Growth performance and carcass characteristics of beef x dairy crossbred cattle in the feedlot

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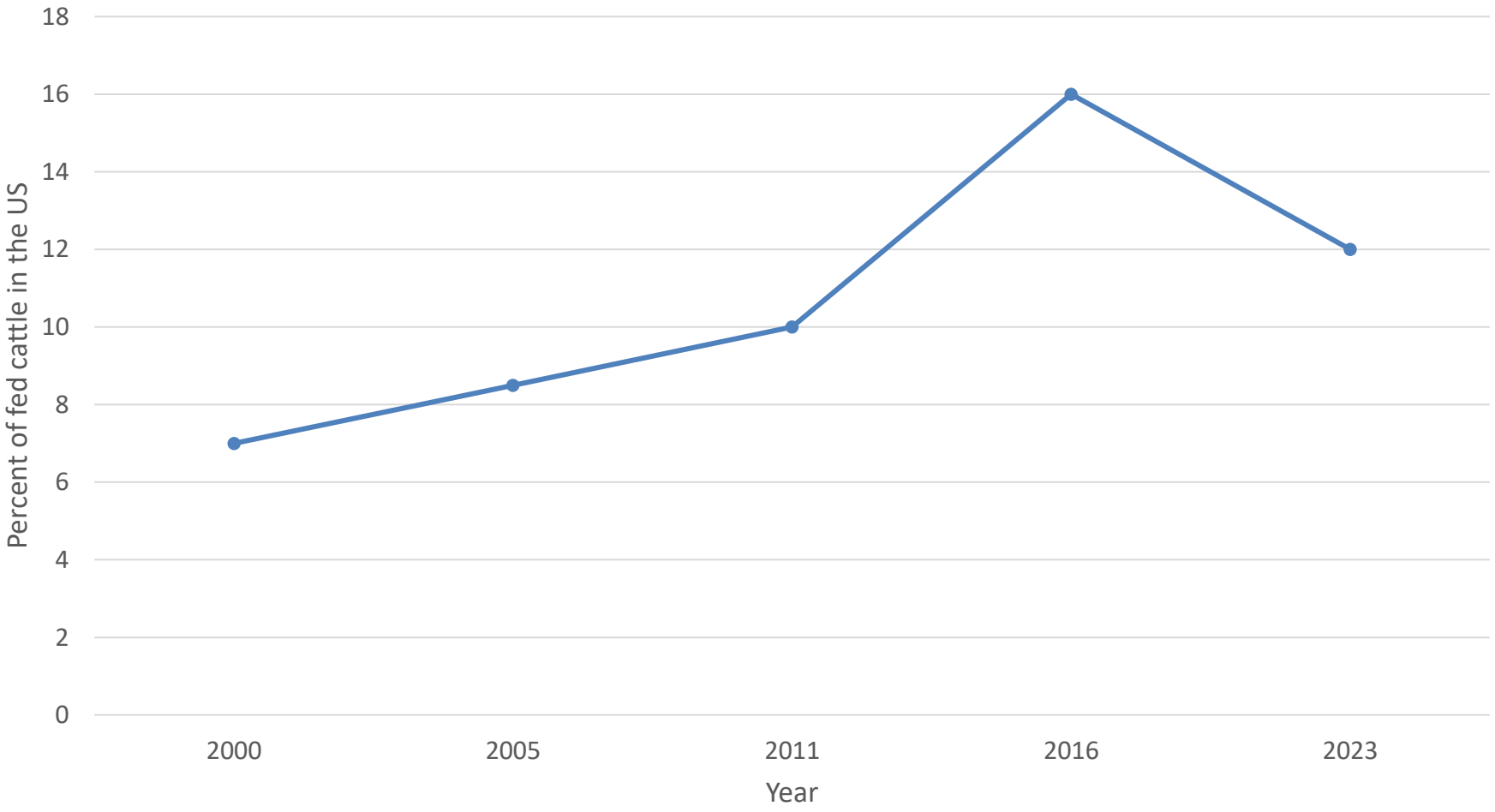
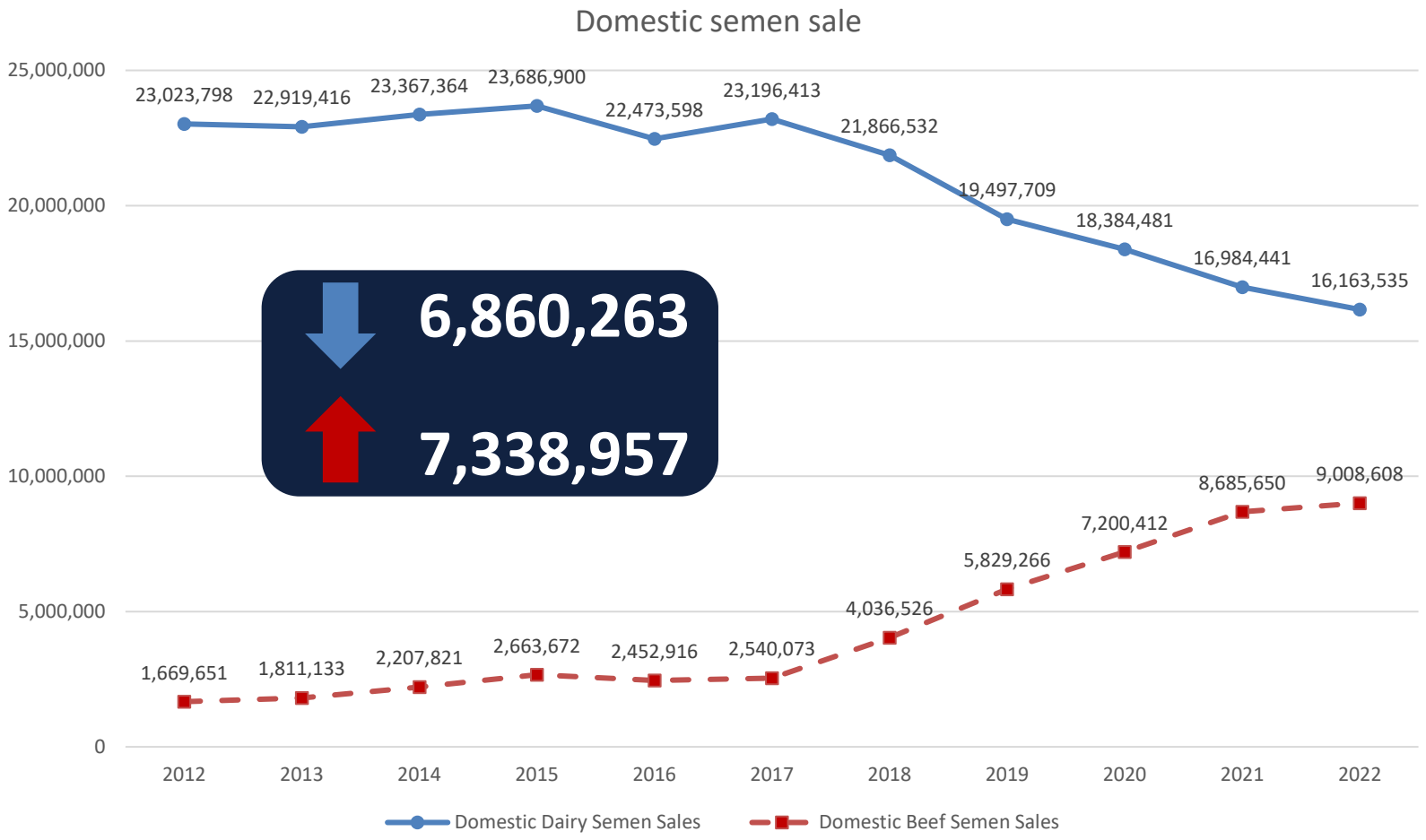
Cattle fed - Dairy Type



