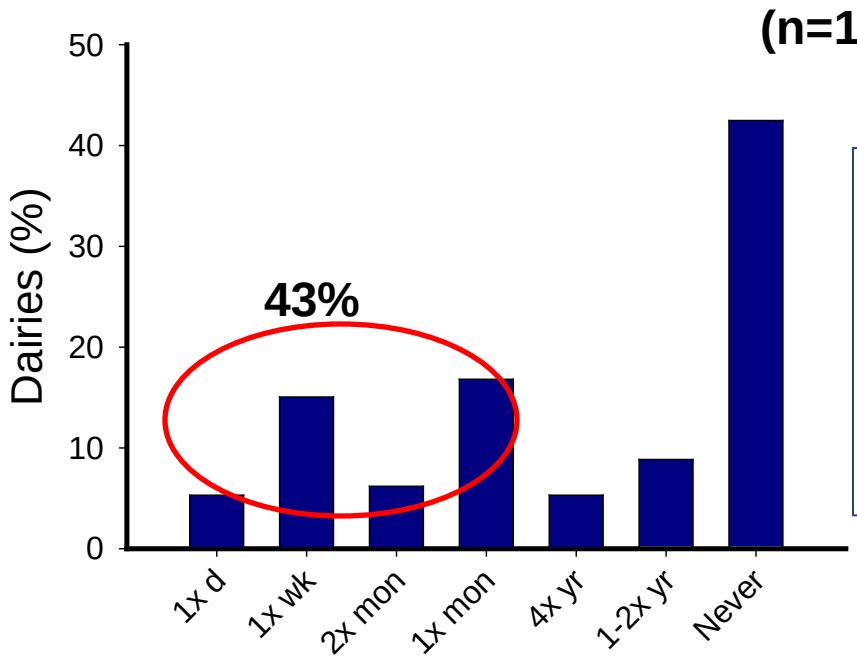
Do you evaluate particle length of TMR using a Penn State Separator?



Frequency of particle size separator use

Only forty-three percent of producers evaluate TMR particle length at least once a month.

Do you evaluate particle length of TMR using a Penn State Separator?



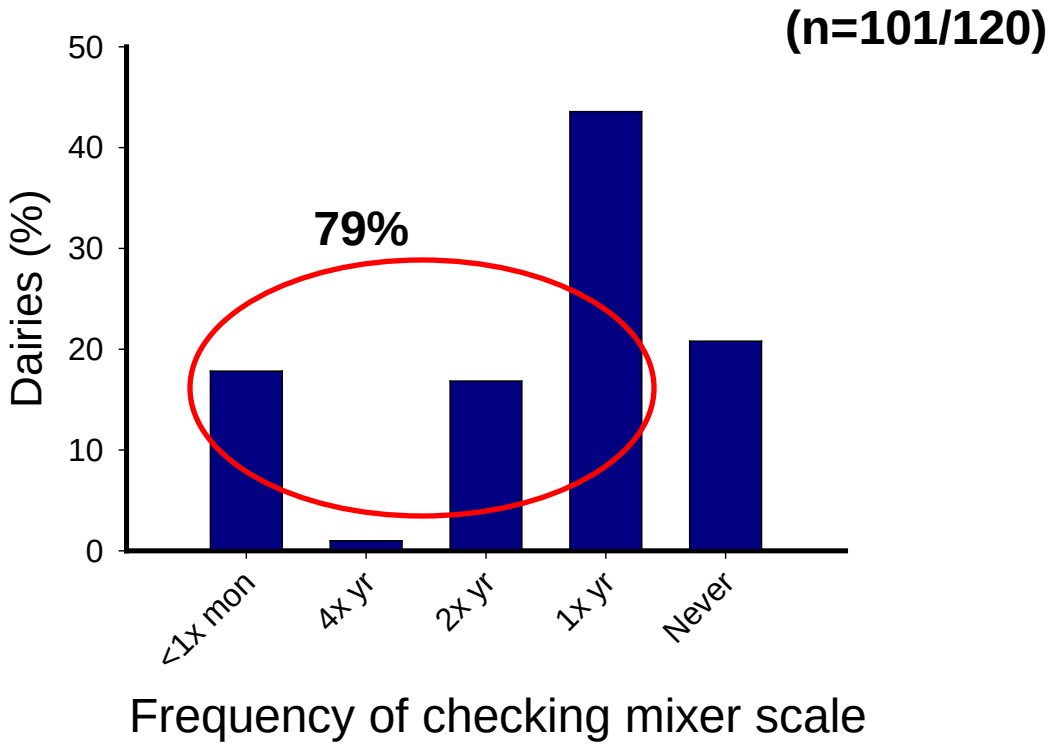
Frequency of particle size separator use

How often is it necessary to monitor particle length?

Is once a month enough?

Only forty-three percent of producers evaluate TMR particle length at least once a month.

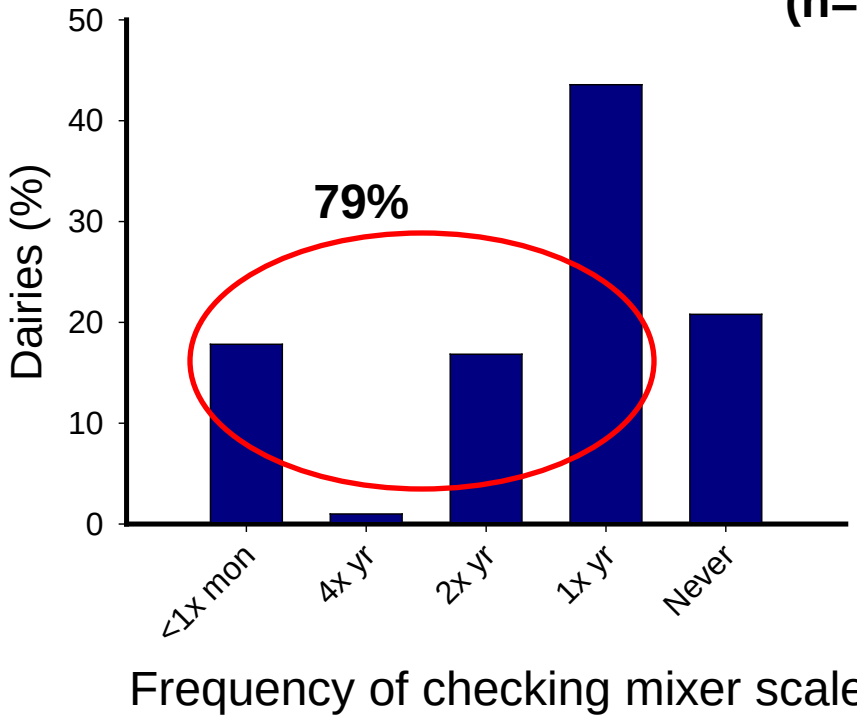
How often do you calibrate the mixer wagon scale?



Seventy-nine percent of producers checked the mixer scale at least once a year. But, only 19 % checked it at least monthly. The mixer wagon was calibrated by an outside service (60%) or an in house employee (40%)

How often do you calibrate the mixer wagon scale?

