

STANDARDIZING LACTATION YIELDS

from national data with age-parity-season-region corrections for fair comparisons across individual cows & environments

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5 “W”s OF STANDARDIZED YIELDS

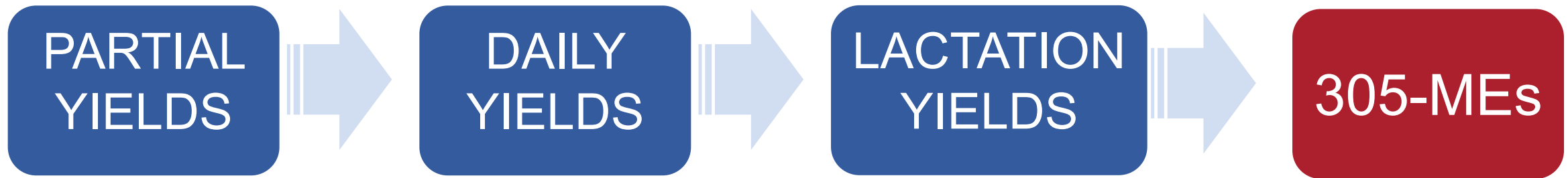


HOW?

HOW DO WE ESTIMATE YIELDS?



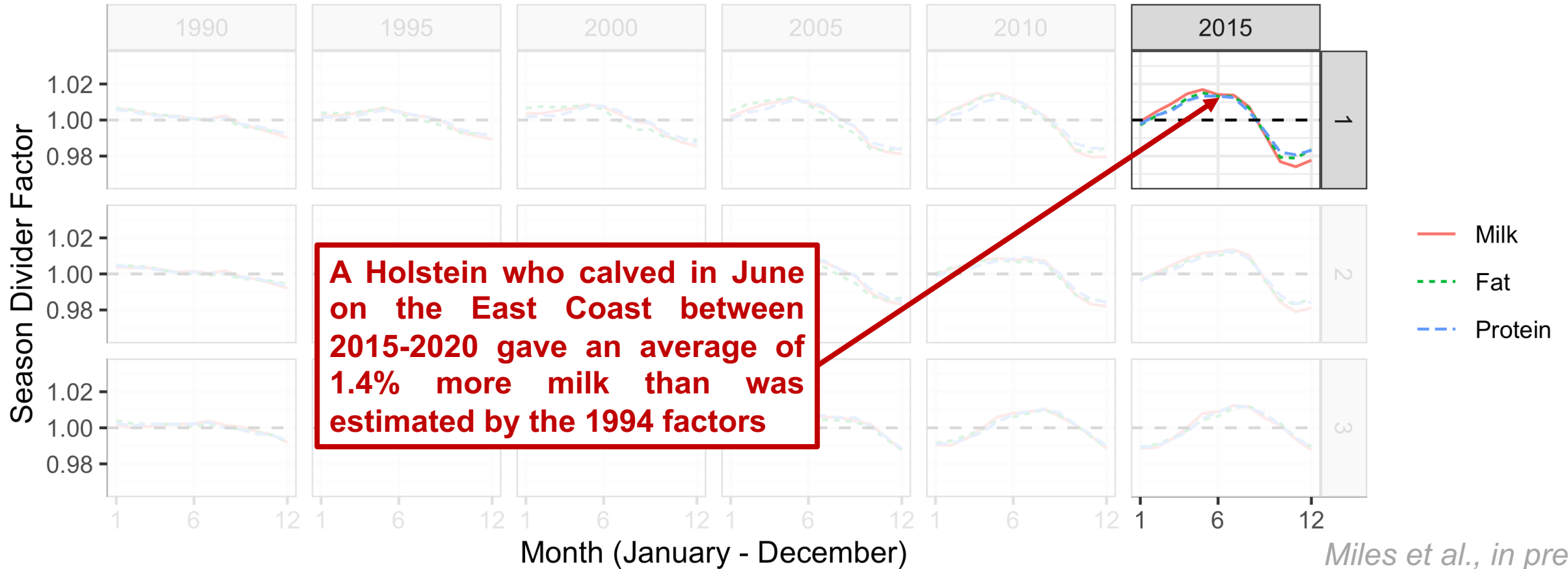
HOW DO WE COMPARE YIELDS?



