Strategies To Reduce Feed Costs On The Dairy

Dr. Mike Hutjens
Dairy Extension Specialist
University of Illinois at Urbana-Champaign

Today's Changing Economics

- Milk fat is worth $2.60/lb. (Aug, 2018)
- Milk protein is worth $1.62/lb. (Aug, 2018)

- Close up heifers < $1200+; WI costs to raise a heifer is $2000
- Cull cows at 40 to 62 cents a pound
- Bull calves worth $50, heifer calves are lower

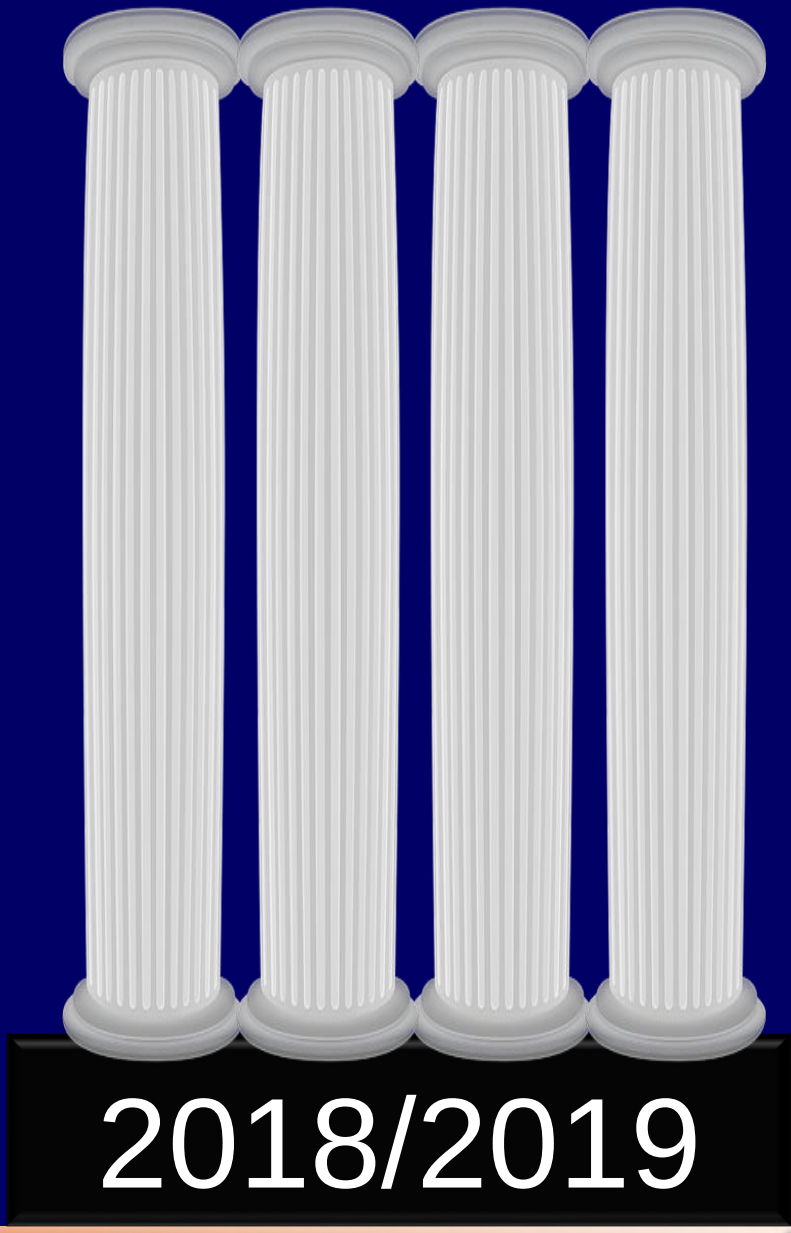
- Illinois producers are under a milk quota, 8.9% of dairy farms sold in the last 12 months

2018 Feed Situation

- Low quality hay / haylage with a $70 spread between high vs. low quality
- Each point of RFQ is $1.09 ($185/170 RFQ)
- Soybean meal, shelled corn, and fuzzy cottonseed are price competitive
- By-products can be agood buy

Today's Program

- Build on forage quality
- Evaluate your milk check
- Fine tune heifer and feed additives
- Feeding economics