(n=101/120)

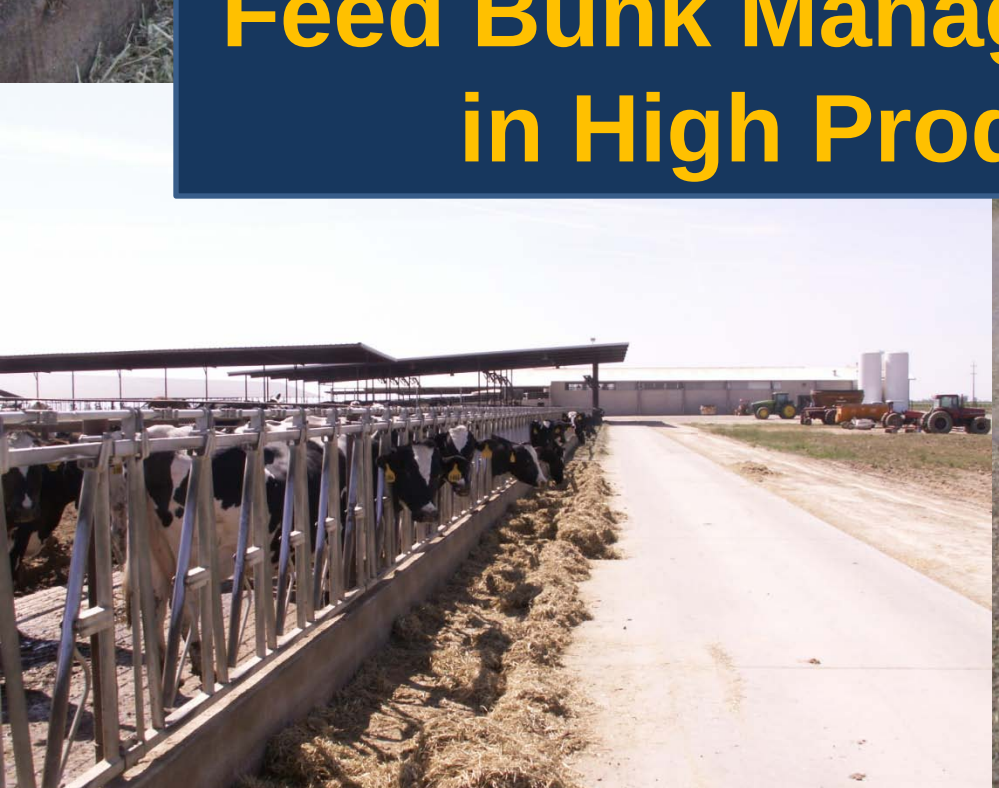


How important is the mixer calibration?

How often should we do it?

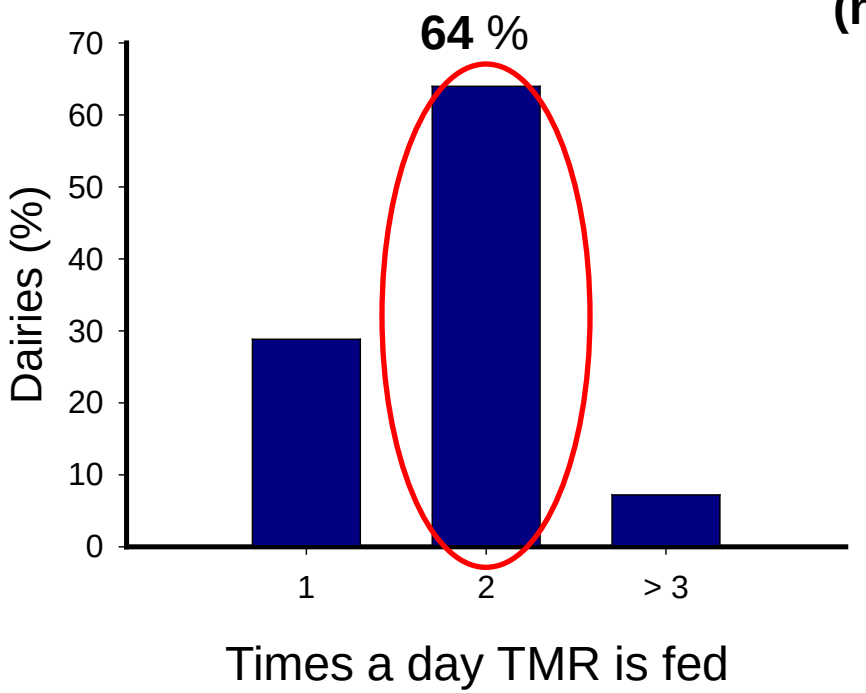
Seventy-nine percent of producers checked the mixer scale at least once a year. But, only 19 % checked it at least monthly. The mixer wagon was calibrated by an outside service (60%) or an in house employee (40%)

Feed Bunk Management Practices in High Producing Pens



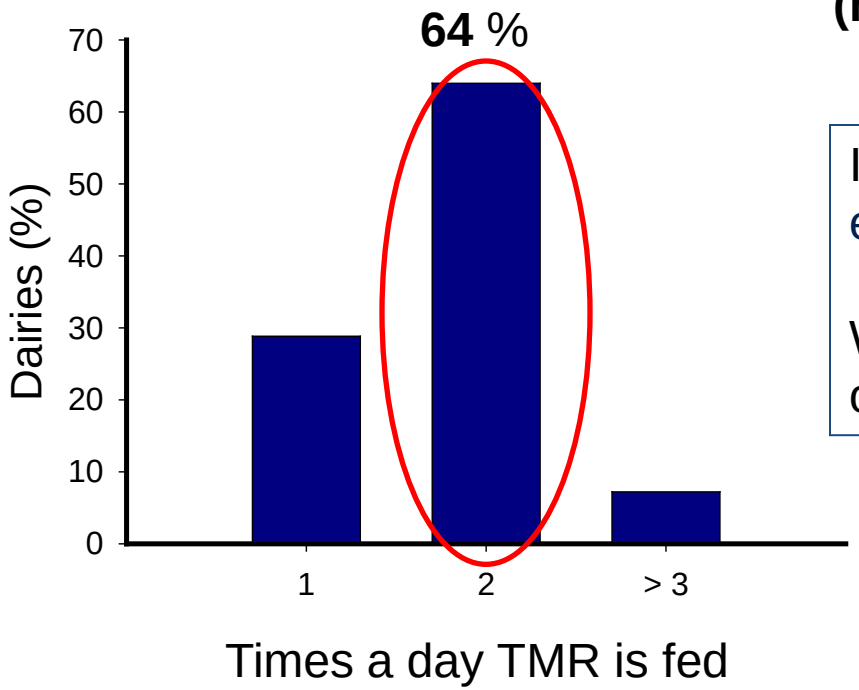
How many times a day is the TMR fed?

(n=111/120)



Most producers, 64%, fed TMR twice a day (range=1-6).

How many times a day is the TMR fed?