Semen sale trends



Beef semen use in CA dairies

- 2020 survey of California dairies found:
  - 81% use beef semen on dairy cows
  - 72% of dairies using beef semen have been using it for 3 or fewer years. Only 8% had been using beef semen for more than 6 years.
  - Angus semen is the most common beef breed used in dairies
  - 78% of dairies using beef semen noted extra profit as the main advantage of using beef semen

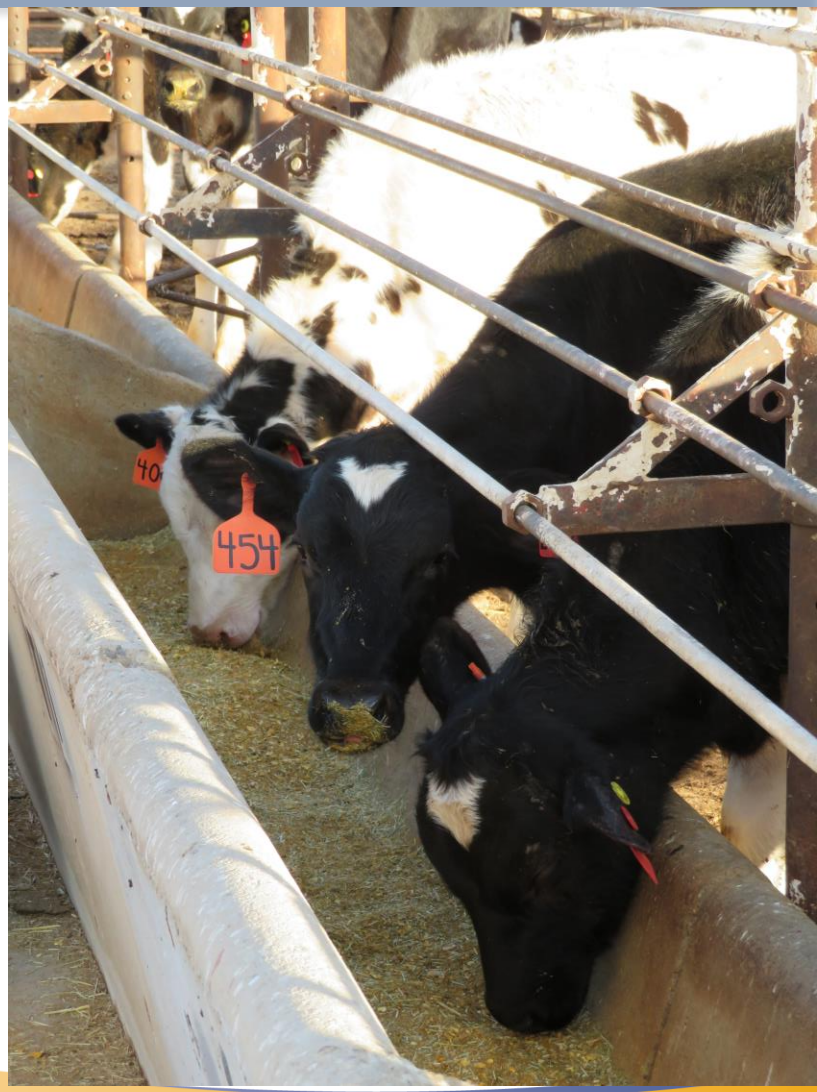
Pereira et al. 2021. Use of beef semen on dairy farms: A cross-sectional study on attitudes of farmers toward breeding strategies

How should we manage beef-on-dairy cross animals?