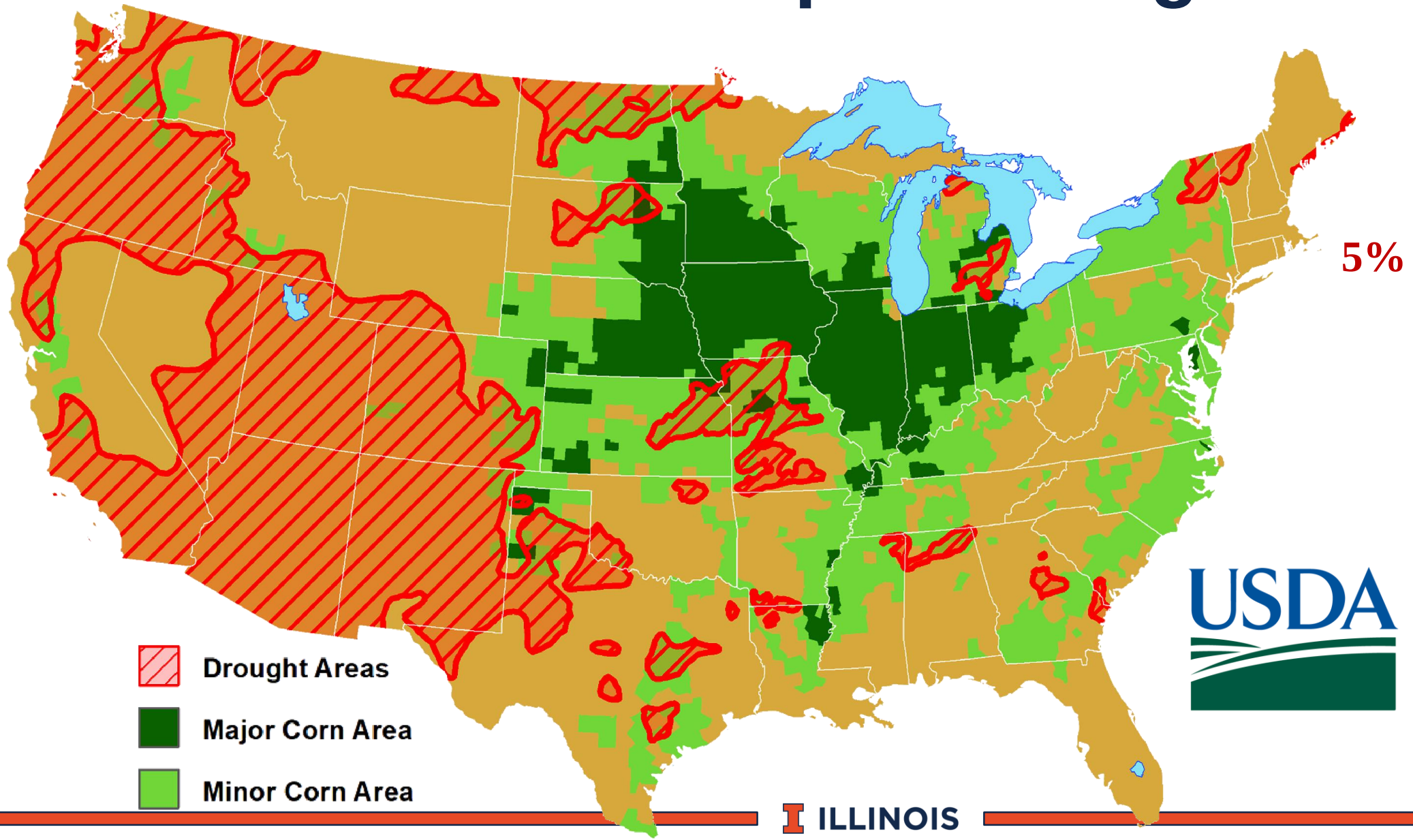


Build on Forage Quality

A Challenge Forage Year-2018

- Late snow storm in April with large accumulation
- Drought in part of central U.S.
- Dry August reduced corn yield and 3rd cutting
- Heavy local rains in
  - Flooded fields
  - Corn lodging