(n=111/120)

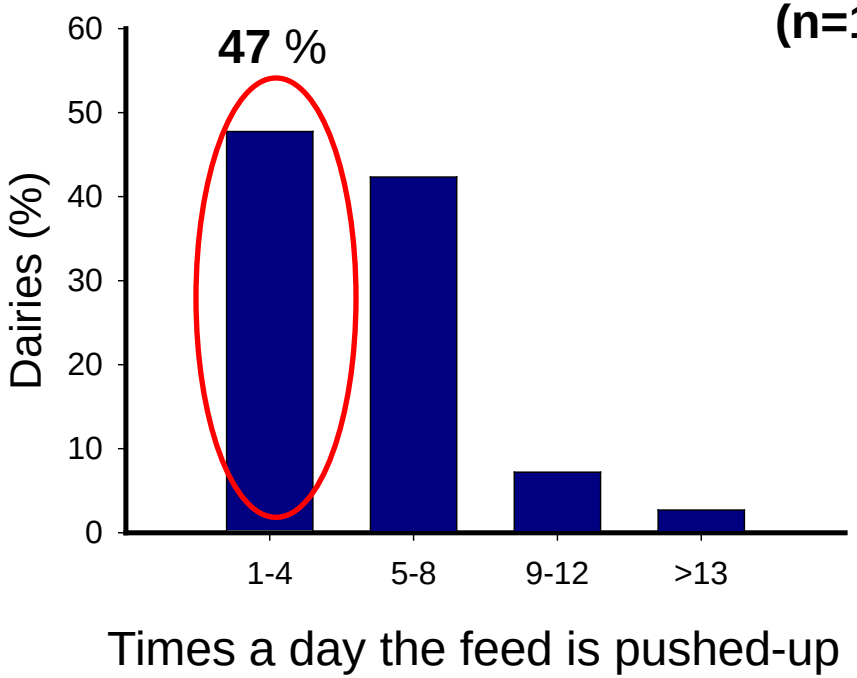
Is 1x/d feeding enough, especially in summer?

What are the advantages of 6x/d feeding?

Most producers, 64%, fed TMR twice a day (range=1-6).

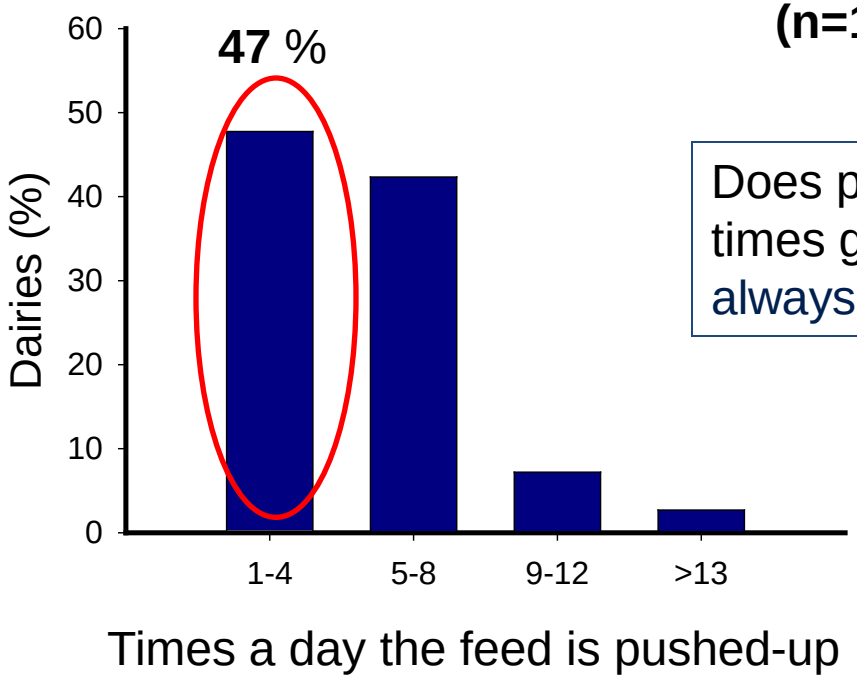
How many times a day is the feed pushed-up?

(n=111/120)



Half of the producers pushed-up the fed 1 to 4 times a day. Only 10% of the dairies pushed the feed 9 or more times (range:1-20).

How many times a day is the feed pushed-up?



(n=111/120)

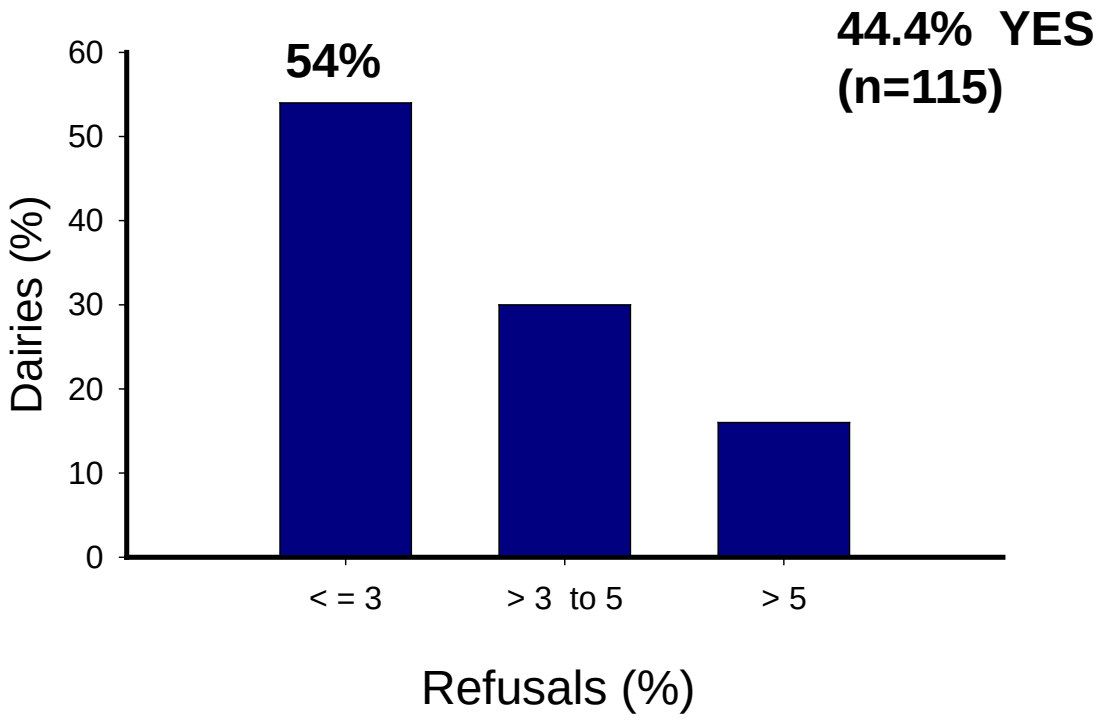
Does pushing the feed 1-4 times guarantee that cows always have feed available?

Half of the producers pushed-up the fed 1 to 4 times a day. Only 10% of the dairies pushed the feed 9 or more times (range:1-20).

Do you feed for refusals?

