Adisseo NA VIP Seminar
Nashville, TN

MilkSMART
by Adisseo

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A Bluestar Company

Estimate your Herd's Lifetime Returns with MilkSmart

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2025-11-06

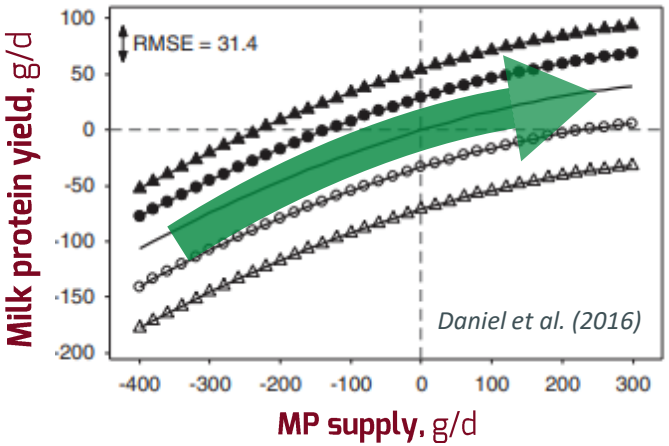
Consistent, Proven, Unarguable: Methionine Boosts Milk Protein

Meta-Analysis 1

Animal (2016), 10:12, pp 1975–1985 © The Animal Consortium 2016
doi:10.1017/S1751731116001245

animal

Milk yield and milk composition responses to change in predicted net energy and metabolizable protein: a meta-analysis



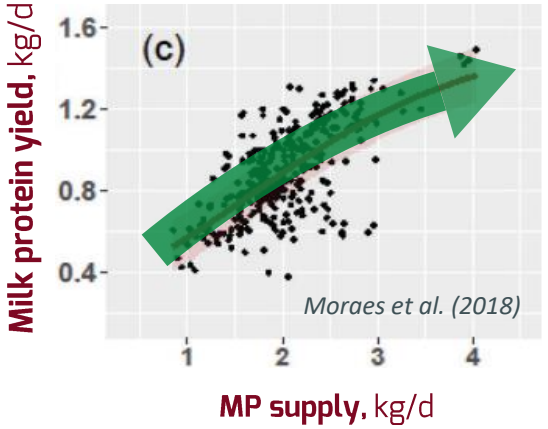
↑ MP

↑ Milk Protein

Meta-Analysis 2

J. Dairy Sci. 101:310–327
https://doi.org/10.3168/jds.2016-12507
© American Dairy Science Association®, 2018.

Predicting milk protein responses and the requirement of metabolizable protein by lactating dairy cows



↑ MP

↑ Milk Protein

Meta-Analysis 3

J. Dairy Sci. 101:340–364
https://doi.org/10.3168/jds.2016-12493
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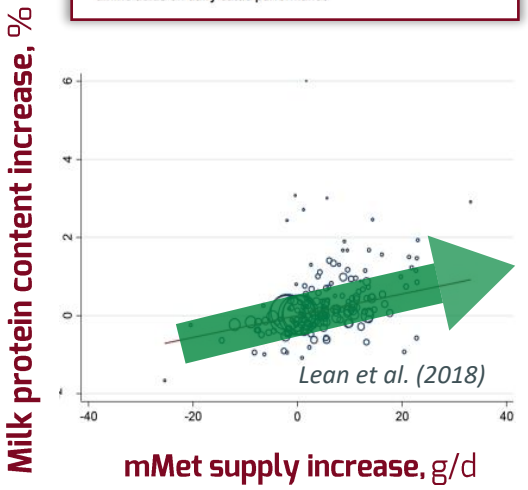
This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/3.0/).

Meta-analysis to predict the effects of metabolizable amino acids on dairy cattle performance



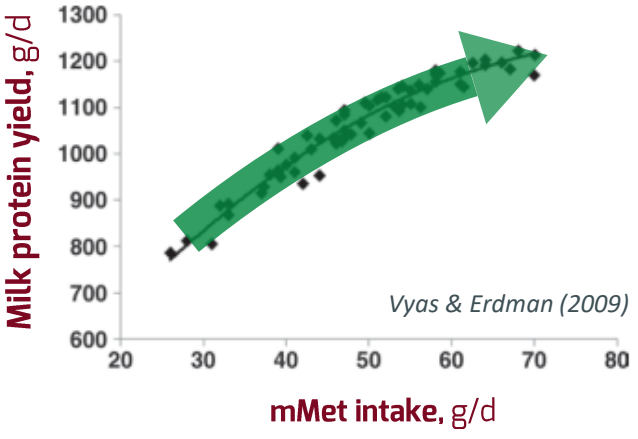
↑ Methionine

↑ Milk Protein

Meta-Analysis 4

J. Dairy Sci. 92:5011–5018
doi:10.3168/jds.2008-1769
© American Dairy Science Association, 2009.

Meta-analysis of milk protein yield responses to lysine and methionine supplementation



↑ Methionine

↑ Milk Protein

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Milk Protein synthesis depends on **Amino Acid** supply

↑ Amino Acid = ↑ Milk Protein

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Consistent, Proven, Overlooked: Methionine Powers Milk Fat too

Meta-Analysis 1

Animal (2016), **10:12**, pp 1975–1985 © The Animal Consortium 2016
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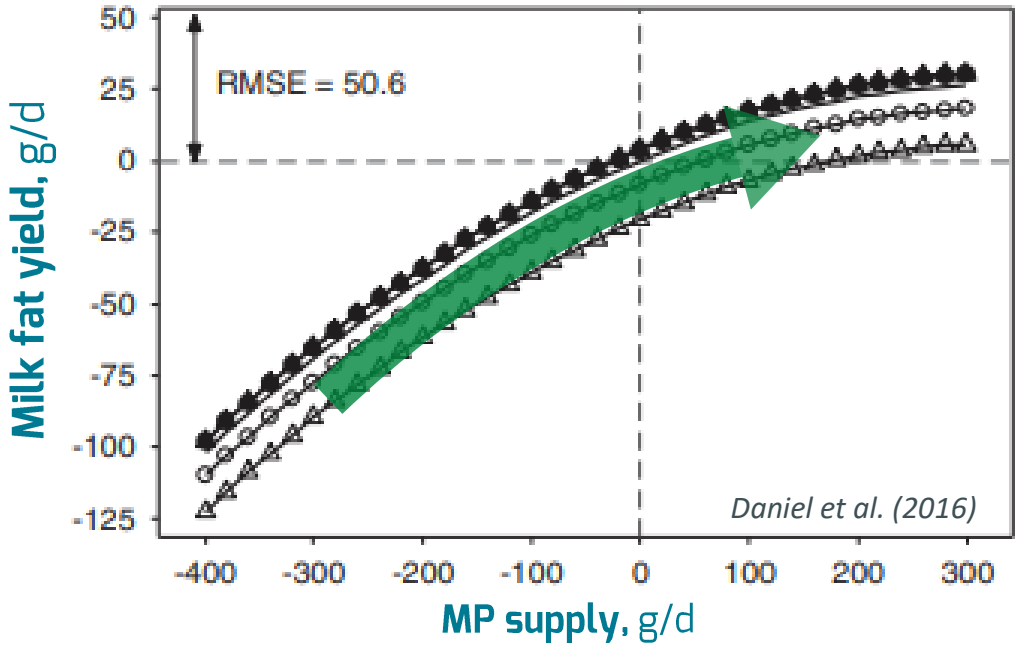