U.S. Corn Areas Experiencing Drought



USDA United States Department of Agriculture

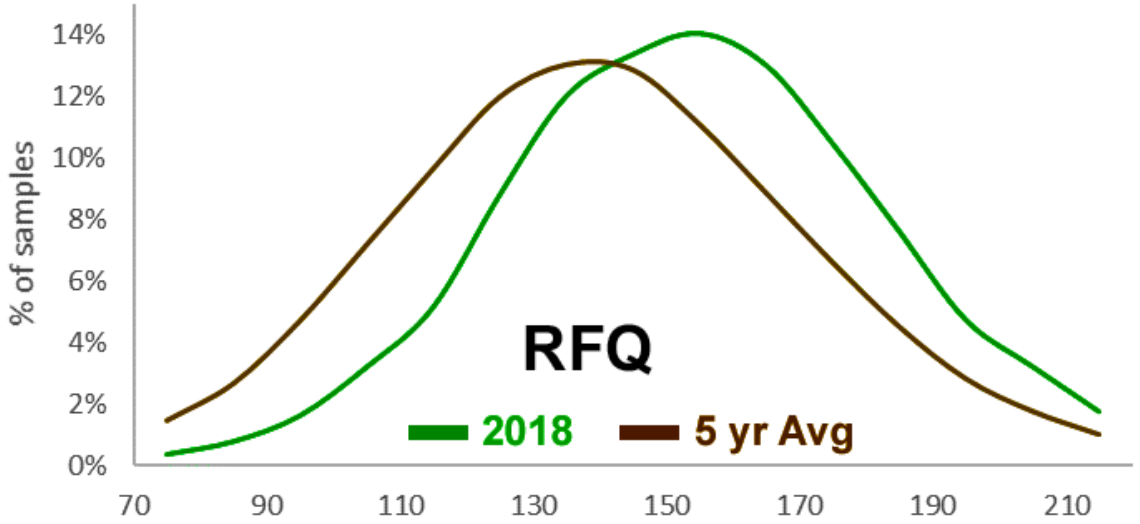
Legume Haylage

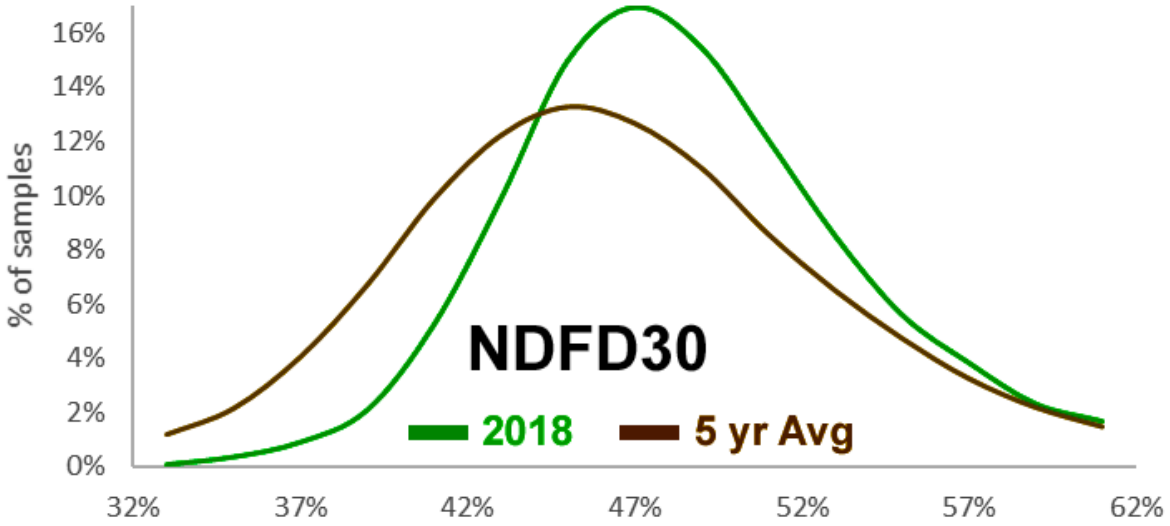
	Moisture	CP	ADF	aNDF	aNDFom	Lignin	uNDFom240	NDFD30
2018 Crop	56.4%	20.6%	33.8%	39.0%	37.0%	7.71%	17.2%	47.3%
5yr Avg.	54.8%	20.9%	34.3%	40.1%	37.5%	7.94%	17.6%	45.1%

	WSC (sugar)	EE (fat)	Ash	RFV	RFQ	Count
2018 Crop	4.28%	3.46%	11.3%	151.9	157.3	2,920
5yr Avg.	4.13%	3.51%	11.4%	146.9	145.6	41,669

Legume Haylage

DAIRYLAND Laboratories, Inc.





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CP	20.6%	20.9%
ADF	33.8%	34.3%
aNDF	39.0%	40.1%
aNDFom	37.0%	37.5%
Lignin	7.71%	7.94%
uNDFom240	17.2%	17.6%
NDFD30	**47.3%**	**45.1%**
WSC (sugar)	4.28%	4.13%
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RFV	**151.9**	**146.9**
RFQ	157.3	145.6
Count	2,920	41,669