44.4% YES
(n=115)

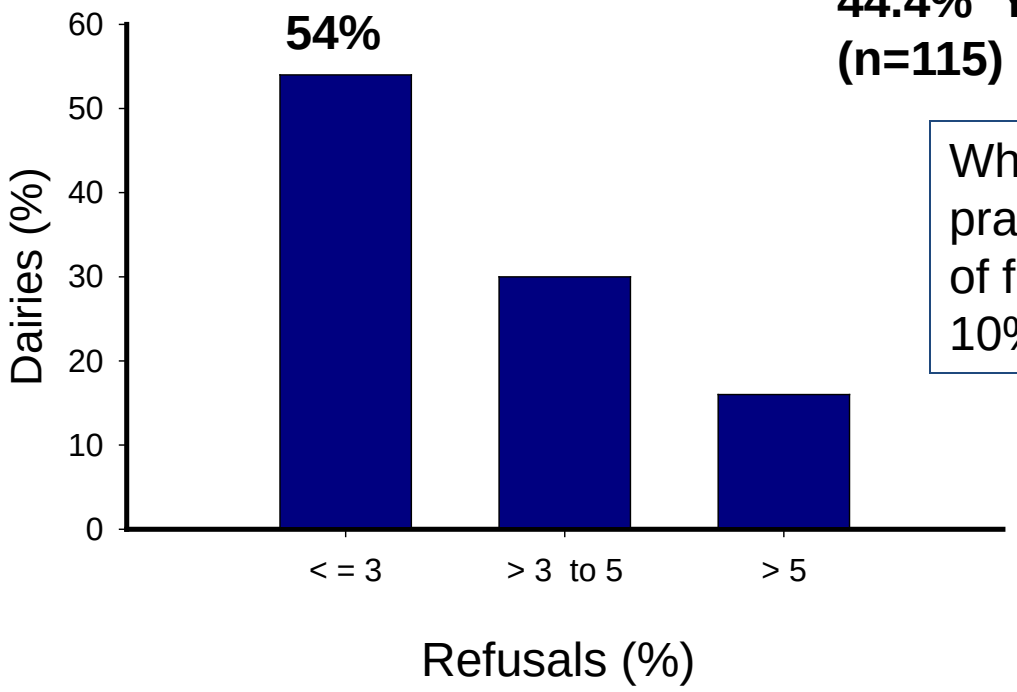
Do you feed for refusals? What percentage?



Fifty-four percent of producers feeding for refusals are targeting 3% or less (range: 1- 10%)

Do you feed for refusals? What percentage?

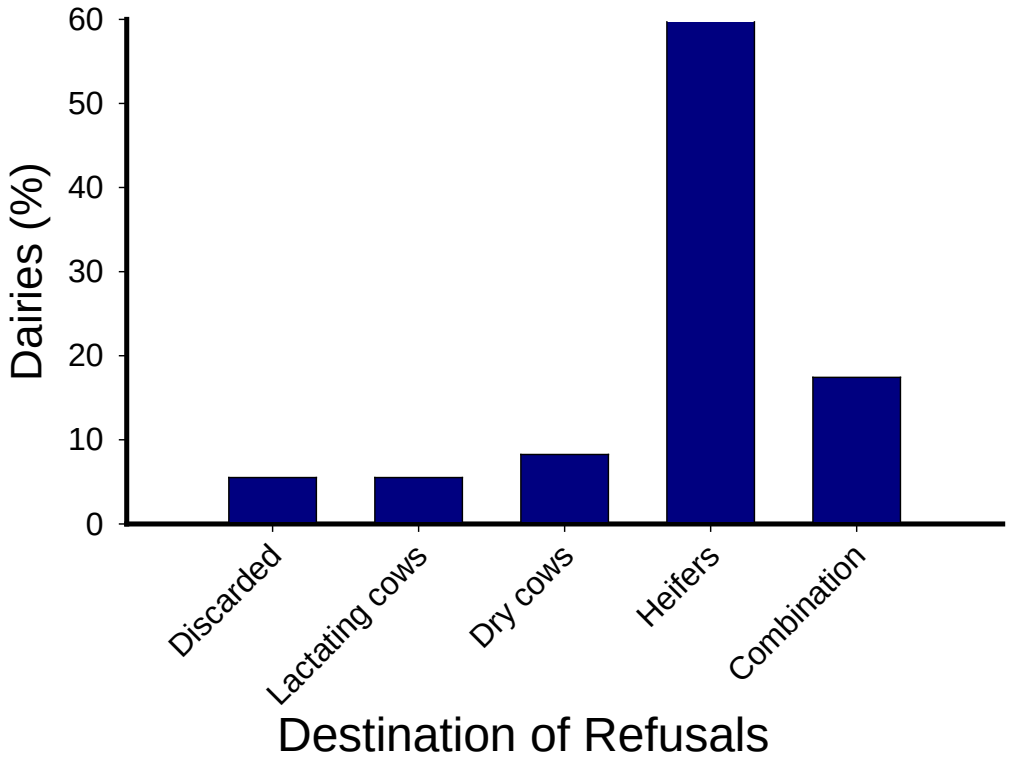
44.4% YES (n=115)



What are the practical implications of feeding for 1 vs 10% of refusals?

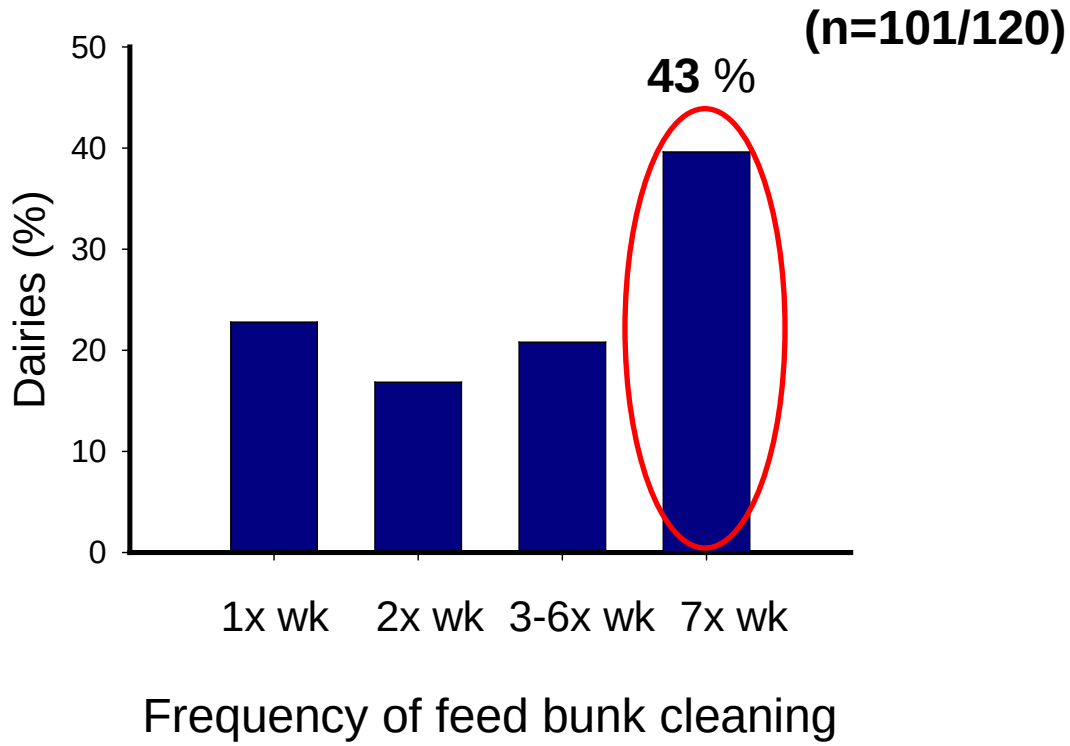
Fifty-four percent of producers feeding for refusals are targeting 3% or less (range: 1- 10%)

What do you do with the refusals?