↑ MP

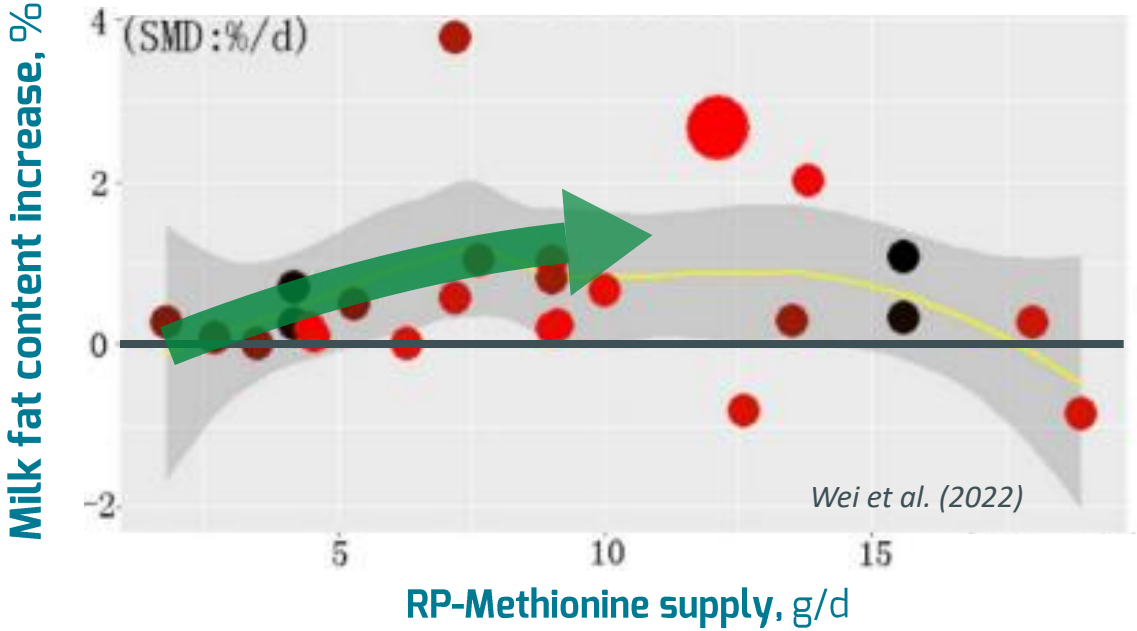
↑ Milk Fat

Meta-Analysis 2

animals

Article

Meta-Analysis of Rumen-Protected Methionine in Milk Production and Composition of Dairy Cows



↑ Methionine

↑ Milk Fat

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The Impact of Amino Acids beyond Milk Protein are often *not accounted for*

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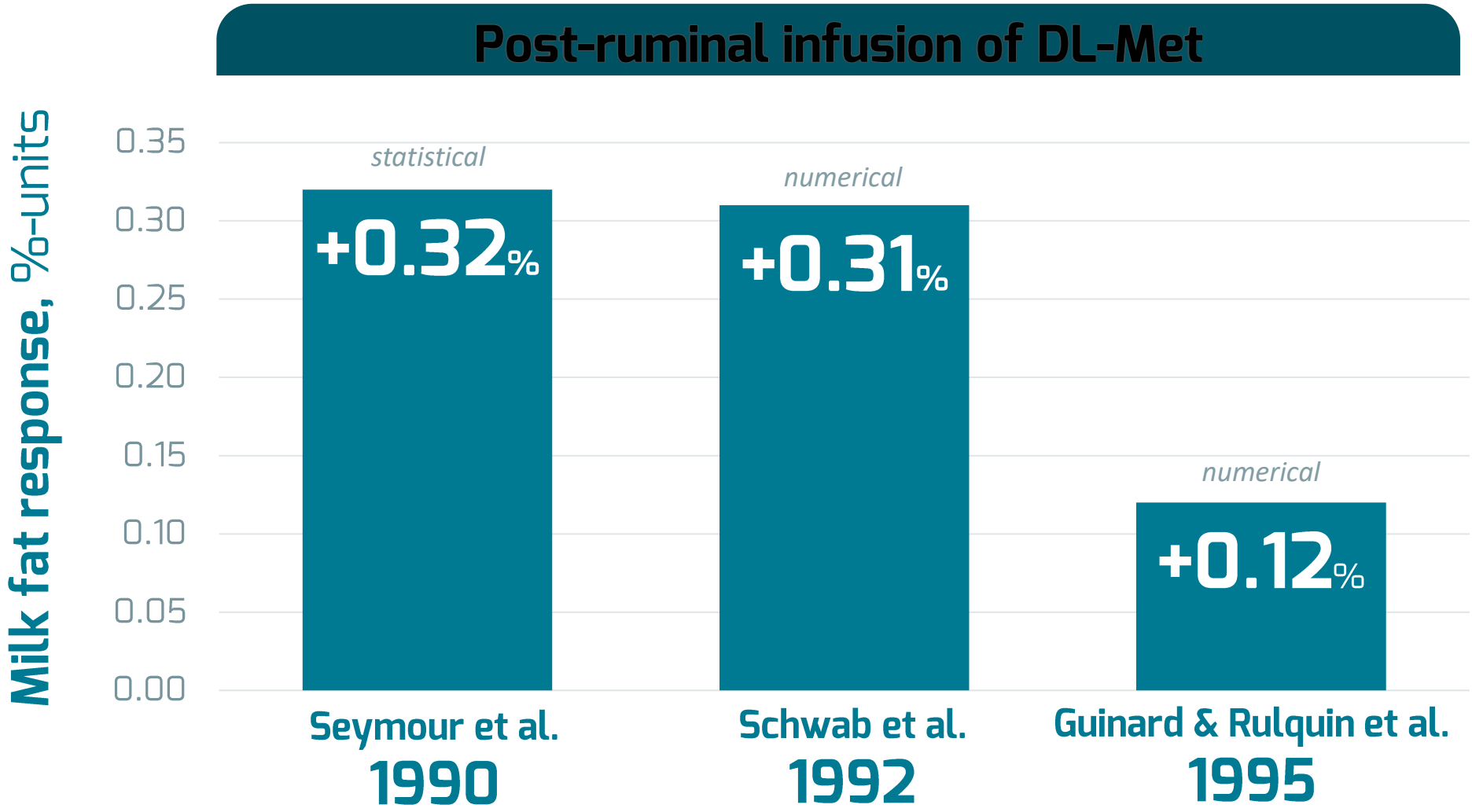
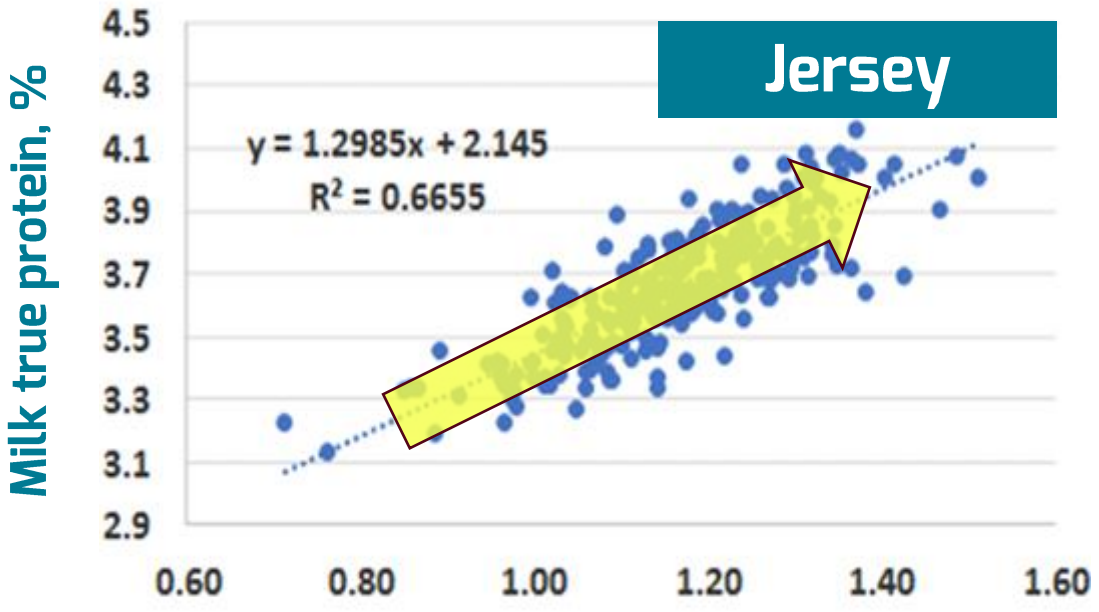
Consistent, Proven, Overlooked: Methionine Powers Milk Fat too