- **Genetic selection changes maturity patterns** (Norman et al 1995)
- **Mature Equivalent factors last estimated in 1994**
 - **Corrected for parity, age, season of freshening, previous days open, geographical region, and 2X milking**

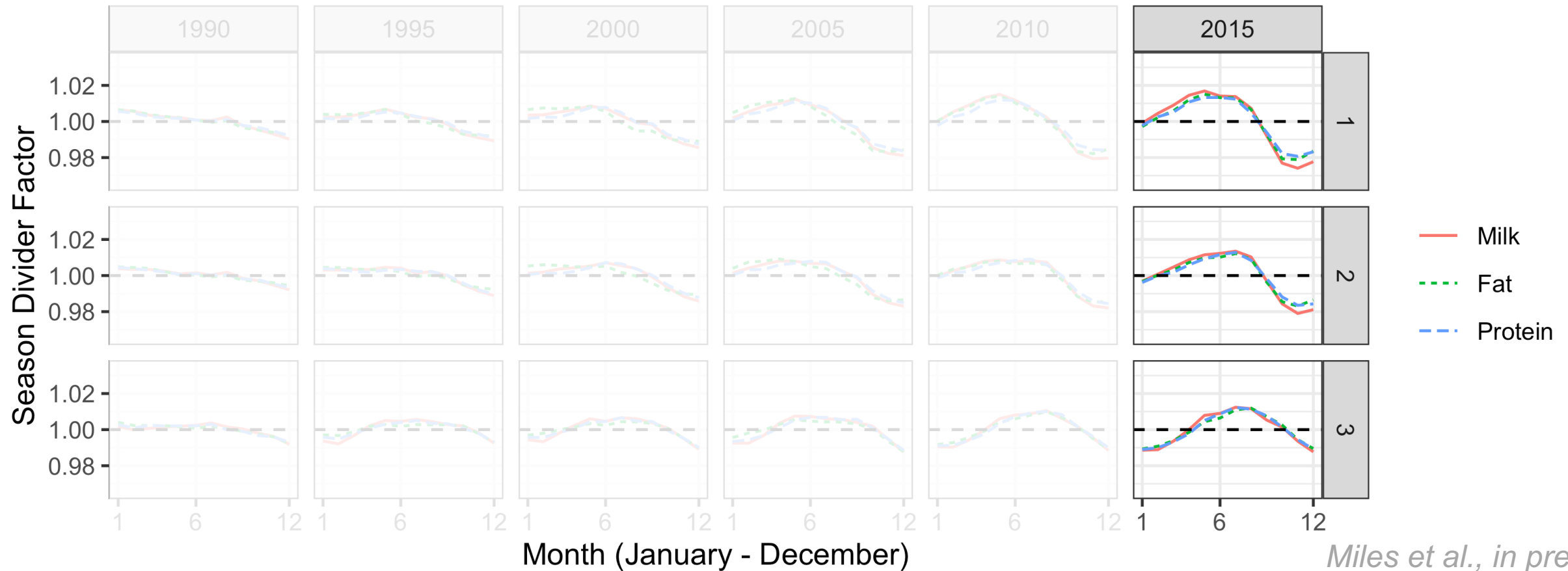
HOW WELL ARE THEY WORKING?