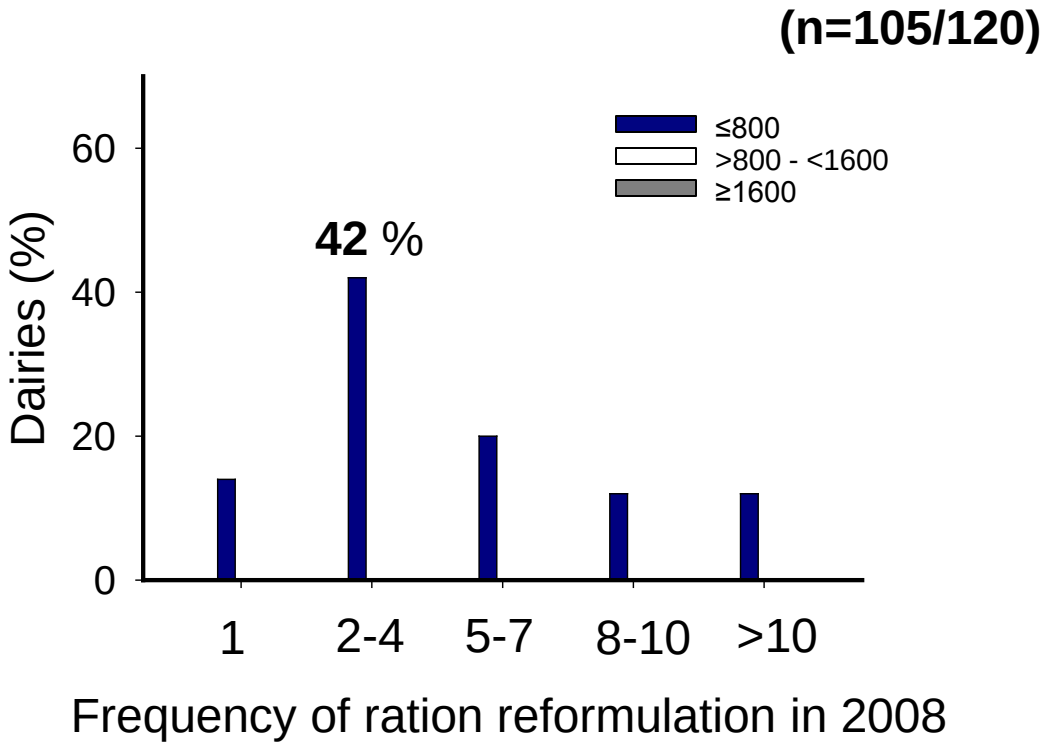
Refusals are commonly feed to heifers.

How many times a week are feed bunks cleaned?



Forty percent of the dairies clean feed bunks daily. However, 23% of dairies clean feed bunks only once a week.

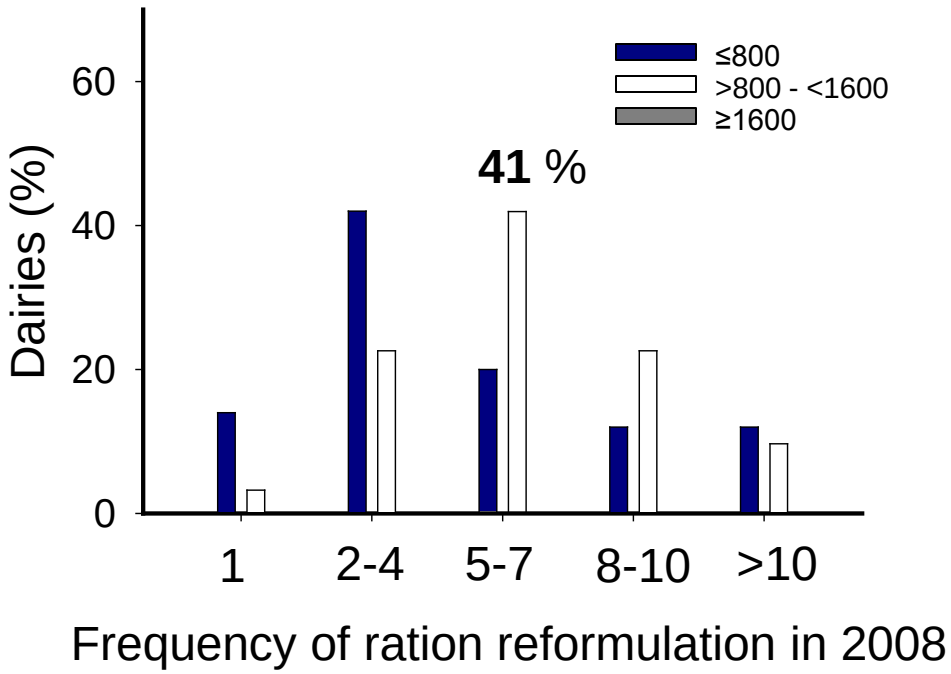
How often was the ration for high producing cows reformulated in 2008?



Forty-two percent of small herds reported that rations were reformulated between 2 to 4 times a year.

How often was the ration for high producing cows reformulated in 2008?

(n=105/120)

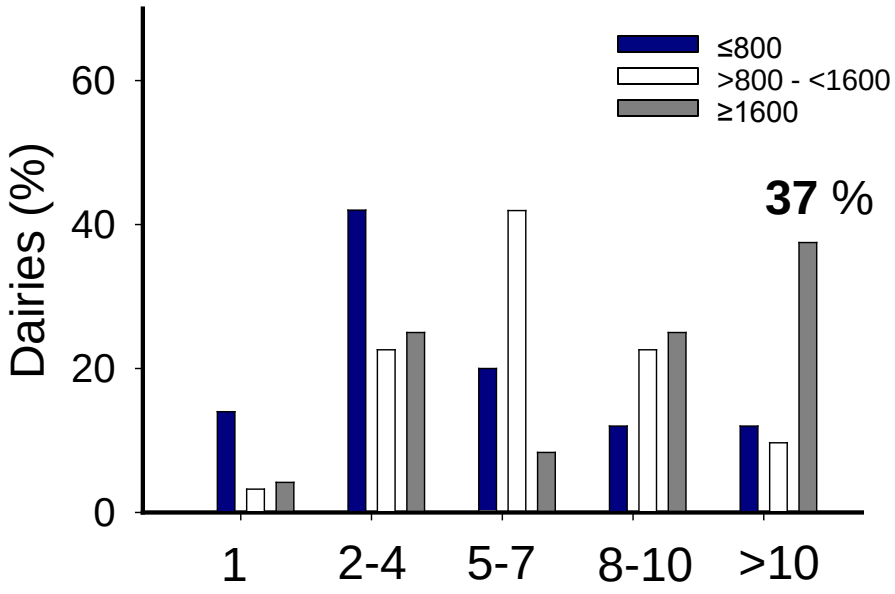


Frequency of ration reformulation in 2008

Forty-one percent of medium size herds reported that rations were reformulated between 5 to 7 times a during 2008.