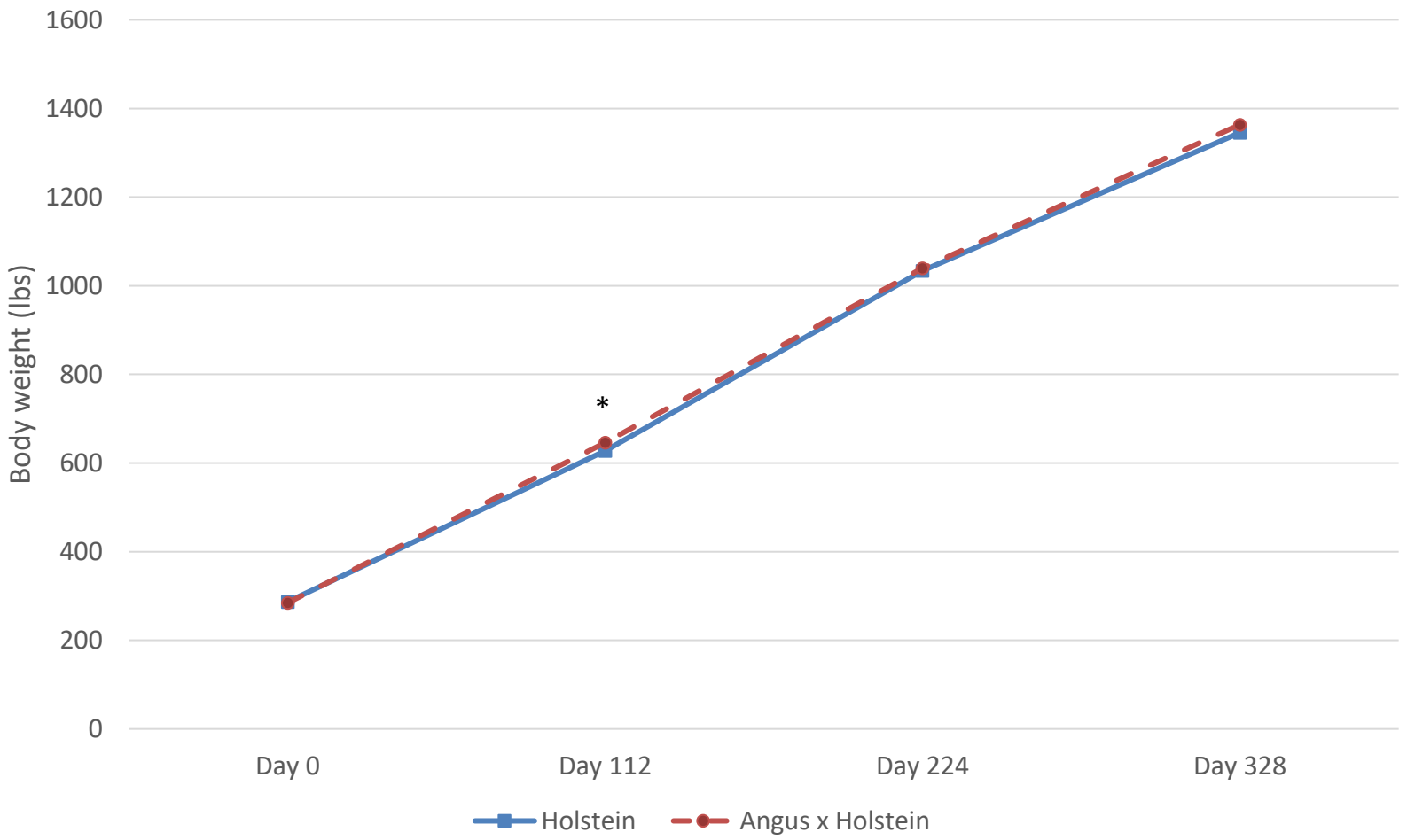
Angus-Holstein vs Purebred Holstein

Research Methods

- Conducted at the UC ANR Desert Research and Extension Center in Holtville, CA
- 80 purebred Holstein steers (286 ± 11 lb)
- 80 crossbred Angus x Holstein steers (284 ±13 lb)
- Sorted by weight and breed into 40 pens (4 animals/pen)
- Steam-flaked corn-based diet
- Same management
- Harvested and collected carcass data on day 328