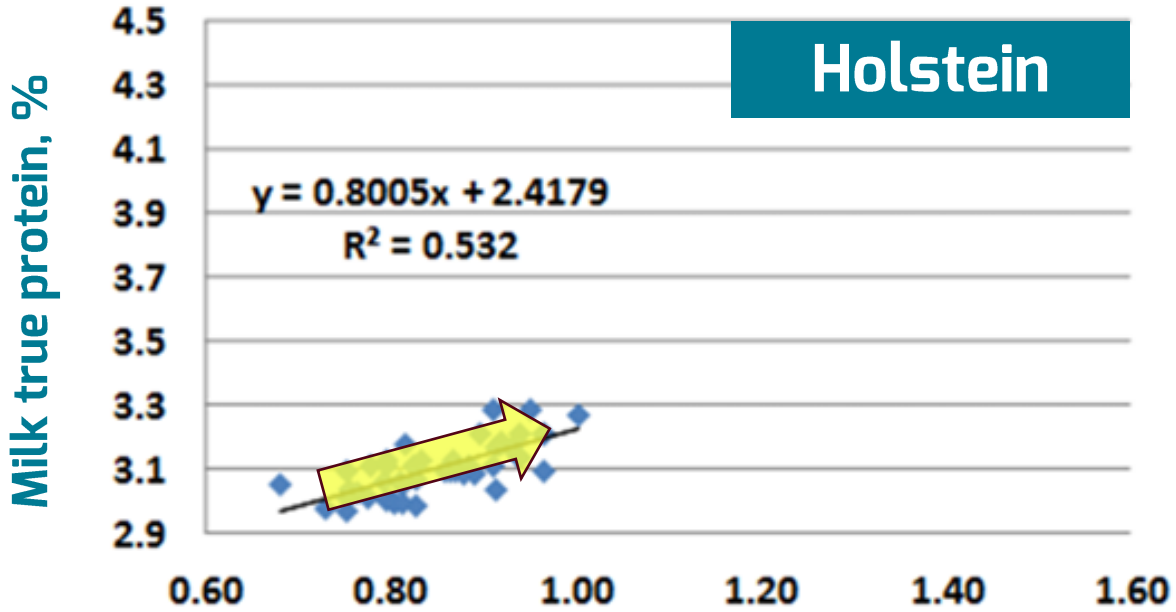


Consistent, Proven, Overlooked: Methionine Powers Milk Fat too

Herd Management Milk Analysis: Jersey vs. Holstein

D. M. Barbano[1], H. Dann[2], A. Pape[2], C. Melilli[1], and R. Grant[2]





A Century of Methionine Research: Beyond Protein Synthesis

1930s–50s

Methionine prevents fatty liver
lipotropic effects

(classic rodent models)

1980s

Adequate Methionine is essential for early embryo development, and enhances antibody response
(deficiency blunts immunity)

(rodent, broiler models)

2000s-2020s

Methionine Improves Liver, Immune System, Reproduction, etc.

(dairy cows)

2010s-2020s

Methionine is Confirmed to have Molecular Impact:

Methionine
↓
SAM
↓
mTOR/SREBP-1

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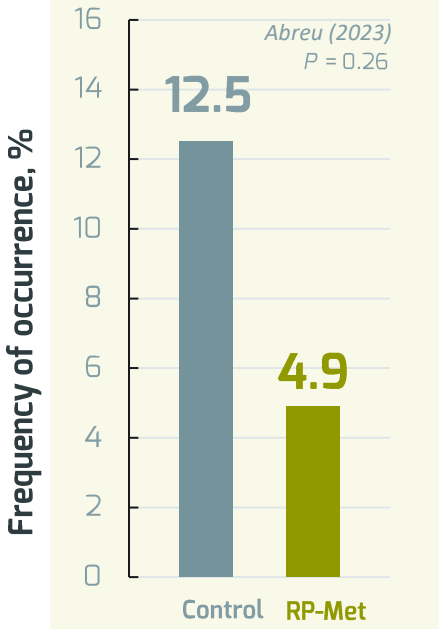
Methionine Supports Health & Reproductive Performance