Legume Haylage

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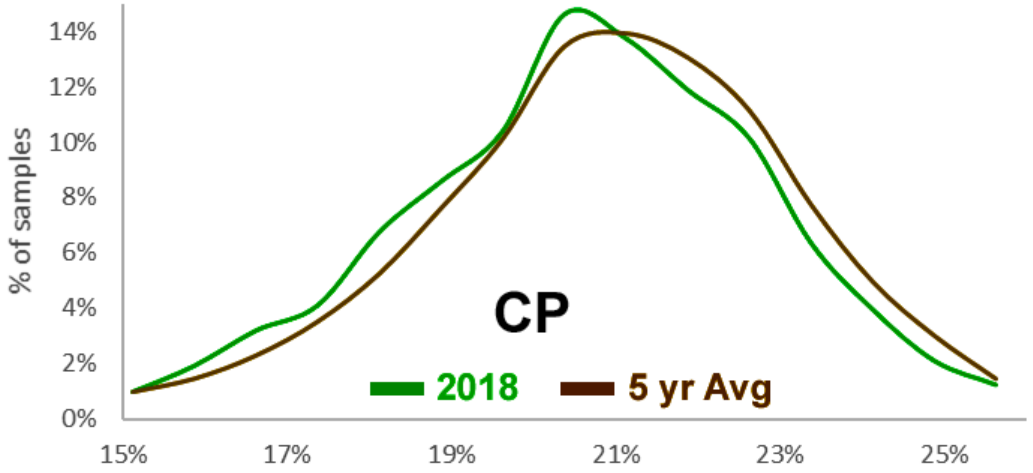
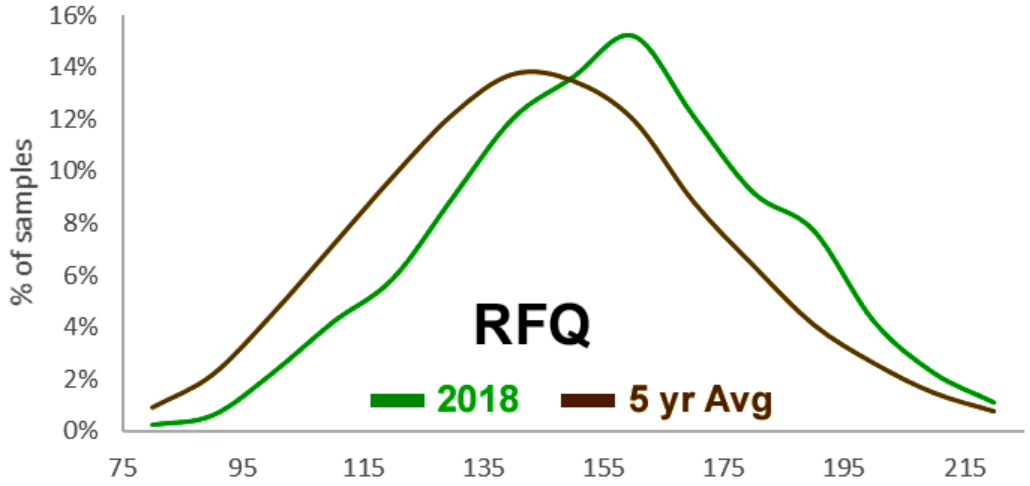
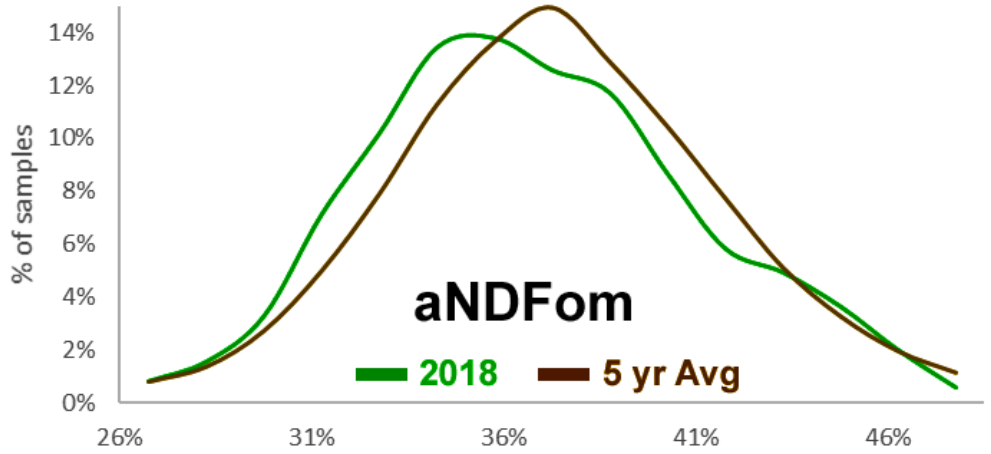
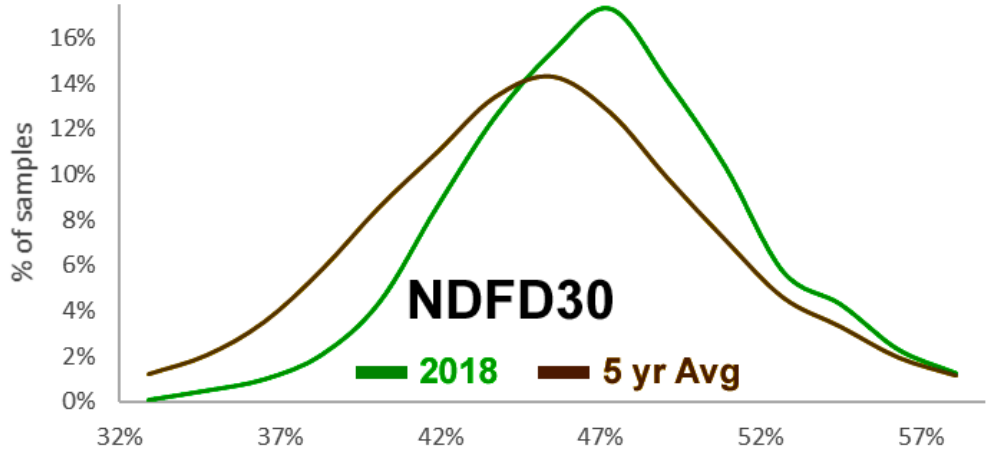
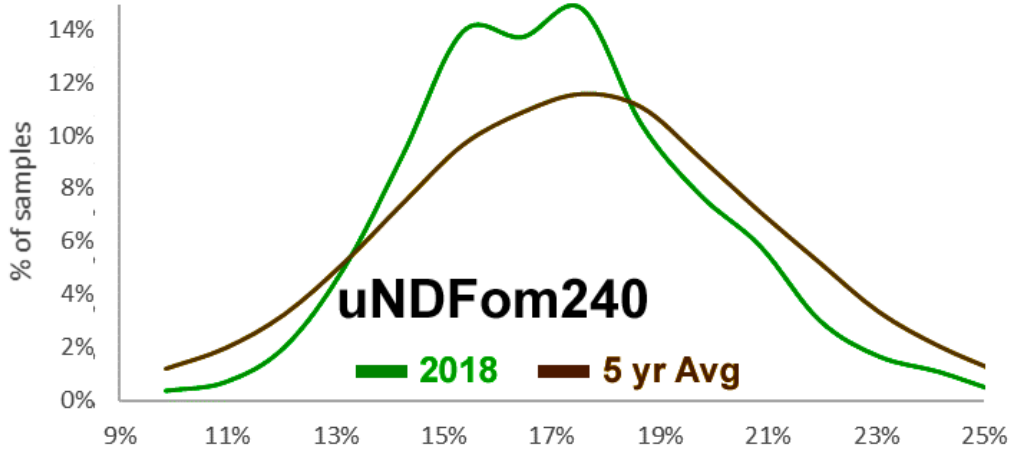