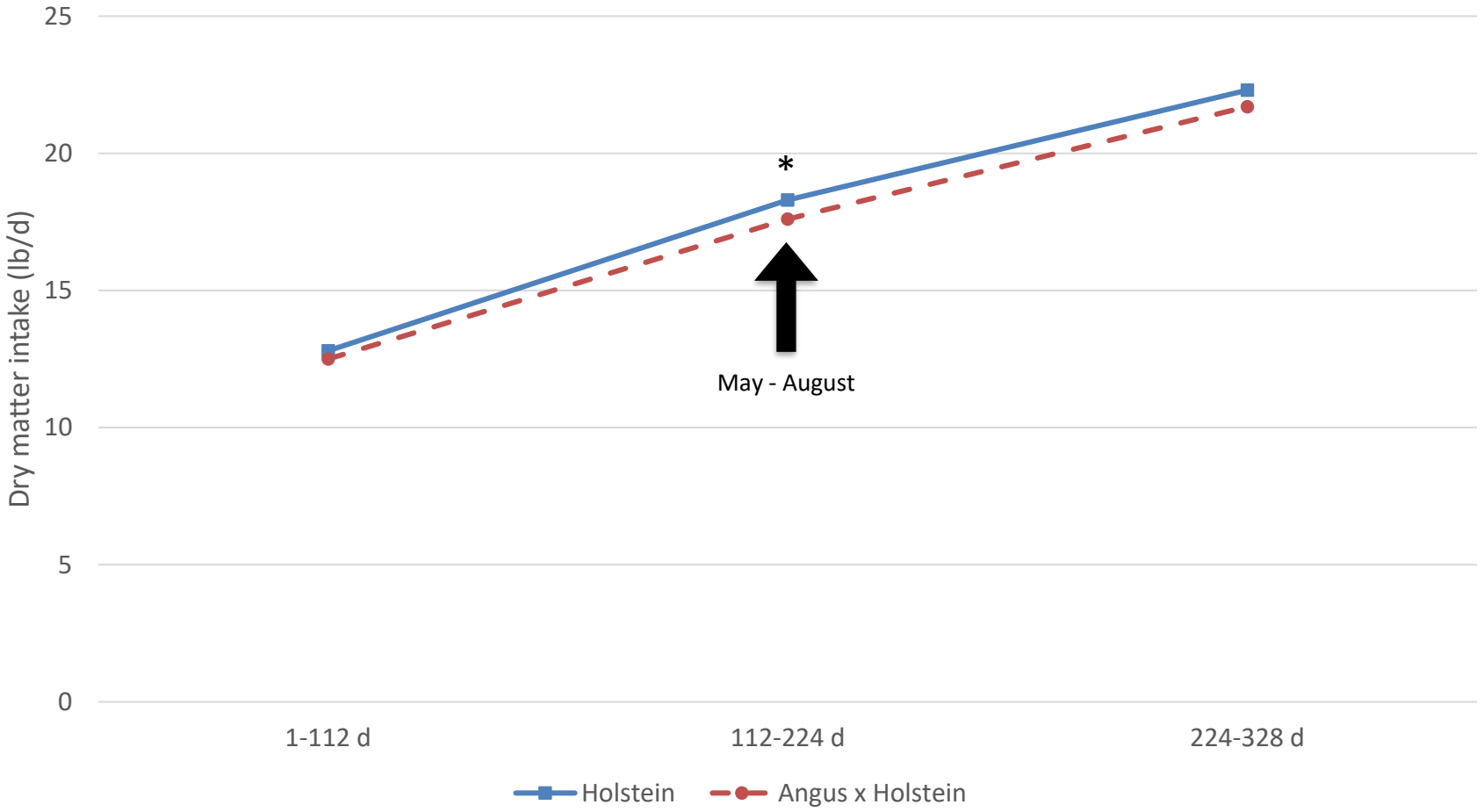


Results - Weight



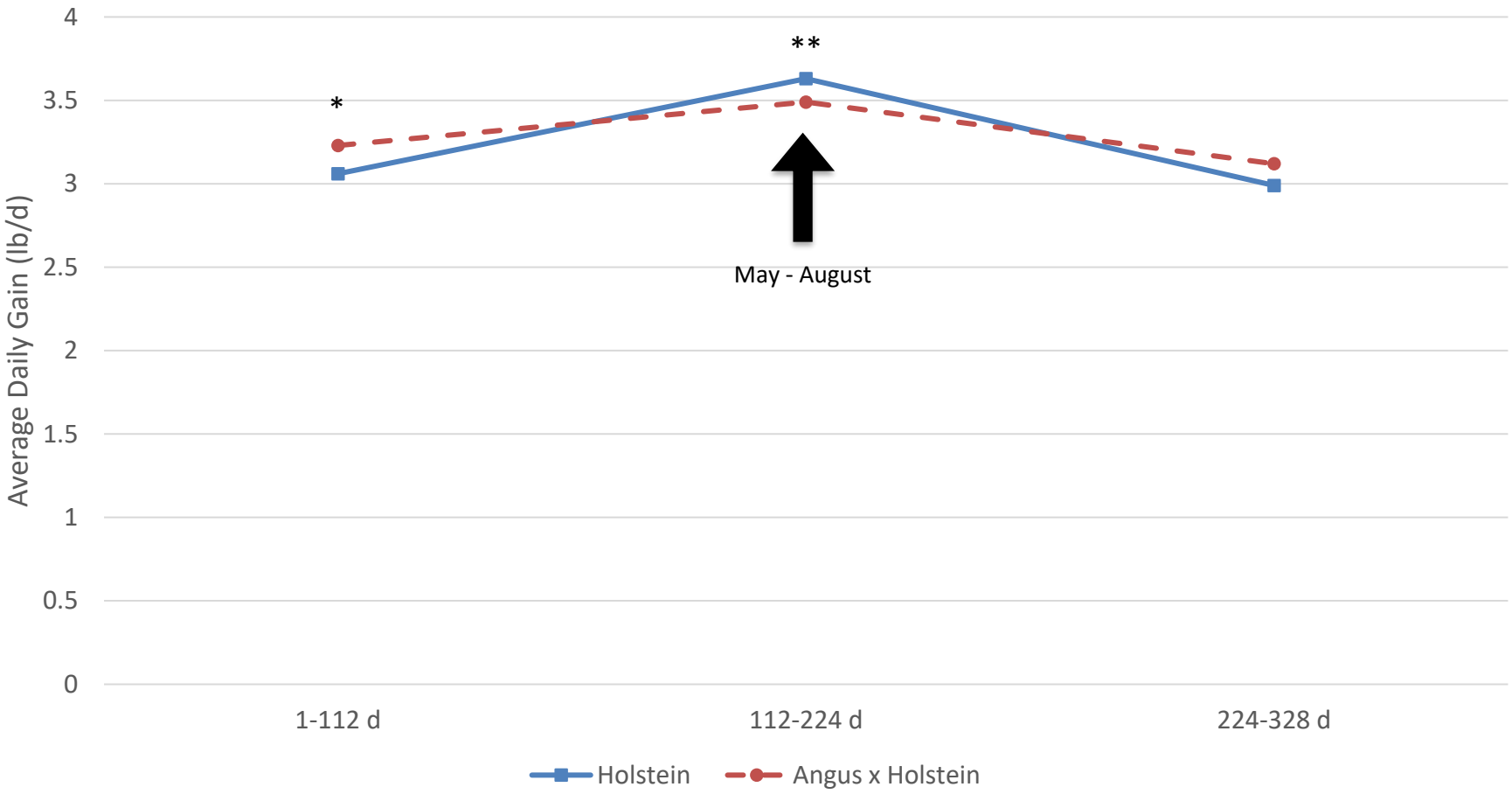
* Statistically different (P ≤ 0.05)