Holstein Example

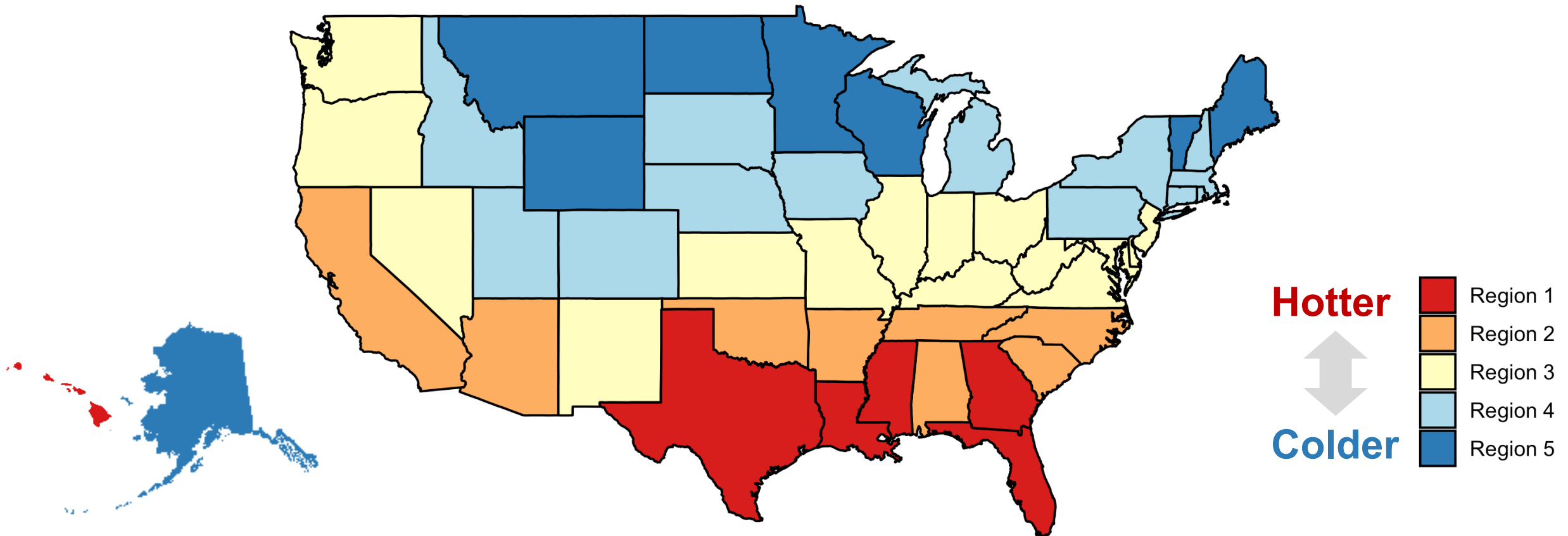


SEASON-REGION CORRECTIONS

Holstein Example



NEW CLIMATE-BASED REGIONS