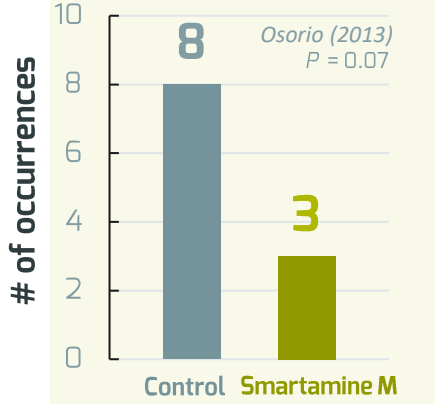
Mastitis Cases

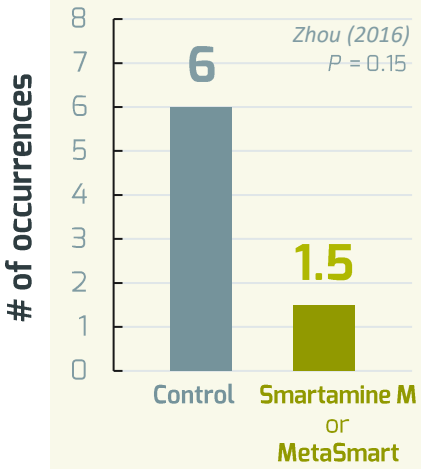
↓ of ~40%



Ketosis Cases

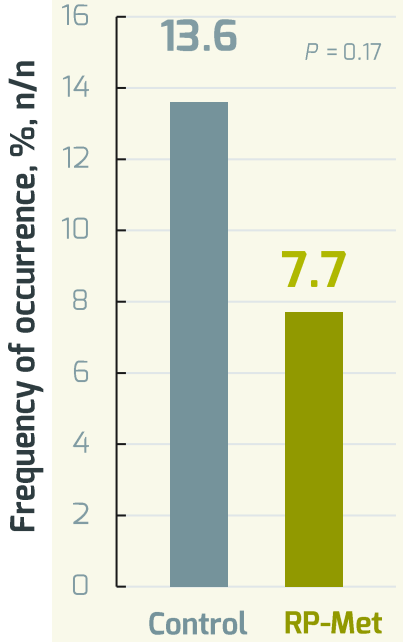
↓ of ~30%





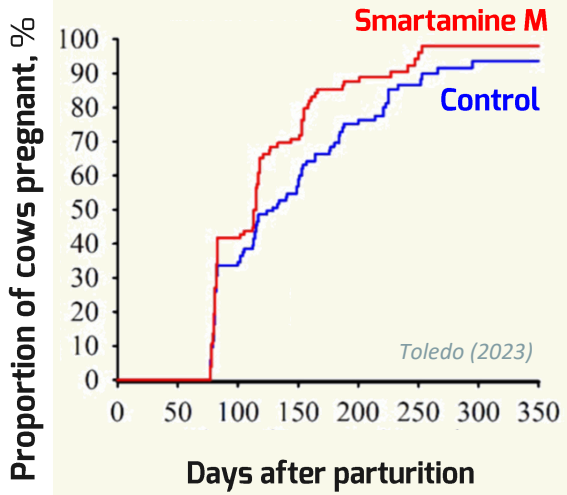
Metritis Cases

↓ of ~50%



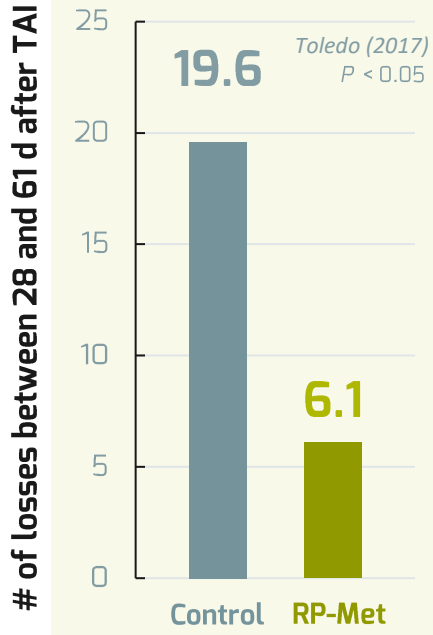
Pregnancy Success

↑ of ~5%-units



Pregnancy Losses

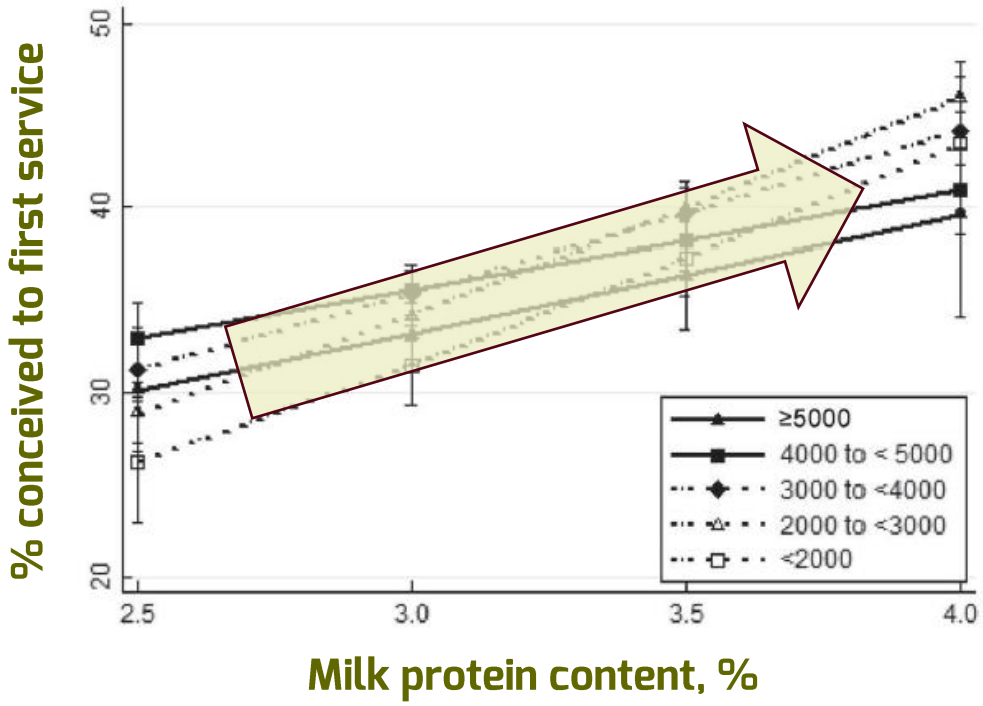
↑ of ~7%-units



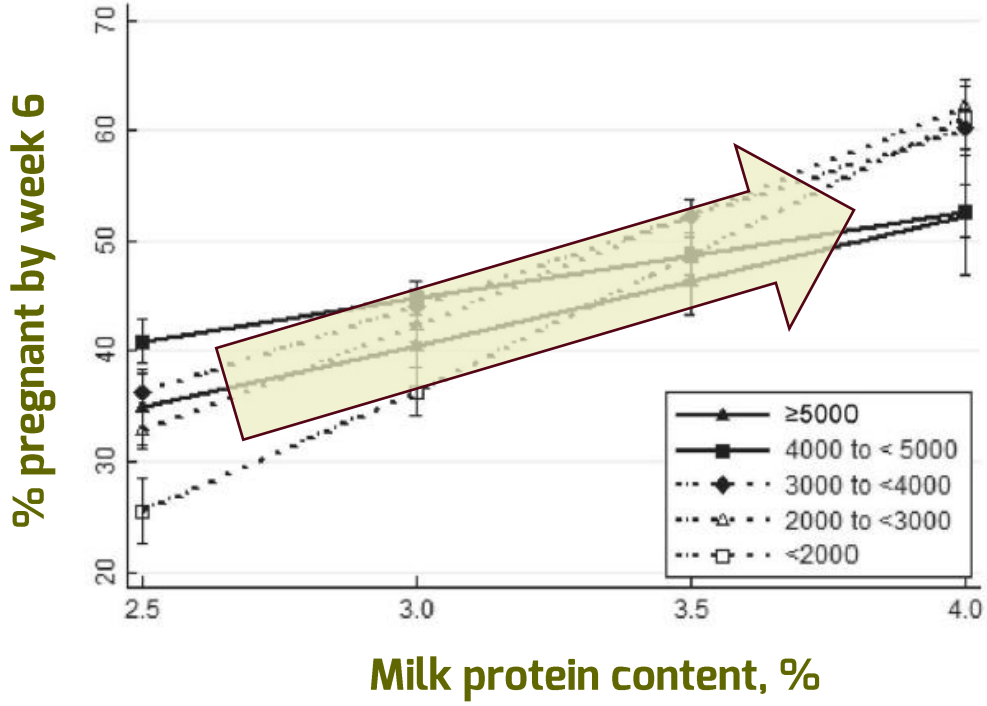
Methionine Supports Health & Reproductive Performance

Cows with higher milk protein concentration had increased conception at first service and pregnancy by week 6

Efficiency of 1st breeding attempt



Overall speed and success of getting cows bred



Morton et al. (2016): 74 Australian dairy herds, 126,277 cows, with 359,892 calving (and hence lactation recorded).

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Why this Matters?