Results – Dry Matter Intake



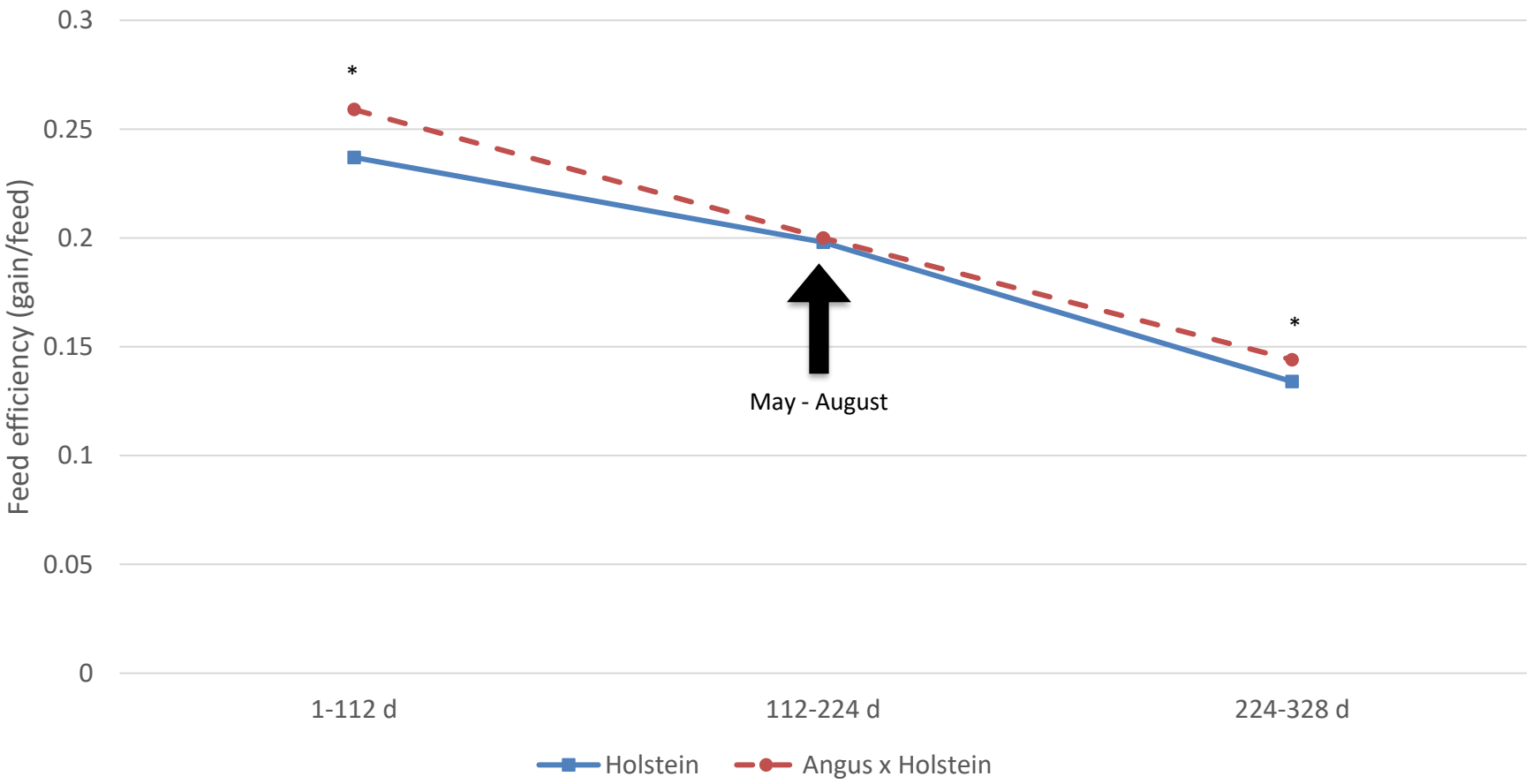
* Statistically different (P ≤ 0.05)

Results – Average Daily Gain



* Statistically different (P ≤ 0.05)
** Tended to be different (P ≤ 0.10)

Results – Feed Efficiency



* Statistically different (P ≤ 0.05)

Results – Overall Performance

	Holstein	Angus-Holstein
Feedlot growth performance		
Final weight (lbs)	1346	1364
Average daily gain (lbs/d)	3.23	3.28
Dry matter intake (lbs/d) ‡	17.7	17.1
Gain to feed ratio‡	0.182	0.192
Health		
Liver abscess (%)	5.0	2.5
Pinkeye (%)	12.5	23.3
Morbidity (%)	6.3	7.5