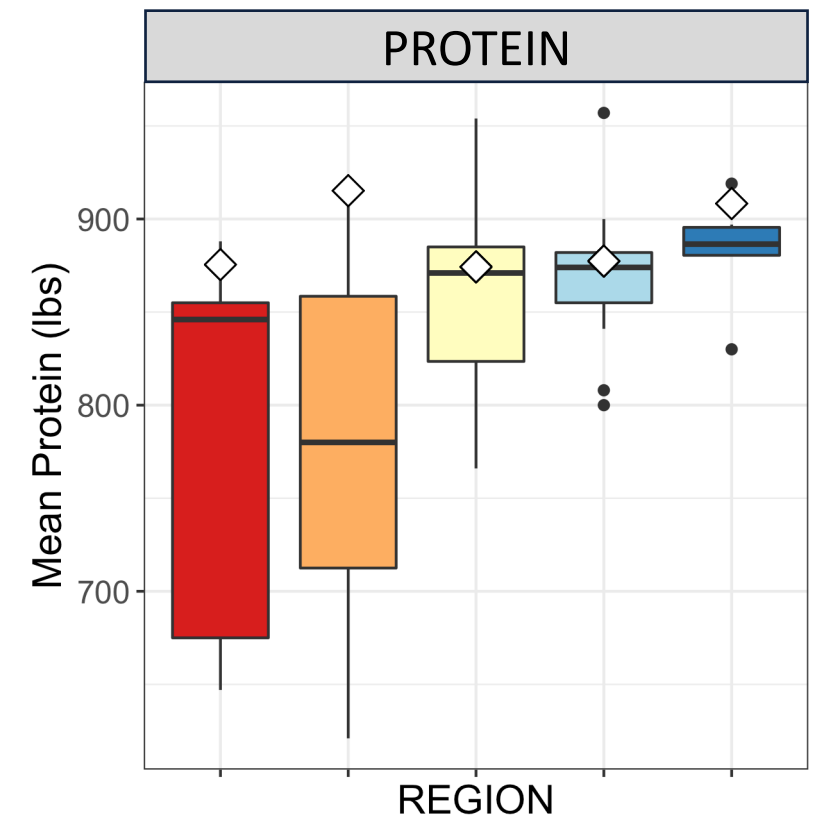
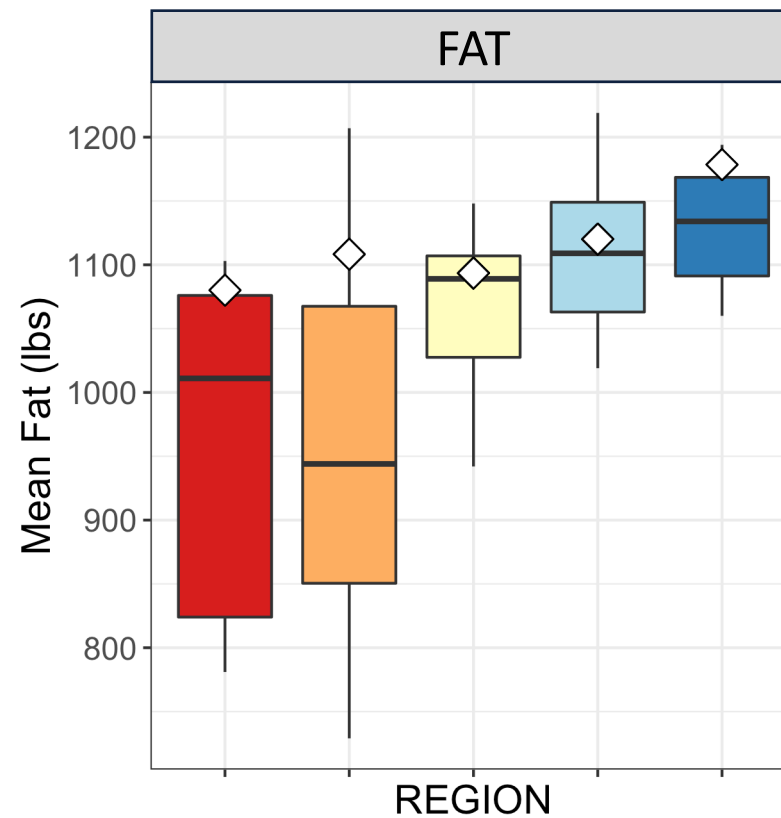
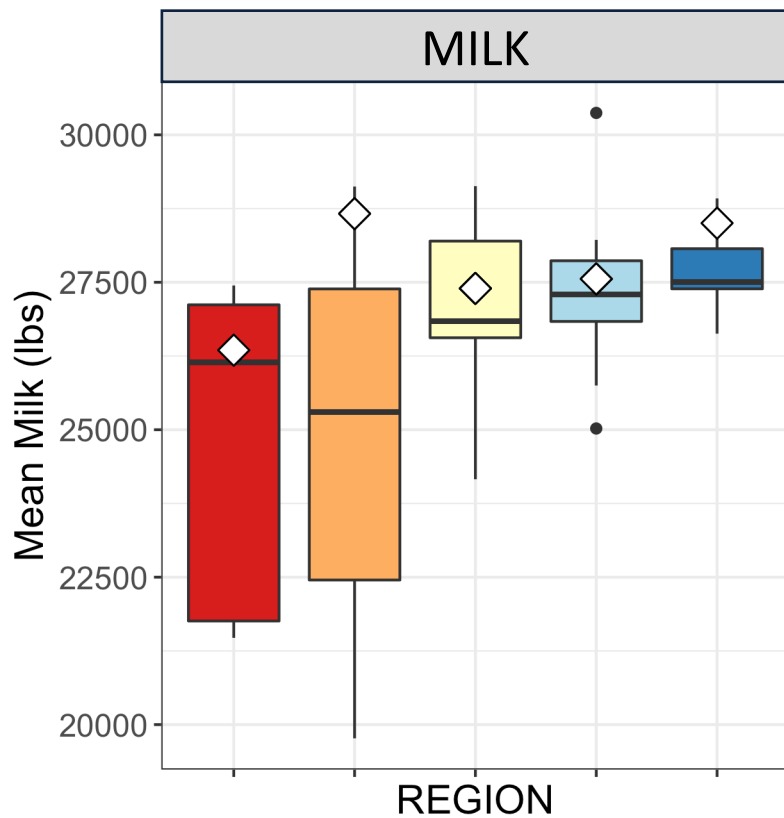