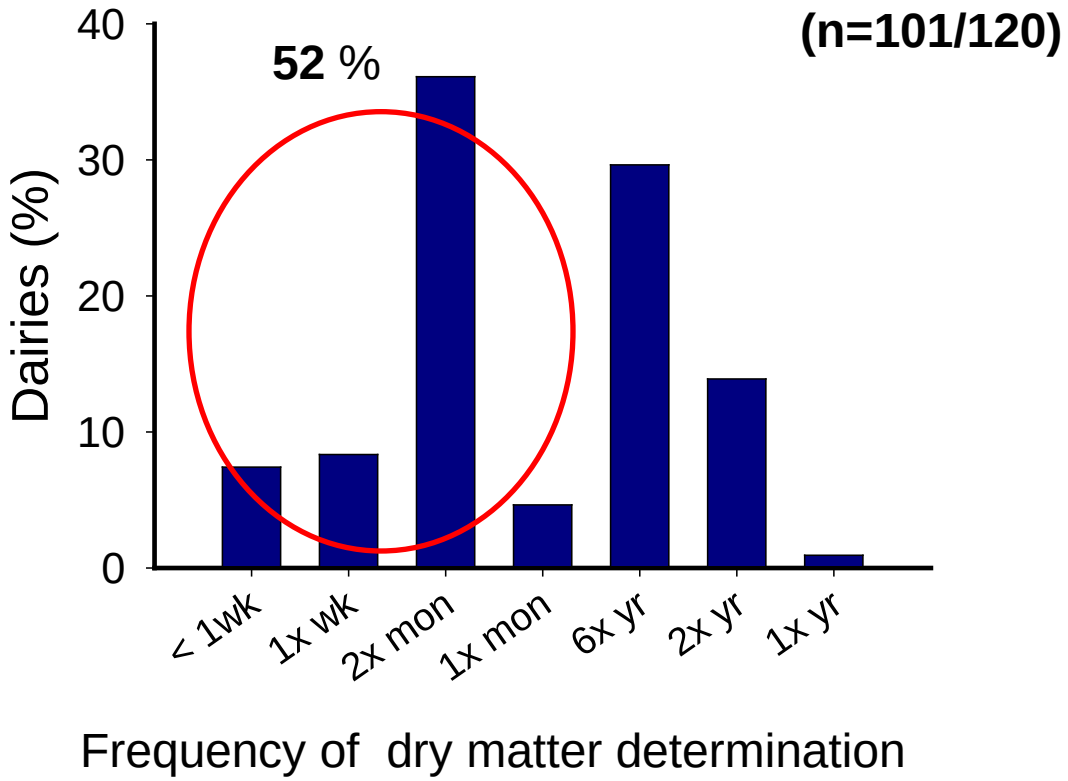
How often was the ration for high producing cows reformulated in 2008?

(n=105/120)



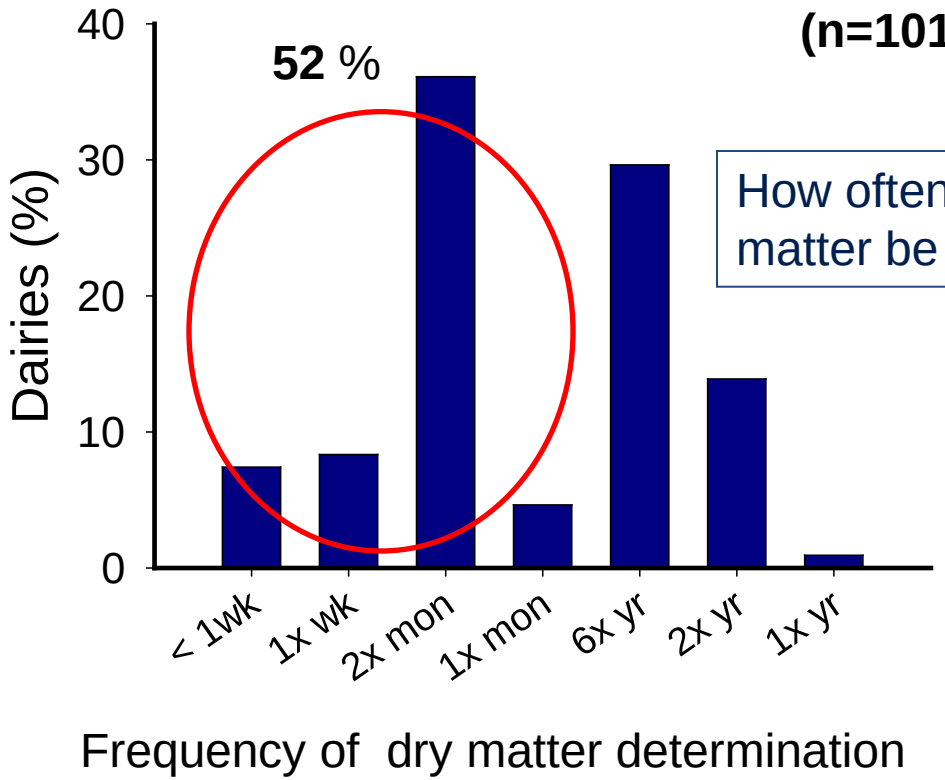
Thirty-seven percent of large dairies reported that rations were reformulated more than 10 times during 2008 (range: 1-24).

How often do you evaluate corn silage dry matter?



Corn silage dry matter was evaluated at least once a month in 52.3% of dairies. Only 8.3% of dairies determined DM weekly, or more often. Most dairies delegated DM determination to an outside nutrition consultant (86.6%).

How often do you evaluate corn silage dry matter?