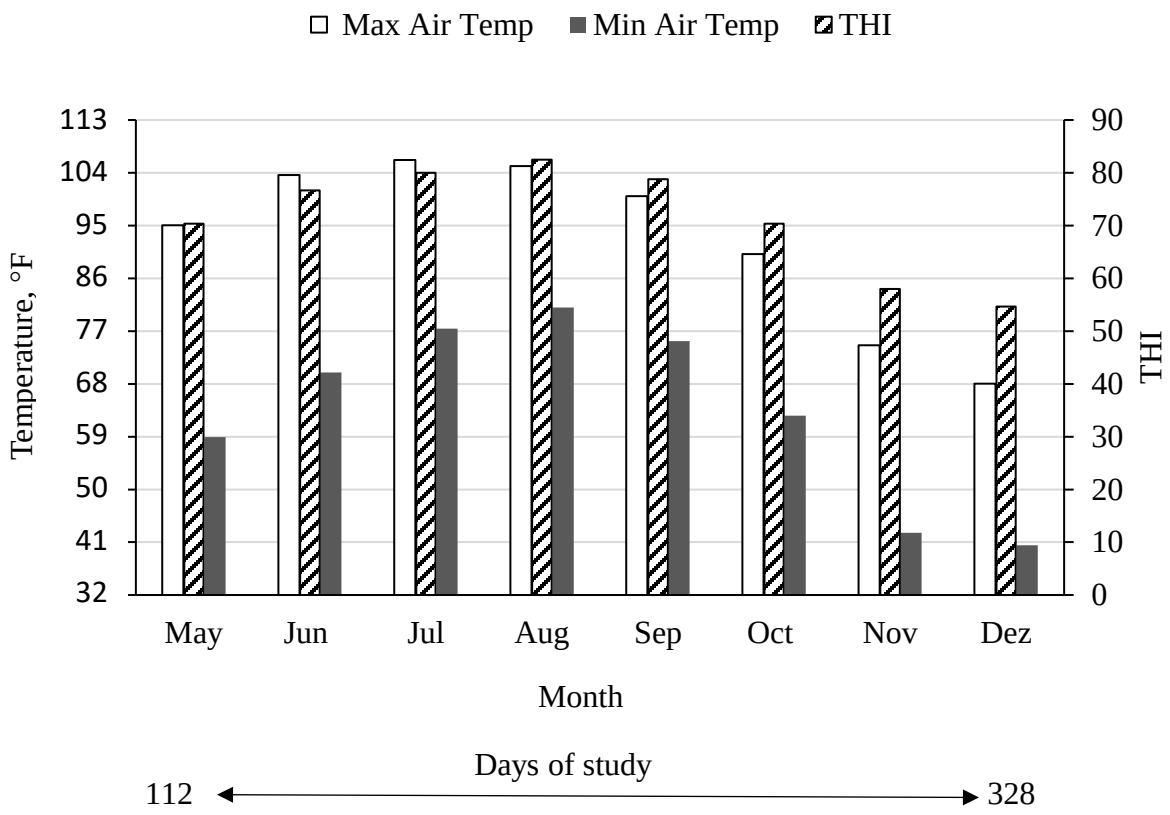
‡ Denotes statistical differences (P ≤ 0.05) between breeds

Results – Carcass Characteristics

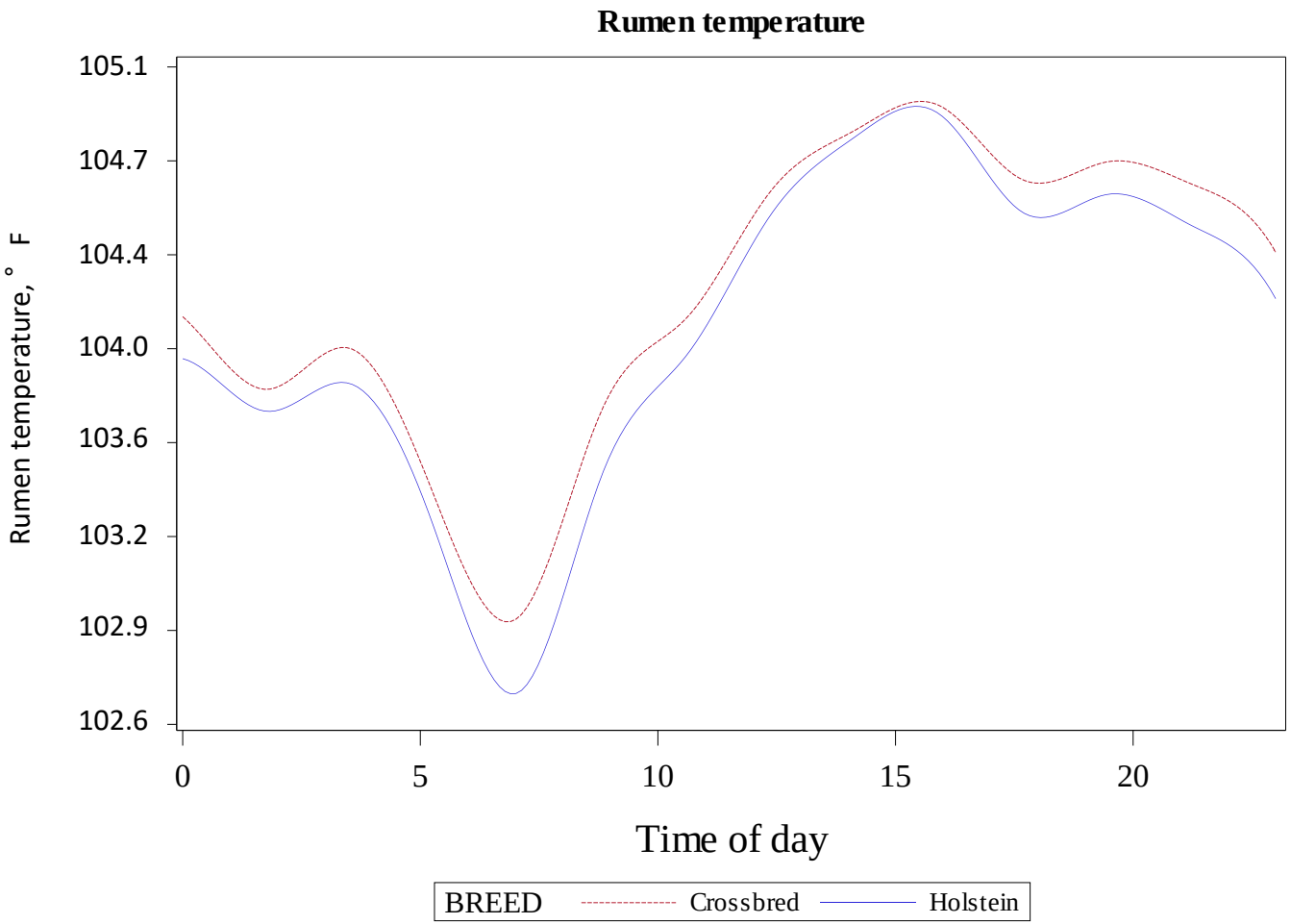
	Holstein	Angus-Holstein
Carcass characteristics		
Hot carcass weight (lbs) ‡	825	850
Dressing percentage‡	61.4	62.3
KPH, % ‡	3.22	3.43
Back fat thickness (in) ‡	0.22	0.35
Ribeye area (in^2) ‡	12.3	13.5
Marbling score‡	4.5	5.4
Calculated yield grade	2.89	2.99