ILLINOIS

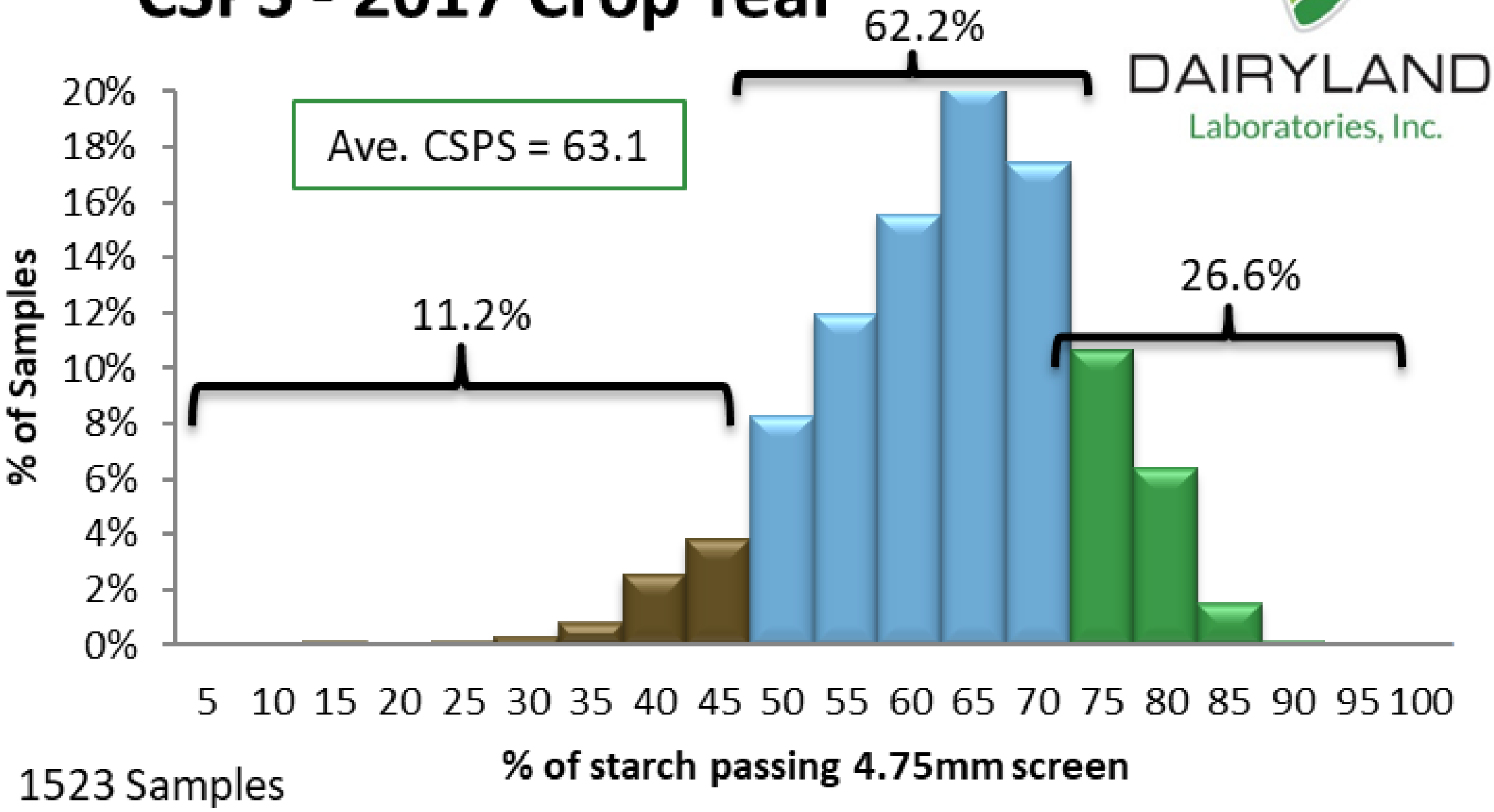
Corn Silage 2018

	aNDF	CP	Starch
2016	38.31	7.85	33.16
East	37.13	7.82	34.31
Midwest	36.79	7.96	34.94
West	41.01	7.78	30.24
2017	38.86	7.65	33.06
East	38.37	7.25	34.70
Midwest	37.27	7.92	34.00
West	40.93	7.79	30.49
2018	39.33	7.60	33.96
East	38.31	7.14	35.87
Midwest	38.04	7.99	35.40
West	41.63	7.66	30.60