International Energy Conservation Code (IECC). 2021.

<https://codes.iccsafe.org/content/IECC2021P2/chapter-3-ce-general-requirements>

Miles et al., in prep

PRODUCTION BY REGION IN 2021



ESTIMATING NEW FACTORS

DATA

Lactation Records

Milk: 101.5 million

Fat: 100.5 million

Protein: 81.2 million

UNCHANGED

2X Milking Frequency
Previous Days Open

IMPROVED

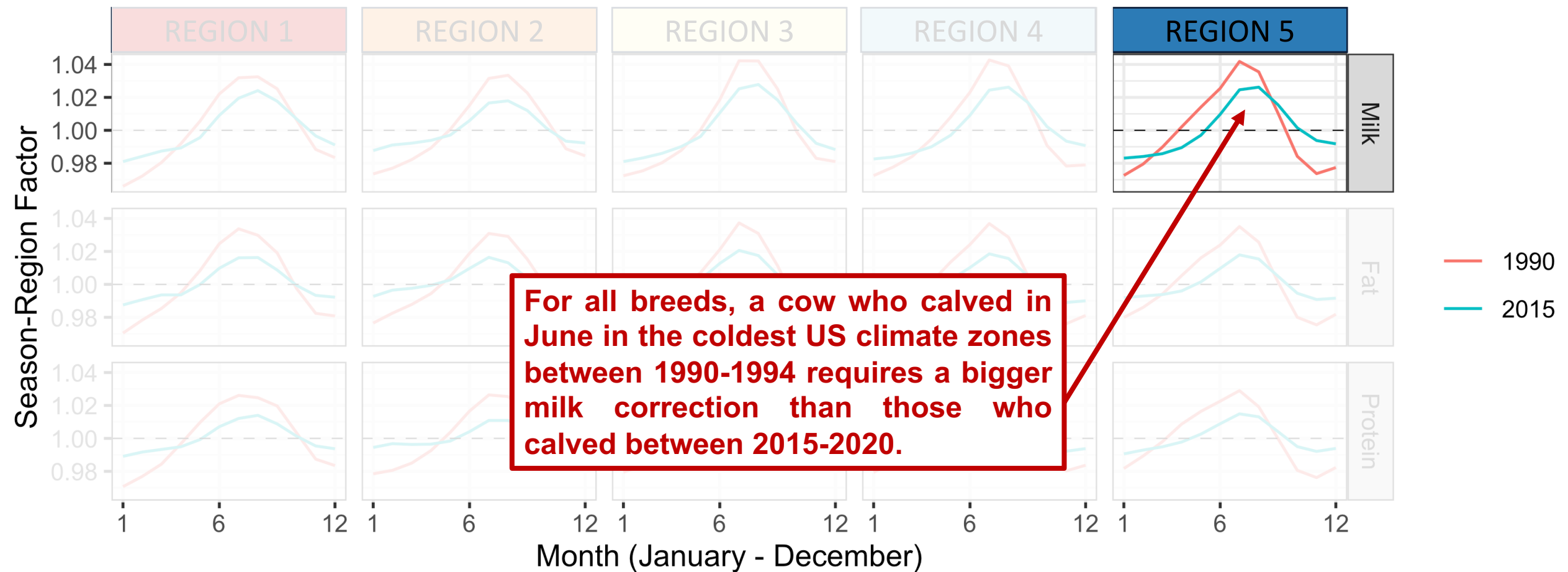
SEASON-REGION

~~3 Geographical Regions~~ → **5 Climate Regions**
~~Within Breed~~ → **Across Breed**