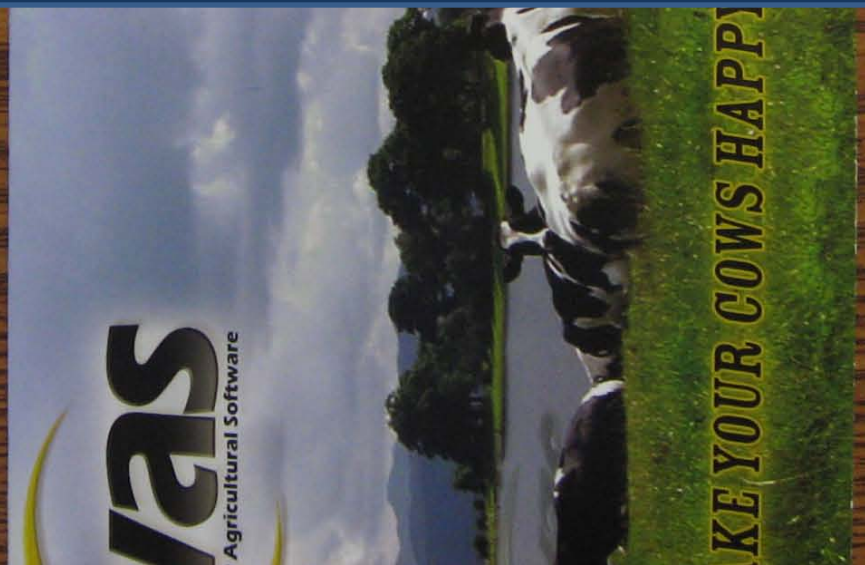


How often should forage dry matter be determined?

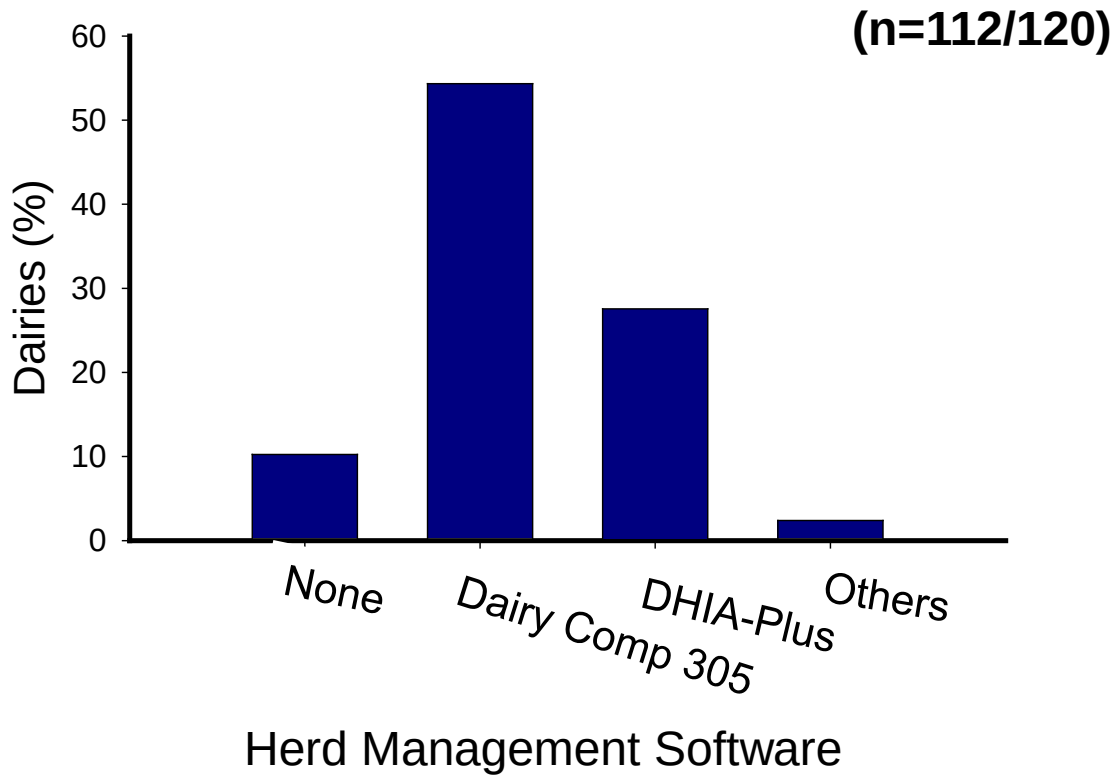
Corn silage dry matter was evaluated at least once a month in 52.3% of dairies. Only 8.3% of dairies determined DM weekly, or more often. Most dairies delegated DM determination to an outside nutrition consultant (86.6%).

Software and Monitoring Tools

Dairy COMP 305

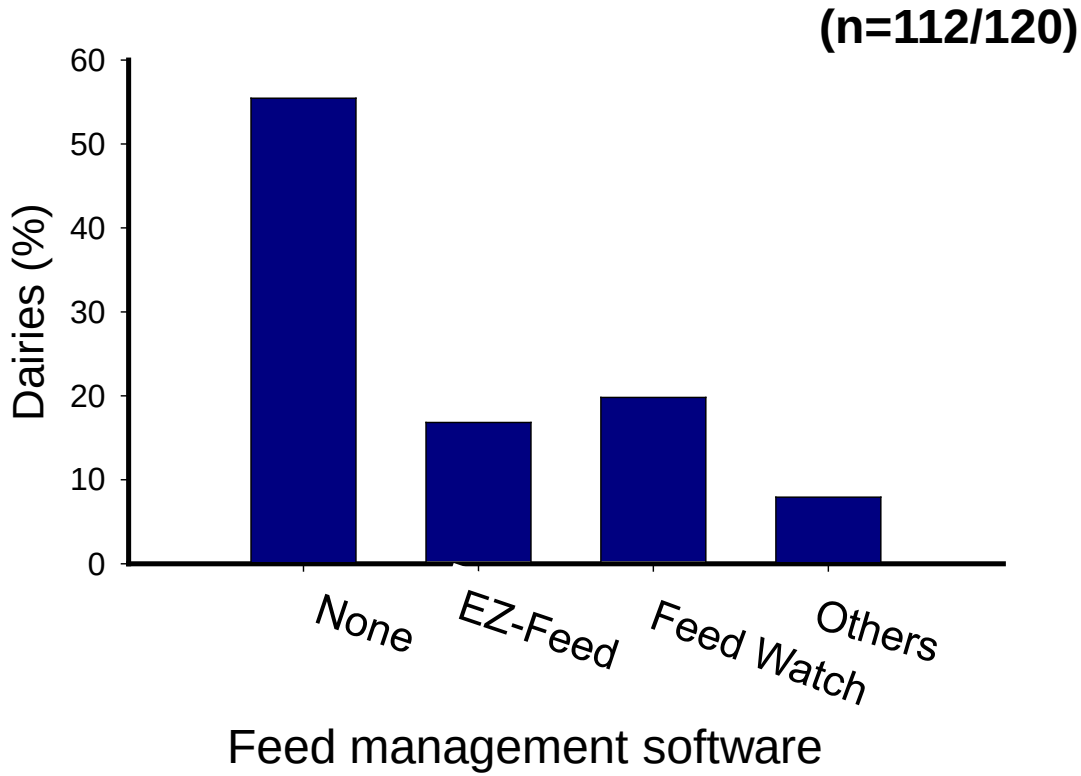


Do you have herd management software?