ROCK RIVER LABORATORY, INC.
AGRICULTURAL ANALYSIS

ILLINOIS

CSPS - 2017 Crop Year



1523 Samples

Dairy Fecal Starch %, Sep. '17-Aug. '18

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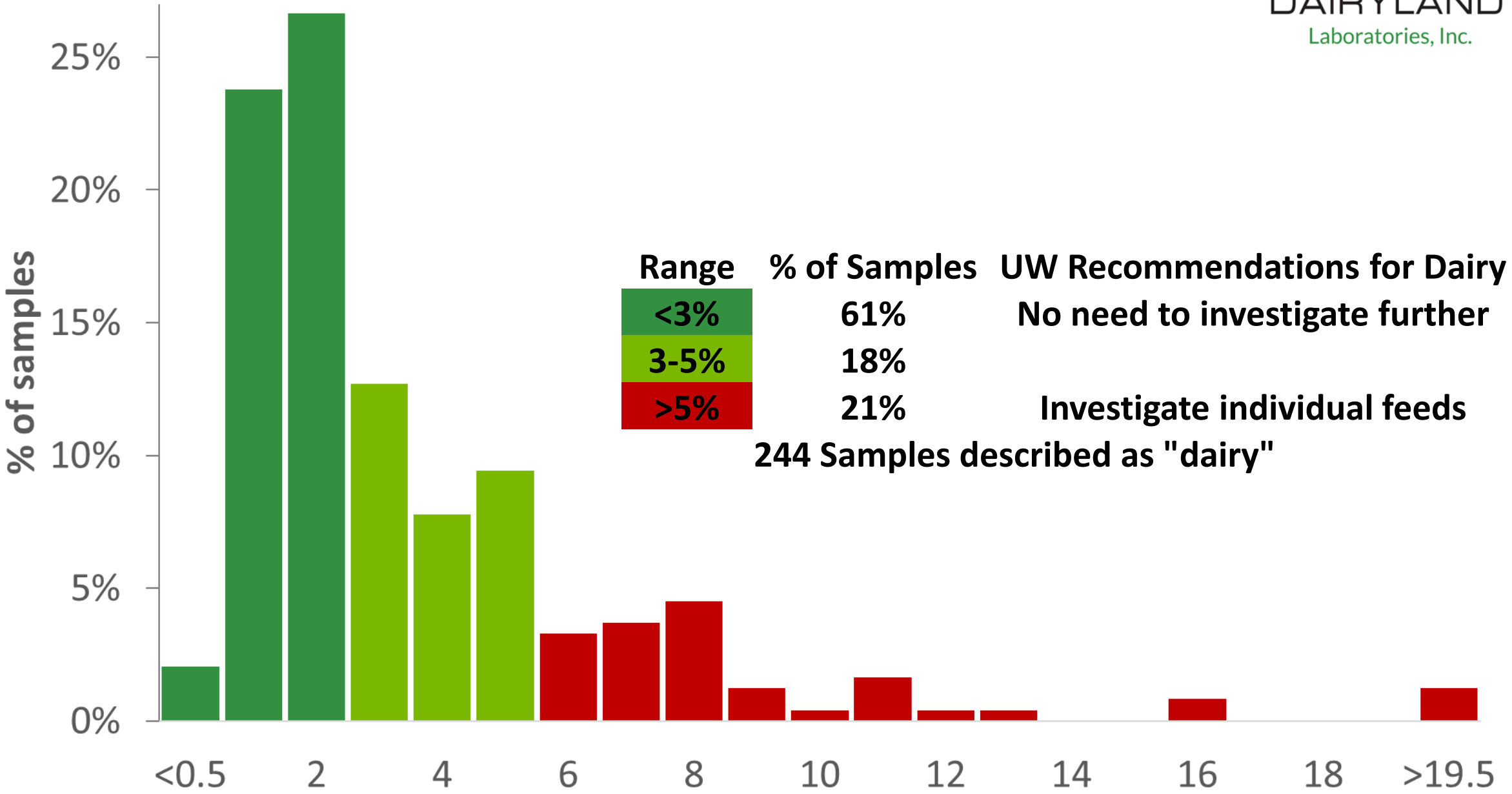


Range	% of Samples	UW Recommendations for Dairy
<3%	61%	No need to investigate further
3-5%	18%	
>5%	21%	Investigate individual feeds

244 Samples described as "dairy"

Rumen Fill Dynamics
(from Dr. Grant)

Forage NDF digestibility and cow performance

For every 1 percentage-unit increase in NDF digestibility

- +0.40 lb/d DMI (0.18 Kg/d)
- +0.55 lb/d 4%FCM (0.25 kg/d)

(Oba and Allen, 1999)