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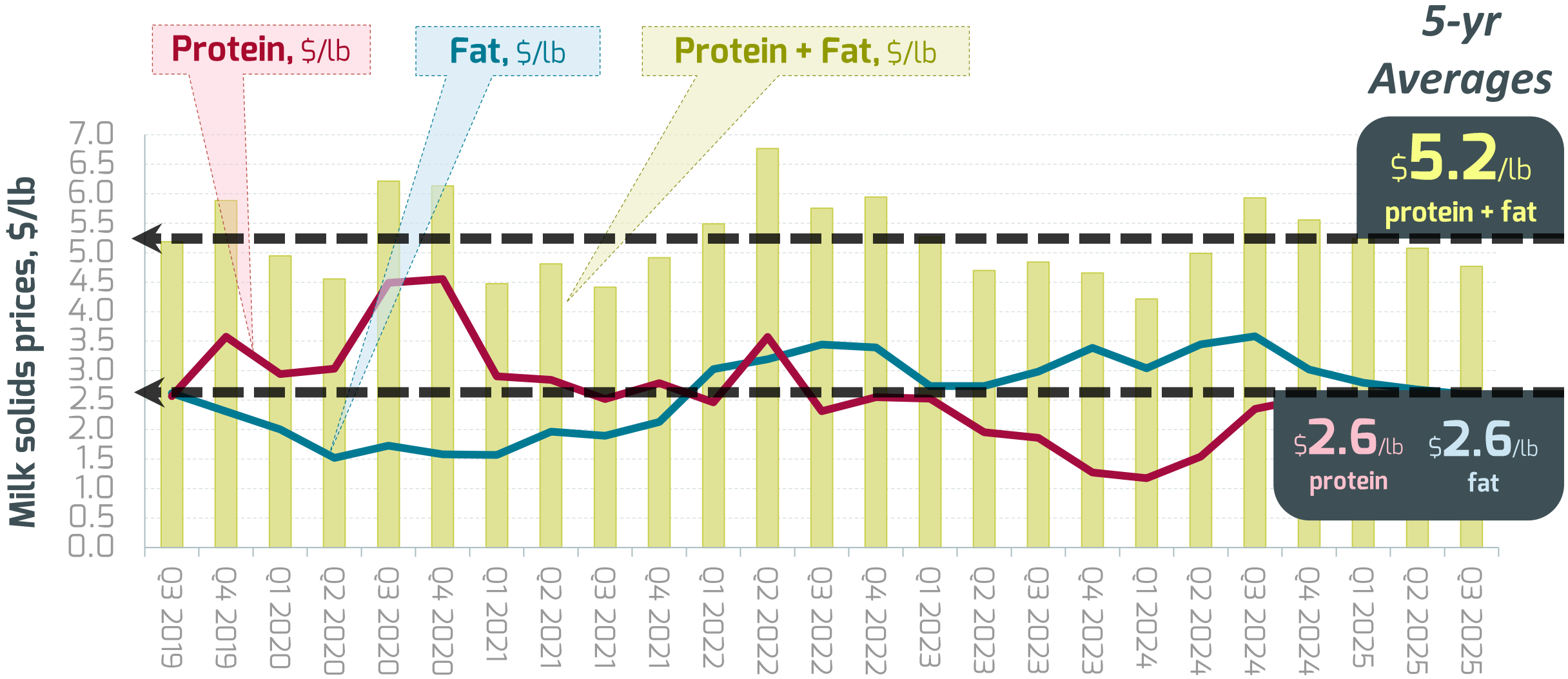
Profitability of Your Herd = Solids Output ✖ Pricing



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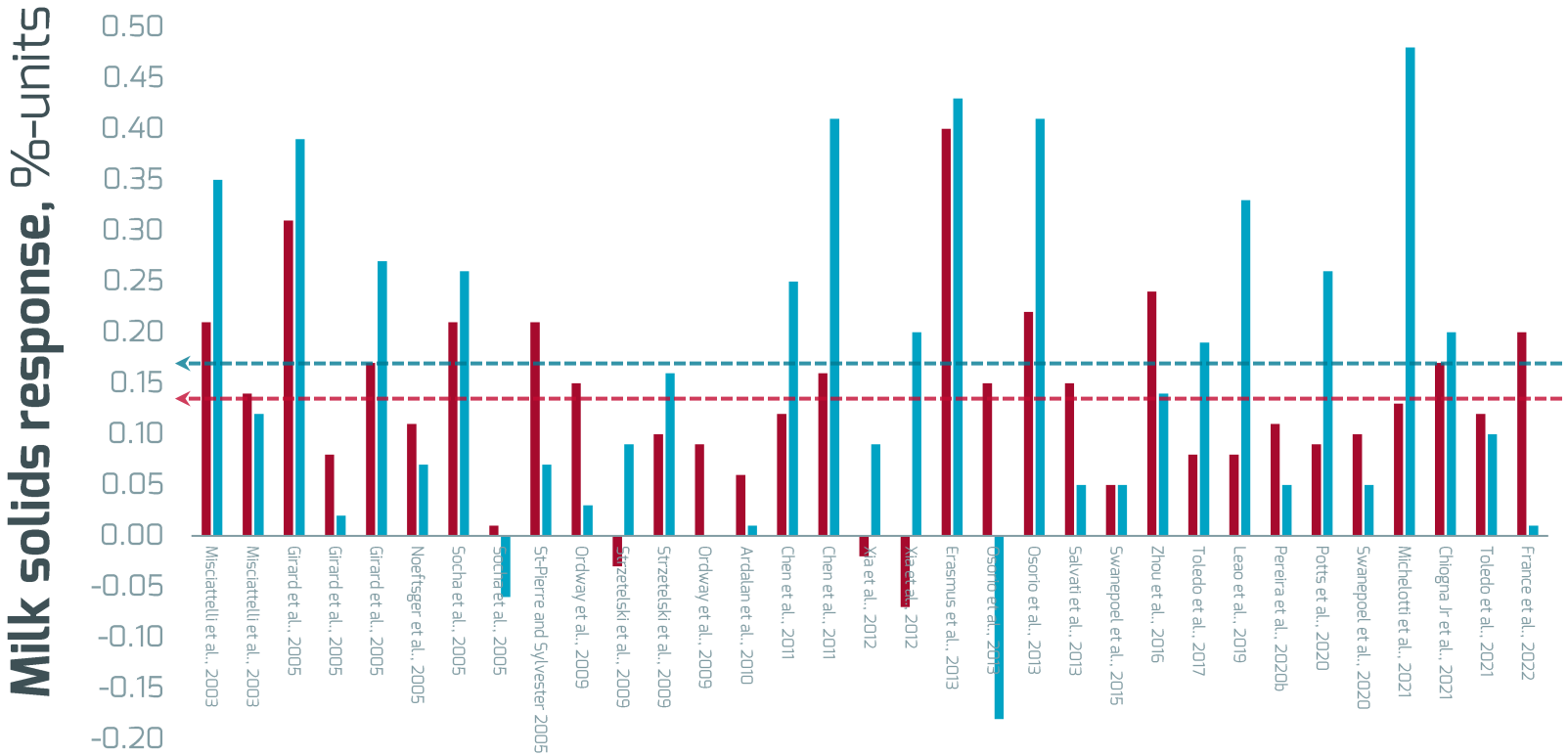
Consistent Impact of Methionine Supplementation



Fat Revenue $?

+ 0.16 *units* in **Milk Fat %**

+ 0.12 lb

P < 0.01

+ 0.13 *units* in **Milk Protein %**

+ 0.1 lb

P < 0.01

Protein Revenue $?