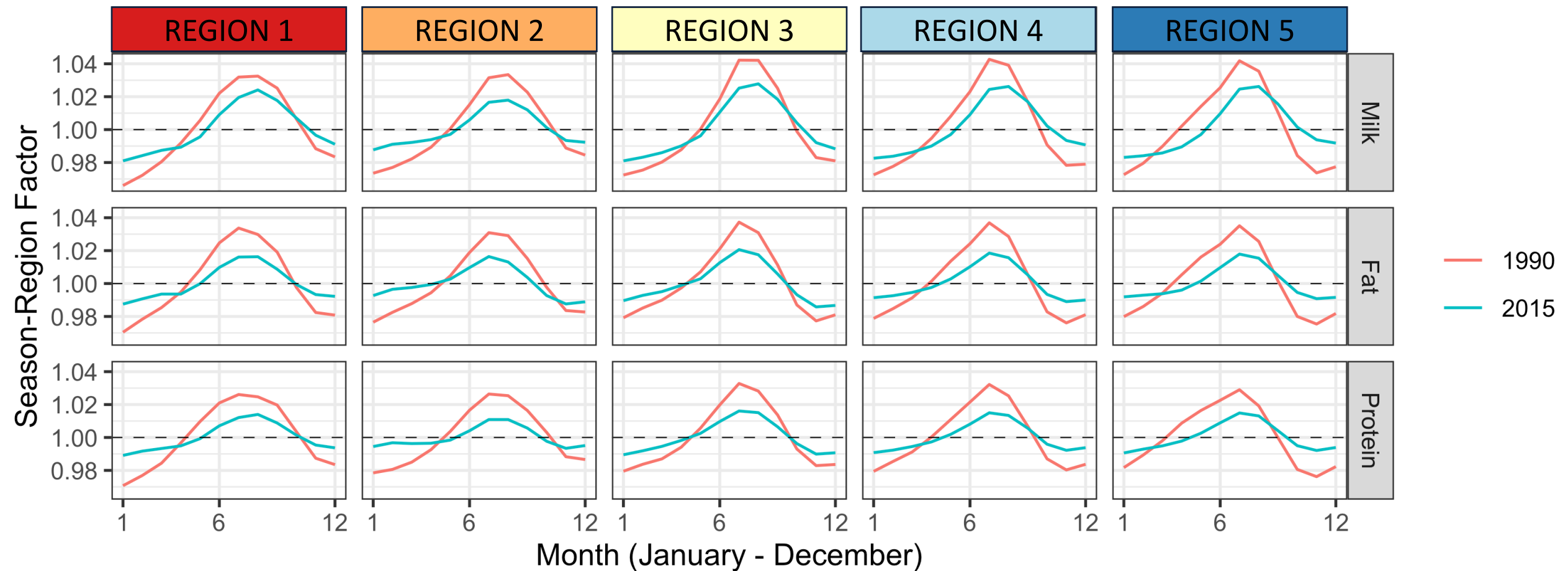
AGE-PARITY

~~Age Groups~~ → **Age in Months**
~~Mature Age~~ → **Average Age (36mo)**

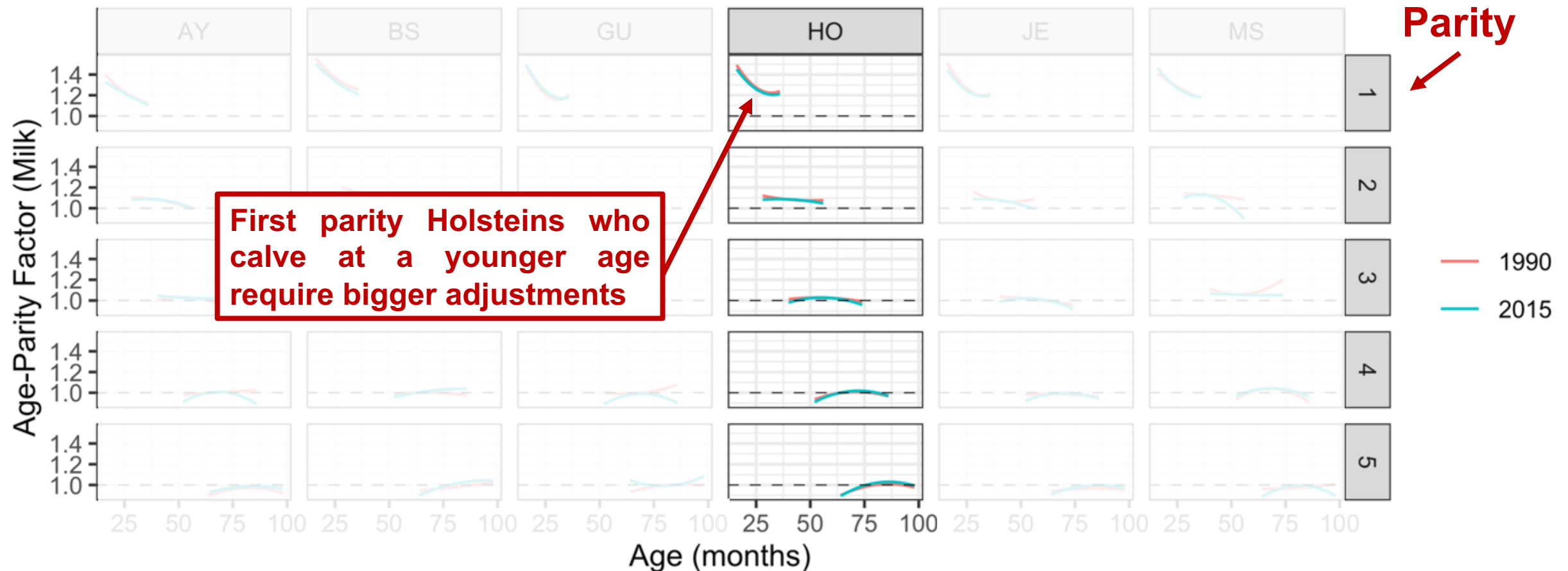
NEW SEASON-REGION FACTORS



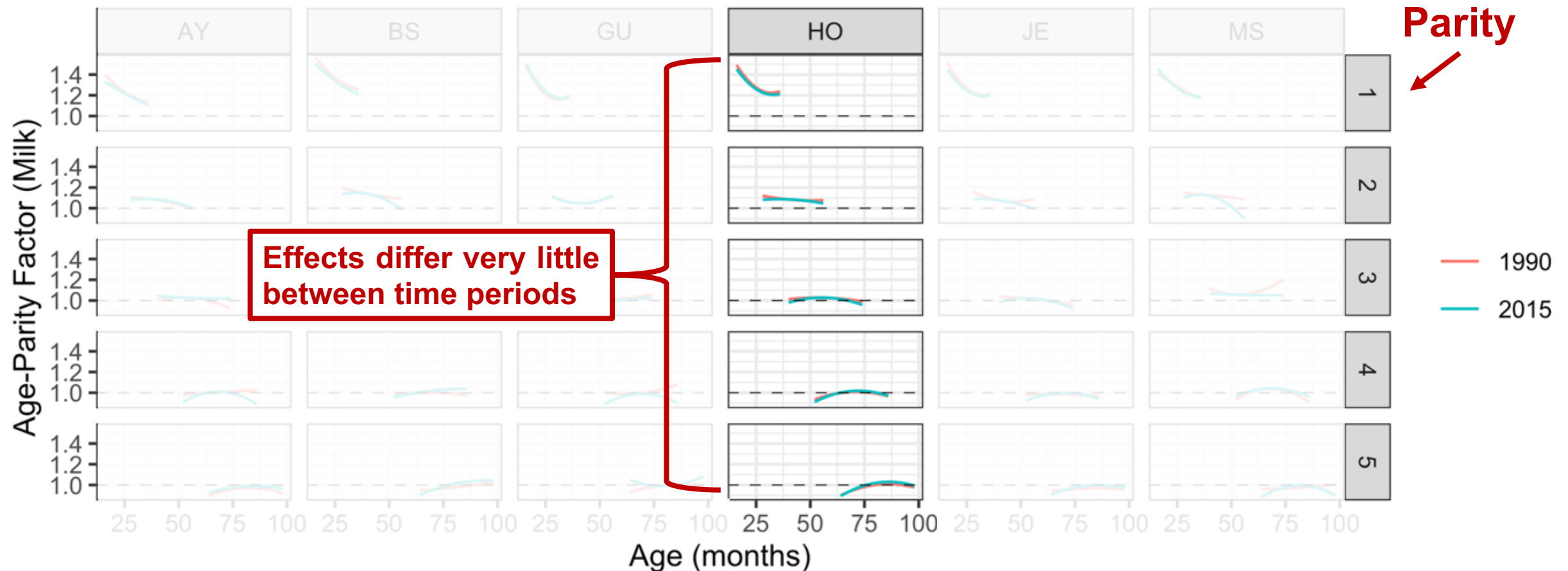
NEW SEASON-REGION FACTORS



NEW AGE-PARITY FACTORS



NEW AGE-PARITY FACTORS

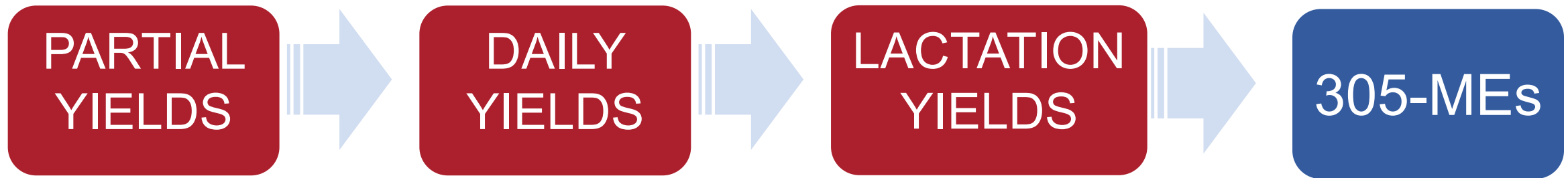


PTA CORRELATIONS: OLD v. NEW

April 2023 Test Run

Breed	Bulls	Milk	Fat	Protein
HO	39,807	0.999	0.999	0.999
JE	6,170	0.997	0.996	0.995
BS	1,177	0.983	0.983	0.984
AY	631	0.998	0.998	0.998
GU	563	0.994	0.991	0.989
MS	301	0.981	0.986	0.979

WHAT'S NEXT?





Immediate Impacts

- ↑ accurate 305-d yields
- fairer comparisons



Long-term Benefits

- Enhanced genetic selection

**Updated factors will have
immediate management benefits**

Key Messages

- Smaller seasonal corrections suggest we are doing a better job of managing cow environments
- Little change in age-parity factors suggesting stable maturity rates
- Correcting to 36-months rather than mature age is more reflective of actual cows in herd
- New standardization factors to be implemented in August 2023 evaluations

THANK YOU

Data were available to the authors from CDCB under USDA Agricultural Research Service Material Transfer Research Agreement #58-8042-8-007. While CDCB offers data stewardship, sole ownership and rights pertaining thereto remain with the producer and we thank U.S. dairy producers for sharing their data for research use.

This work was supported by USDA-ARS project 8042-31000-113-000D, “Improving Dairy Animals by Increasing Accuracy of Genomic Prediction, Evaluating New Traits, and Redefining Selection Goals”.

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