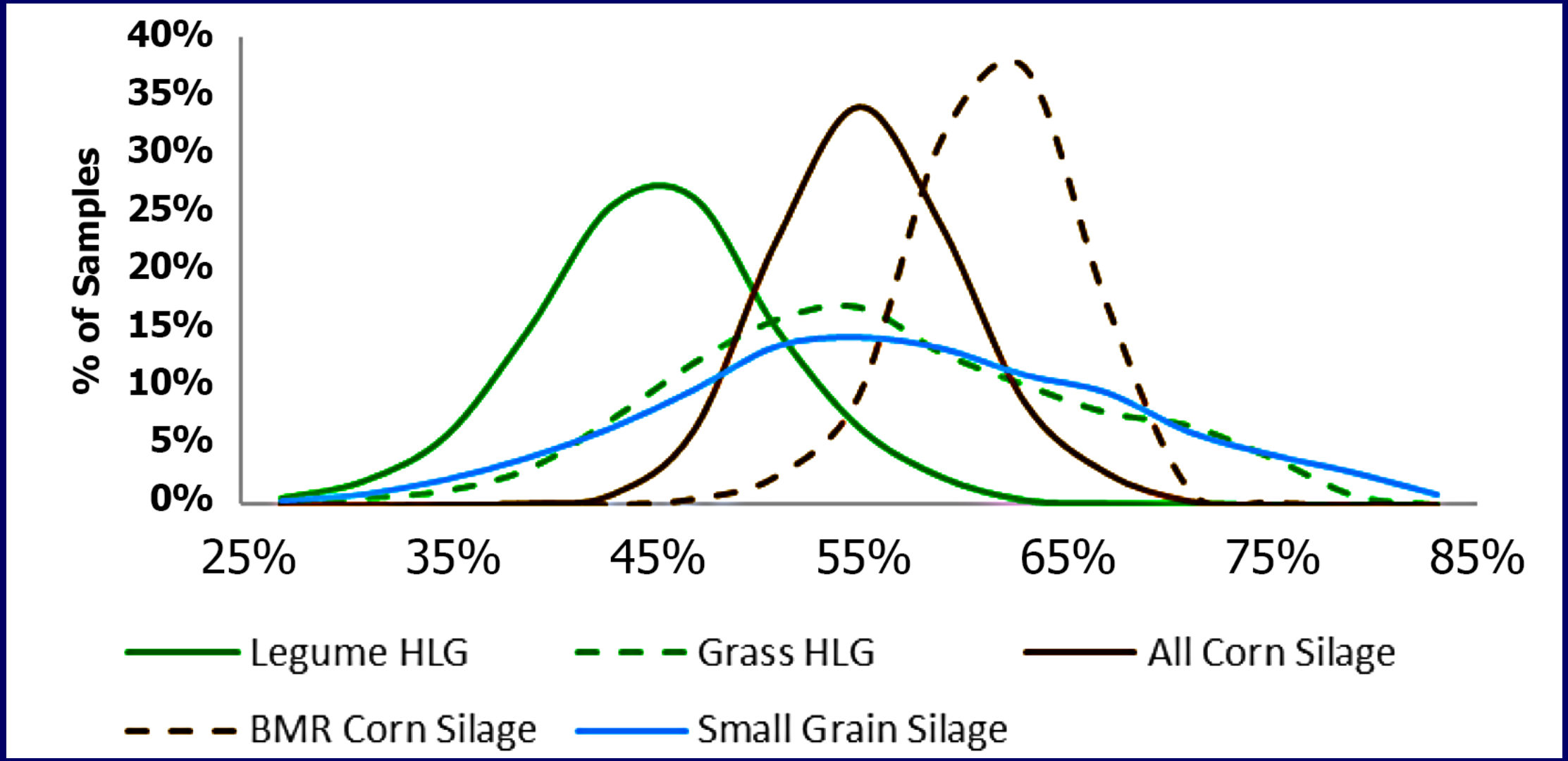
>40% corn silage in diet

- +0.26 lb/d DMI (0.12 Kg/d)
- +0.31 lb/d 3.5%FCM (0.14 Kg/d)

(Jung et al., 2010)

NDFD30

140,964 Samples



Using uNDF in Ration Evaluation

- Determines rumen fill from forage sources and/or minimal rumen fiber function (straw effect)
- Suggestion is 0.35 to 0.40 percent of body weight
- Guideline is 5.0 lb (2.3 kg) of uNDF-30 (Holstein) and 4.0 lb (1.8 kg) uNDF-30 (Jersey)
- Questions on by-product feeds such as fuzzy cottonseed, soy hulls, citrus pulp, etc.