Bahlou, Whitehouse et al. (2024)

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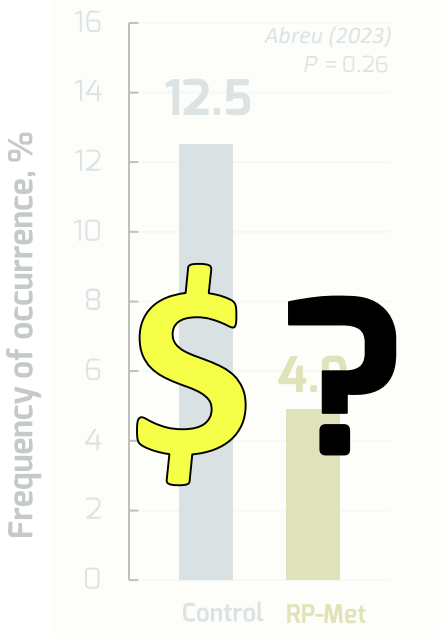
Methionine Supports Health & Reproductive Performance

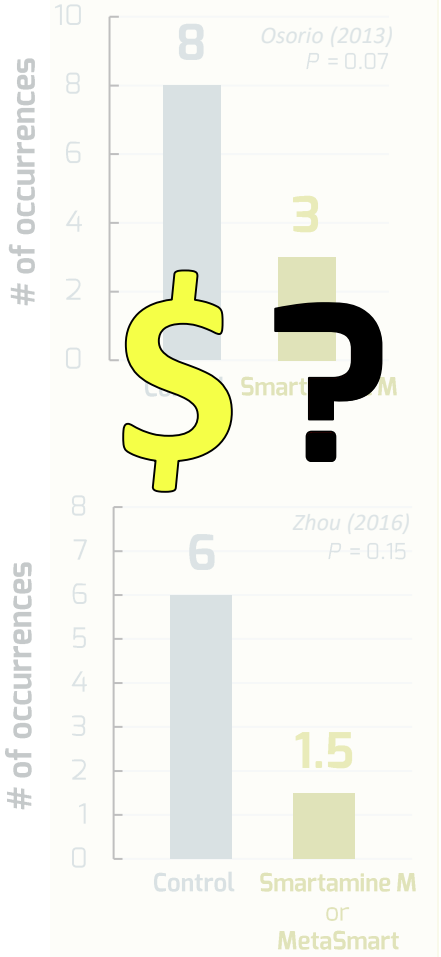
Mastitis Cases

↓ of ~40%



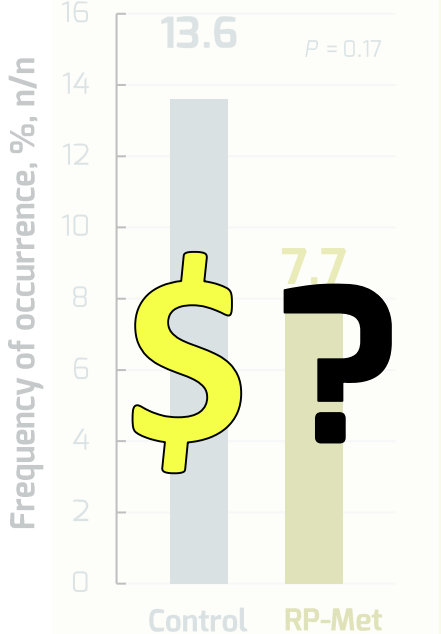
Ketosis Cases

↓ of ~30%



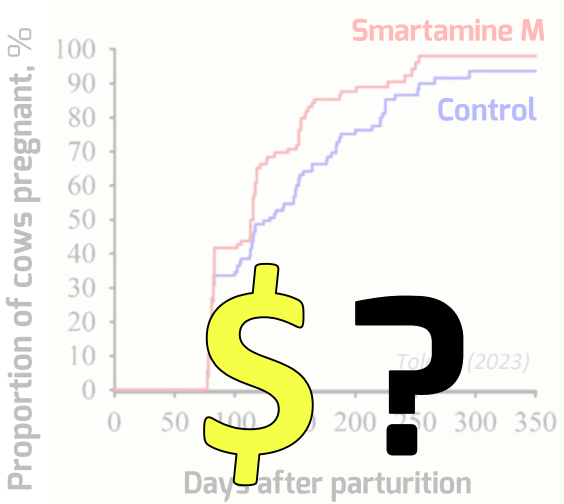
Metritis Cases

↓ of ~50%



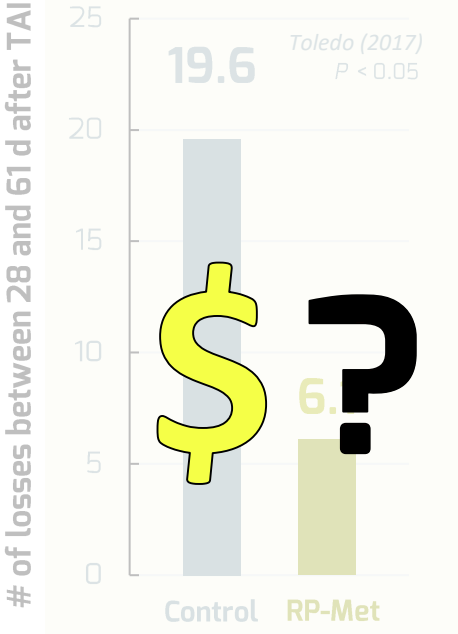
Pregnancy Success

↑ of ~5%-units

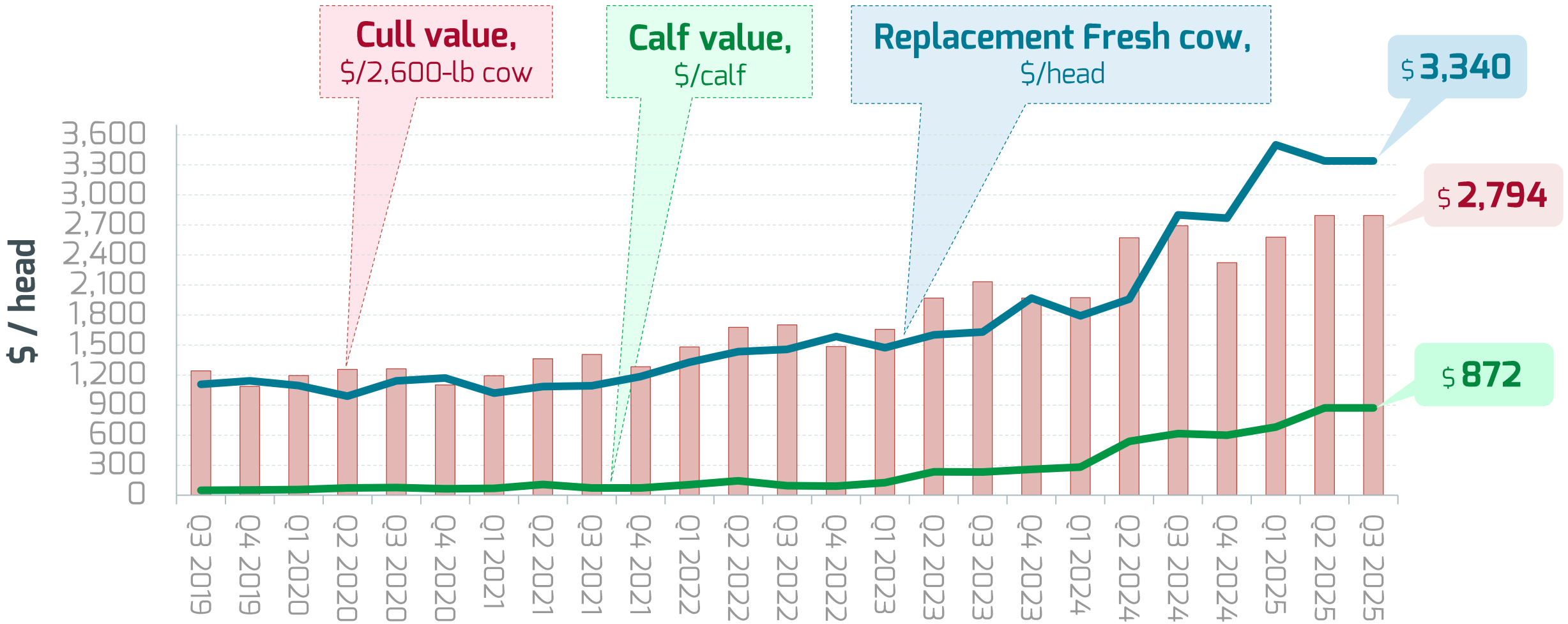


Pregnancy Losses

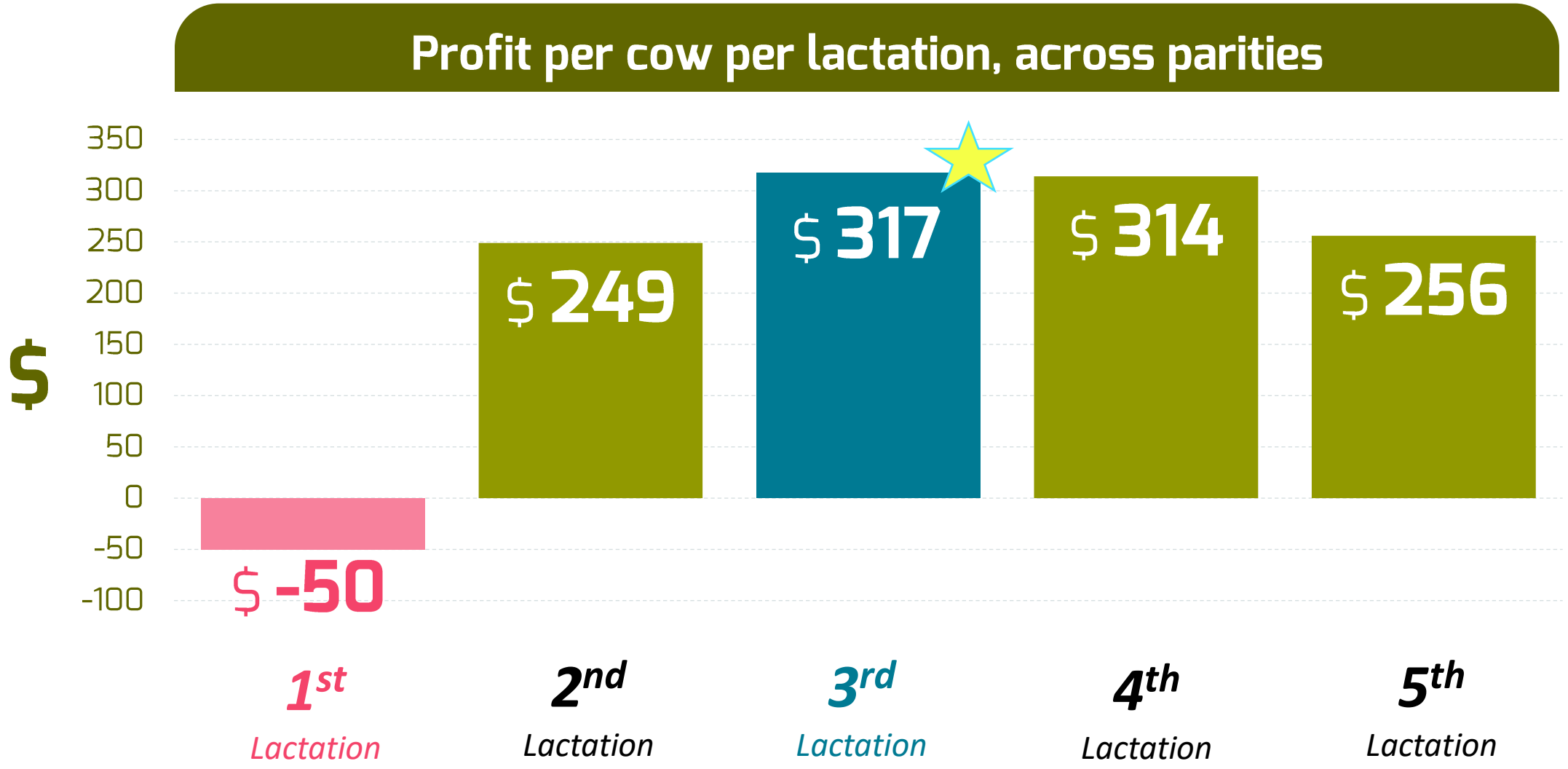
↑ of ~7%-units



Improved Reproductive Performance *vs* Current Market



Longevity *vs* Profitability per Cow



USDA Net Merit 2021 economic model