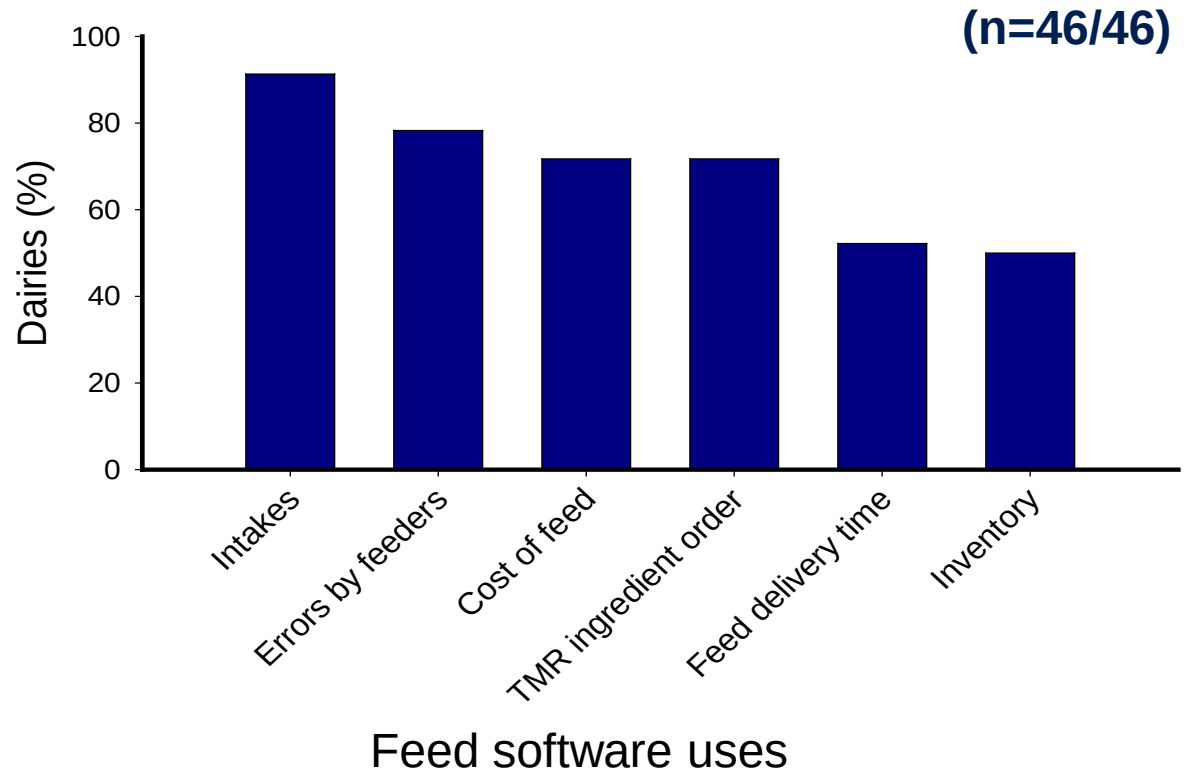
Dairy Comp 305 and DHI-Plus are the most commonly used herd management software.

Do you have feed management software?



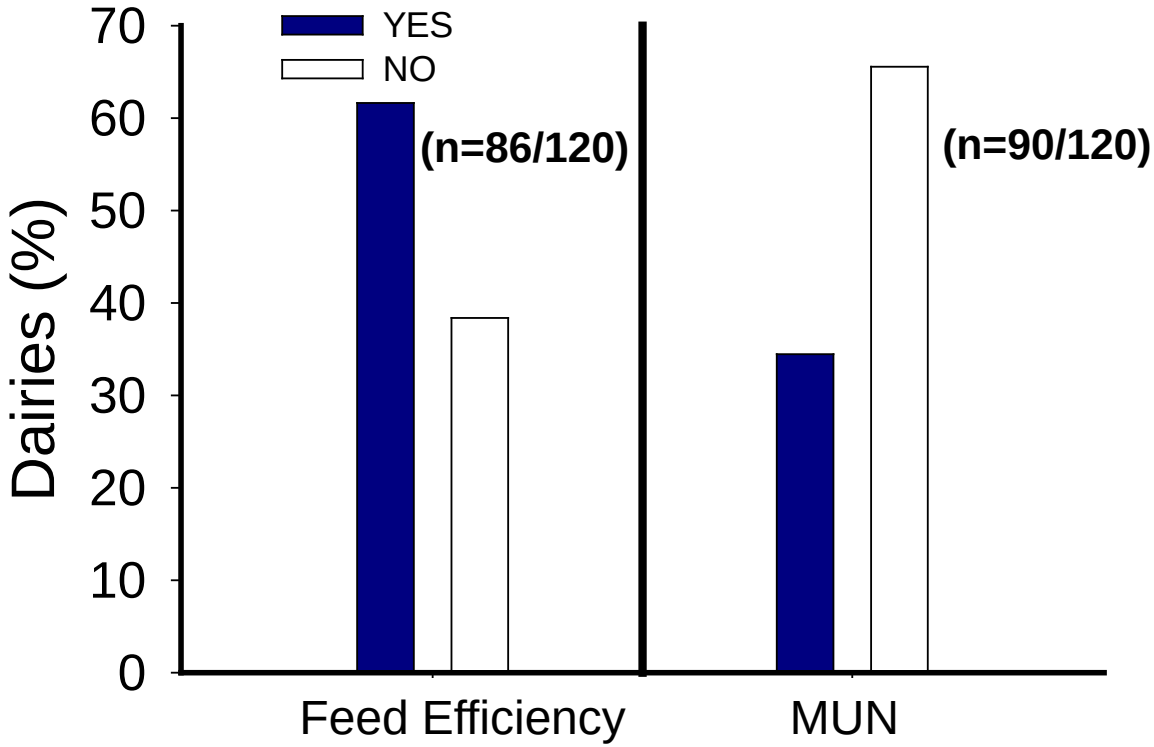
Forty four percent of dairies utilize feed management software. EZ-feed and Feed Watch are the most popular software programs.

What do you monitor with your feed management software program?



Feed management software programs are commonly used to monitor intakes (91%) and less used to check inventory (50%).

Do you monitor feed efficiency and milk urea nitrogen?



Sixty-two percent of the dairies monitor feed efficiency. Thirty-four percent of the dairies monitor milk urea nitrogen.

Results Interpretation

- Only 17% of the dairies returned the survey. It is unknown if the results from this survey represent Central Valley dairies (selection bias).

- Dairy owner and manager responses are subjective and their responses may not represent actual feeding management practices at the dairy (information bias).

- Results from this survey suggest that feeding management practices vary greatly across dairies. And, we still need to know ….

We Still Need to Know …

- If producers are doing what they are reporting.
- If feeding management practices vary across dairies in response to individual needs.
- If current feeding management practices are leading to desirable outcomes (particle length of the ration, feed availability in the feed bunk, weight accuracy of ingredients, etc).
- If the ration fed differs from the ration formulated and how feeding management practices impact that (calibration of the wagon scale, forages dry matter, feeders errors, etc).
- If undesirable outcomes and errors impact health and production.
- What bottlenecks that prevent the implementation of “best” feeding management practices can be overcome (managerial, resources, educational, etc).

Acknowledgements

California Dairy Producers

Tulare DHIA

Dr Steve Stewart

Manuel Soares

Tulare County

University of California Cooperative Extension

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Dairy

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THANKS