Marginal Dry Matter Intake

- The “last” pound of dry matter consumed can support two pounds more milk (no nutrients needed for maintenance)
- Economics of marginal dry matter:
  - Cost of one pound dry matter is 10 cents
  - Value of 2 lb of milk is 32 cents ($16/cwt)
  - Profit margin is **22 cents** per cow per day

Dry Matter Intake (NRC 1989)

DMI in Pounds					DMI in Kilograms				
FCM in lbs	Body Weight in lbs				FCM in Kg	Body Weight in Kg			
	880	1,100	1,320	1,540		400	500	600	700
44	32	35	38	40	20	15	16	17	18
66	39	43	46	49	30	18	20	21	22
88	48	51	53	55	40	22	23	24	25
110		59	62	63	50		27	28	29
132			71	74	60			32	34

Building Your Milk Check

Milk Fat and Milk Protein Relationship

(Hoard's Dairyman—August 2018)

	Fat %	Protein %	Protein vs Fat	Fat vs Protein
Ayrshire	3.89	3.14	81%	1.23
Brown Swiss	4.05	3.32	82%	1.22
Guernsey	4.56	3.35	73%	1.36
Holstein	3.81	3.06	80%	1.24
Jersey	4.89	3.70	75%	1.32

Pounds of Protein and Fat

Breed	Milk / Day	Fat	Protein	Total
Ayrshire	18,886 / 50	1.97	1.61	3.6
Brown S.	22,509 / 62	2.46	2.04	4.5
Guernsey	16,229 / 45	2.02	1.47	3.5
Jersey	19,278/ 53	2.55	1.92	4.5
Holstein	25,476 / 70	2.61	2.24	**4.9**
	80	**2.98**	**2.42**	**5.4**
	90	**3.36**	**2.72**	**6.1**
	100	**3.73**	**3.02**	**6.8**

Making Economic Decisions— Raising Heifers

Raising Heifers Is Not A Profit Center

- Cost to raise heifers is over $1000 more than the current market prices
- Number of heifers needed: culling rate, death losses of heifers, and calving interval.
- Tools: genomics (find the best ones), sex semen (get heifers out of the best genetics), and beef crossbreeds (premium +$150, calving ease, and healthy of calves)

When Raising Replacement Heifers

- Must feed an accelerated liquid diet
- Textured calf starter at > 18% crude protein
- Heifers must calve at 23 months
- Must measure rate of gain (>1.8 lbs. Holsteins)
- Must have health records on respitory and scour calves (cull candidates)

Making Economic Decisions—Feed Additives

U.S. Feed Additive Use

(2017 Hoard's Market Survey)

	2017	2015
Buffers	41	44
Yeast/yeast culture	30	29
Rumensin	20	29
Niacin	10	15
Probiotics	12	14
Mycotoxin binders	25	25
Anionic products	7	10
Omnigen	7	na
Feed bunk stabilizer	1	3
Don't use	8	11

Additives for Close Up Dry Cows

- Yeast culture/yeast products
- Monensin (Rumensin)
- Silage inoculants
- Organic trace minerals + chromium
- Anionic product
  (if DCAD is > +20 meq/kg or 2 meq/100 gm)

Additives For Fresh Cows

- Rumen buffers
- Yeast culture/yeast products
- Monensin (Rumensin)
- Calcium supplement (bolus/drench)
- Silage inoculants
- Biotin
- Organic trace minerals + chromium
- Rumen protected choline

Knowing Your Dairy Business—Feed Cost

Breakeven Prices

(Sept, 2018, IL, Sesame)

Feed	Current	Breakeven
Shelled corn	$3.36/bu	$4.59/bu
SBM—48%	$306/t	$313/t
Corn silage	$ 40/t	$ 65/t
High alfalfa	$210/t	$168/t
Low alfalfa	$ 148/t	$148/t
Corn stalks	$ 80/t	$ 116/t
Straw	$130/t	$ 159/t

Breakeven Prices

(Sept, 2018, Sesame)

Feed	Current	Breakeven
Distillers grain	$ 145/t	$ 204/t
Corn gluten feed	$ 143/t	$ 172/t
Soy hulls	$ 144/t	$ 118/t
Fuzzy cottonseed	$ 225/t	$ 259/t
Wheat midds	$ 100/t	$ 128/t

Feed Prices Used

Feeds	$/lb*
Corn silage ($36 per ton)	0.056
Alfalfa ($180 per ton)	0.100
Corn grain ($3.40 / bushel)	0.067
Fuzzy cottonseed ($230 / ton)	0.128
Corn gluten feed ($143 / ton)	0.061
Soybean meal ($340 / ton)	0.189
Corn distillers grain ($149 / ton)	0.067

*Prices are 100% dry matter basis

Feed Benchmarks 2018/2019

	lb DM	$/ lb DM	$ / day
Forages	28	.070	1.98
Grain energy	10	.067	0.67
By-product	5.5	.095	0.52
Protein supp	5.5	.128	0.70
Min/vit/additive	1.0	.060	0.60
Ration balancing service			0.10
Total	50		4.57

Feeding Economics 2018/2019

Feed costs per cow per day	$4.57
Feed cost per lb DM	**$0.09**

	Milk Production	
	80 lb	70 lb
Feed cost per cwt	**$ 5.71**	$ 6.53
Income over feed costs ($16)	**$ 10.29**	$ 9.47
Feed efficiency (lb milk/lb DM)	**1.60**	1.40

Take Home Messages

- Profits will continue to be challenged
- Keep the best team on the bus (on the farm)
- Control the controllables (forage quality, milk premiums, heifers, and feed additives)
- Be ready when milk prices improve

Questions?