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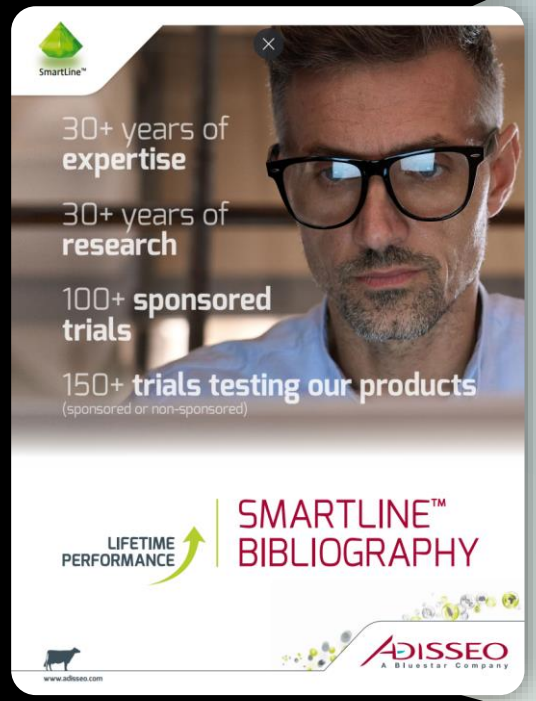
Developed with Proven Scien



How

can we **translate** all these findings into the **"field language"**

[**Money, Cost, Returns, ...**]

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MilkSmart - Profitability of AA Balancing

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Smartamine® M | $ 0.00 / kg of product | USD | English | *Default template*

Investment

	Units	Far-off	Close-up	Fresh	Early-Mid lact.	Late lact.
Smartamine M	g/cow/d	---	10	16	16	16
	$/cow/d	---	0.000	0.000	0.000	0.000
TMR Cost	$/cow/d	0.00	4.88	9.00	11.00	9.25
+ Smartamine M	$/cow/d	0.00	5.07	**9.78**	**11.18**	**9.43**

Cost with AA Balancing: **-0.25** $/cow/d

Milk Performance

	Units	Current	Adjusted	Difference	Milk Pricing		
Milk	lb/cow/d	80.0	81.00	1	0.0000	$/lb	Milk volume
Fat	%	4.0	4.16	0.16	2.1925	$/lb	Fat
Protein	%	3.1	3.23	0.13	2.7062	$/lb	Protein
Other Solids	%	5.7	5.70	0	0.3647	$/lb	Other Solids
ECM	lb/cow/d	86.57	90.14	3.57	0.0000	$/cwt	Quality Premium
Milk Value	$/cwt	19.24	19.94	0.70			

Improved — Milk Production: **0.76** $/cow/d

MILKPAY.COM

Reproductive Performance

	Units	Current	Adjusted	Difference
Pregnancy Rate	%	25	28	3
Pregnancy Loss	%	17	10	-7
Calf Sales	$/cow/yr	97	110	13
Mortality Cost	$/cow/yr	-50	-46	4
Reproductive Cost	$/cow/yr	-152	-140	11
Reproductive Culling Cost	$/cow/yr	-28	-14	14
Non-Reprod. Culling Cost	$/cow/yr	-165	-151	13

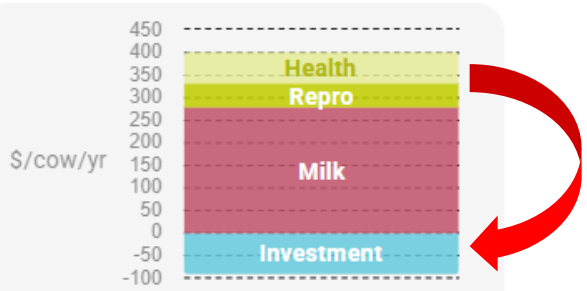
Improved — Reproduction: **0.15** $/cow/d

Health Status

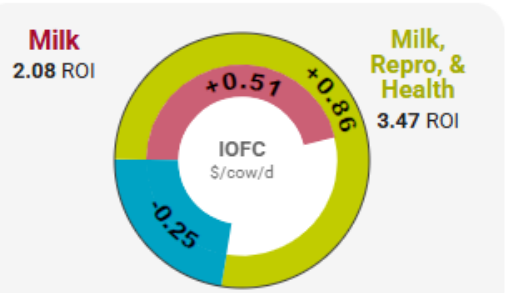
	Units (Incidence)	Incidence Current	Incidence Adjusted	Cost $/case	Cost ($/herd-cow/yr) Current	Adjusted	Difference
Mastitis (clinical)	% milking cows/mo	2	1.3	224	-54	-35	19
Ketosis (clinical)	% fresh cows	6	3.4	232	-14	-8	6
Ketosis (subclin.)	% fresh cows	40	22	67	-27	-15	12
Metritis	% fresh cows	15	8.6	511	-77	-44	33

Improved — Health: **0.19** $/cow/d

Investment vs. Gross Returns



Investment vs. Net Returns



AAB Savings: -18 cents/cow/d
* for a reformulated diet

+DMI: Close-up & Fresh

Herd: 1000 cows

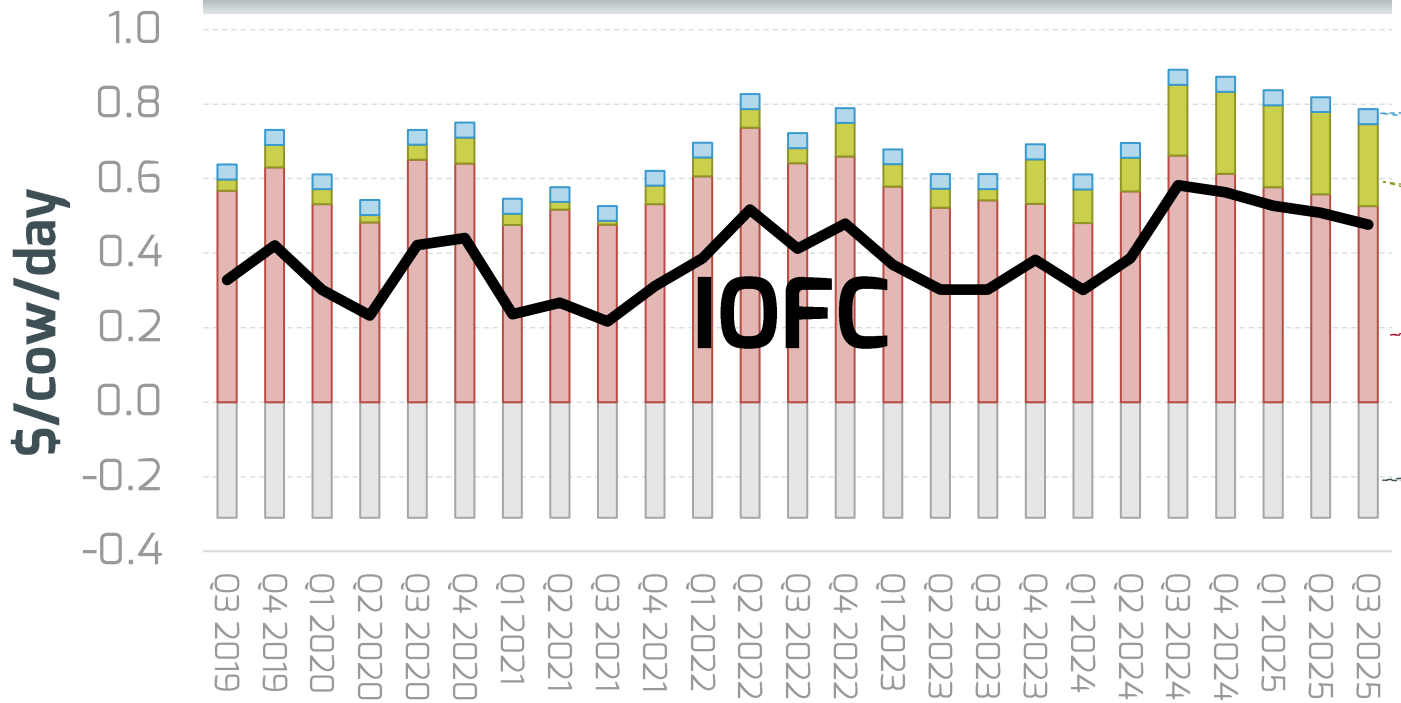
Cow | Herd | Day | Month | Year

Reset | LB | KG

Over time IOFC From Smartamine M Supplementation

2025 Average IOFC

+ $ 0.50/cow/d **+ $ 140**/herd/d



6-yr Avg IOFC

+ $ 0.38/cow/d

Improved health income	+ $0.04/cow/d
Improved fertility income	+ $0.08/cow/d
Improved milk solids income	+ $0.57/cow/d
Cost: Smartamine M & ⇧ DMI	- $0.31/cow/d

**Still not accounting for the epigenetic impact of Met on the offspring (Laporta lab, UW-Madison)*

Assumptions

- ✓ ↑ *Milk fat (+0.12 lb/cow/d), protein (+0.10 lb)*
- ✓ ↑ 3%-units in 21-day pregnancy rate, ↓ 7%-units in pregnancy loss
- ✓ ↓ 5%-units in mastitis, ketosis/yr
- ✓ *Quarterly FMMO prices*
- ✓ Replacement cost, calf value, cull value accessed from national comprehensive monthly reports
- ✓ Mastitis cost ($224/case)
- ✓ Subclinical ketosis cost ($68/case)

MilkSMART by Adisseo

Do you currently balance for AA, or plan to ?

Register now to MilkSmart, and uncover what's the true value proposition impact to your customers!

AA Balancing provides higher IOFC, not just higher production

Thank you