‡ Denotes statistical differences (P ≤ 0.05) between breeds

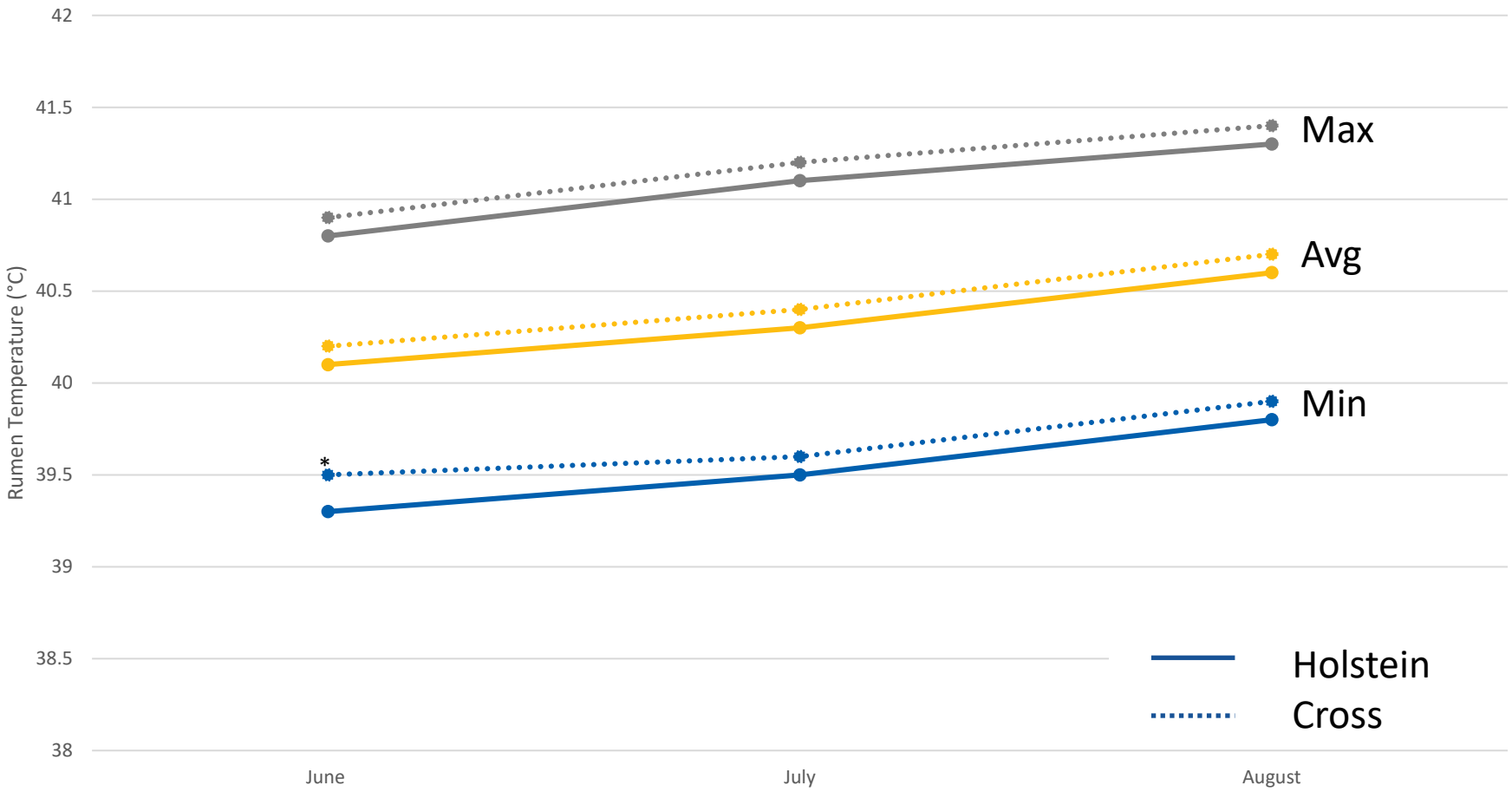
Results – Ambient Temperature



Results – Rumen Temperature



Results – Rumen Temperature



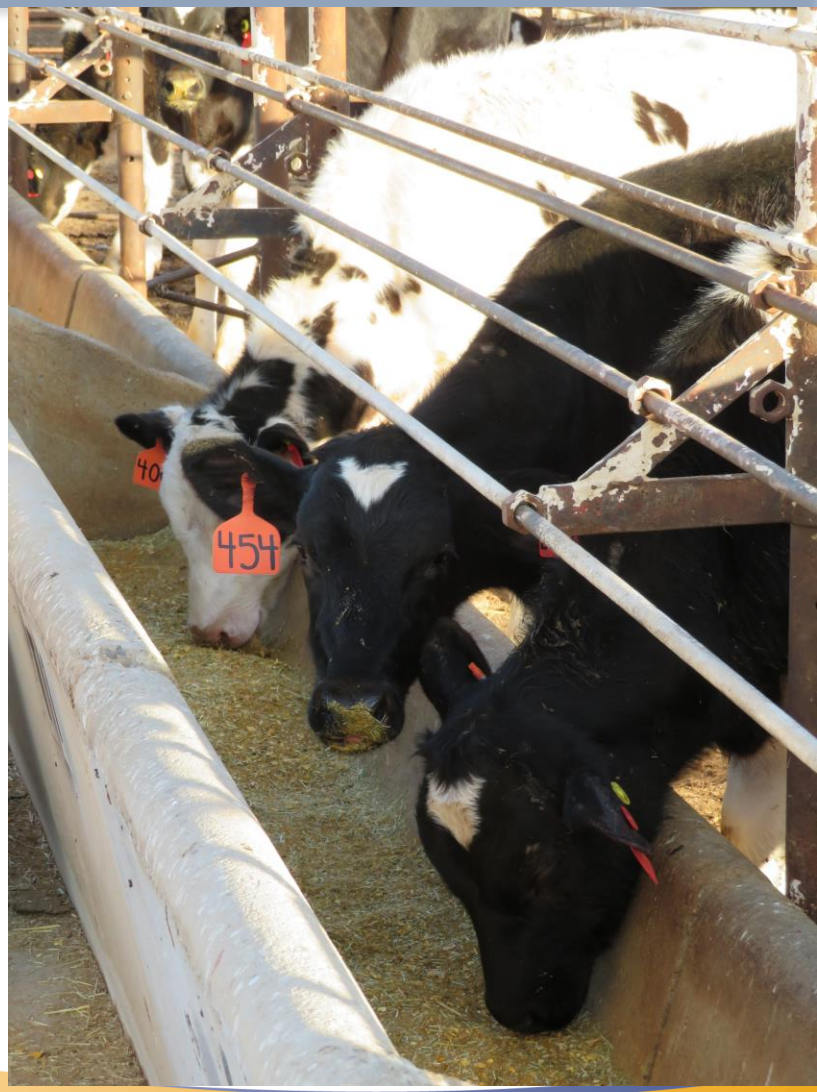
* Statistically different (P ≤ 0.05)

Beef x Dairy Finished Steers

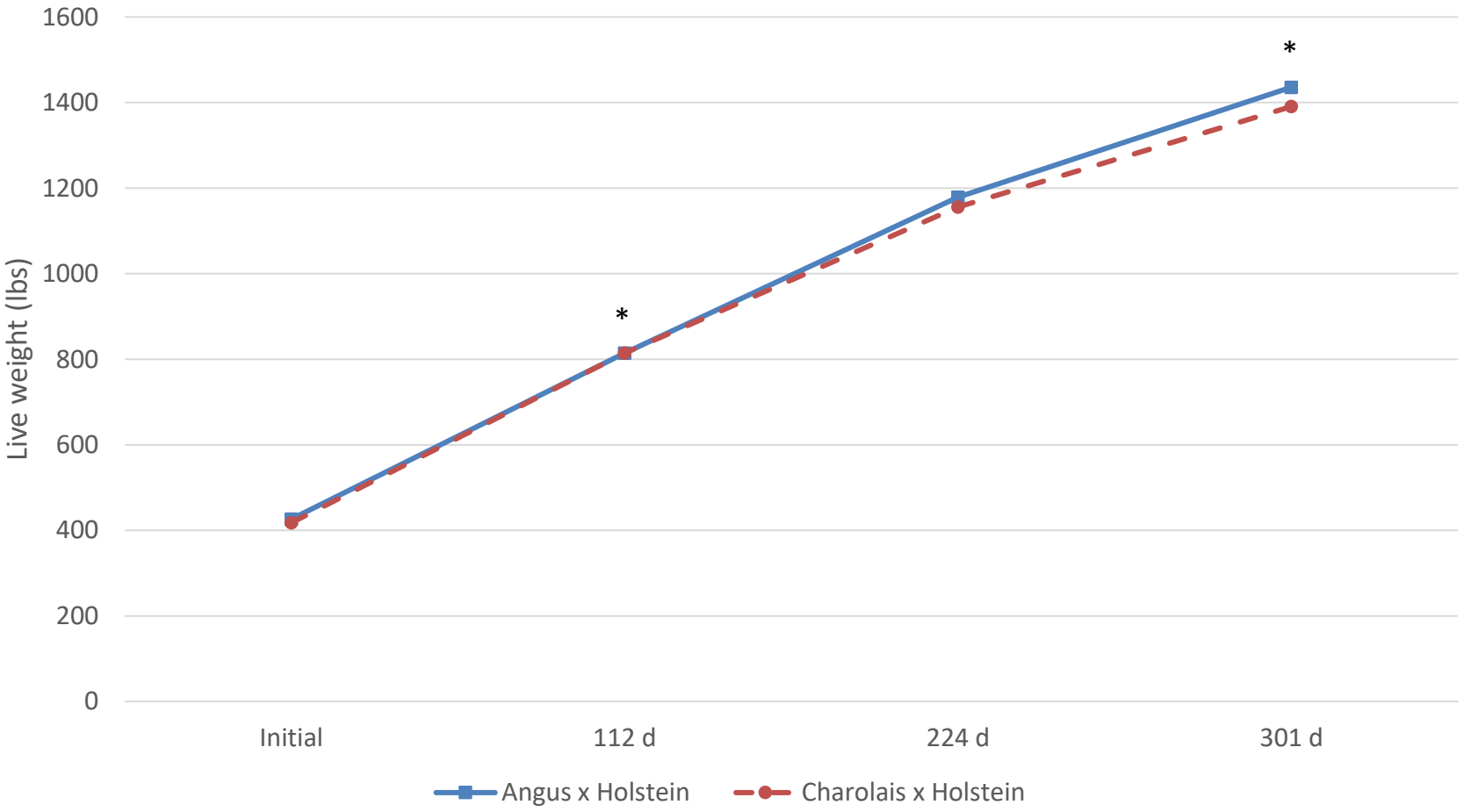
Angus-Holstein vs Charolais-Holstein

Research Methods

- Conducted at the UC ANR Desert Research and Extension Center in Holtville, CA
- 60 crossbred Angus-Holstein steers (422 lb)
- 60 crossbred Charolais-Holstein steers (414 lb)
- Sorted by weight and breed into 30 pens (4 animals/pen)
- Steam-flaked corn-based diet
- Same management
- Harvested and collected carcass data on day 301



Results - Weight



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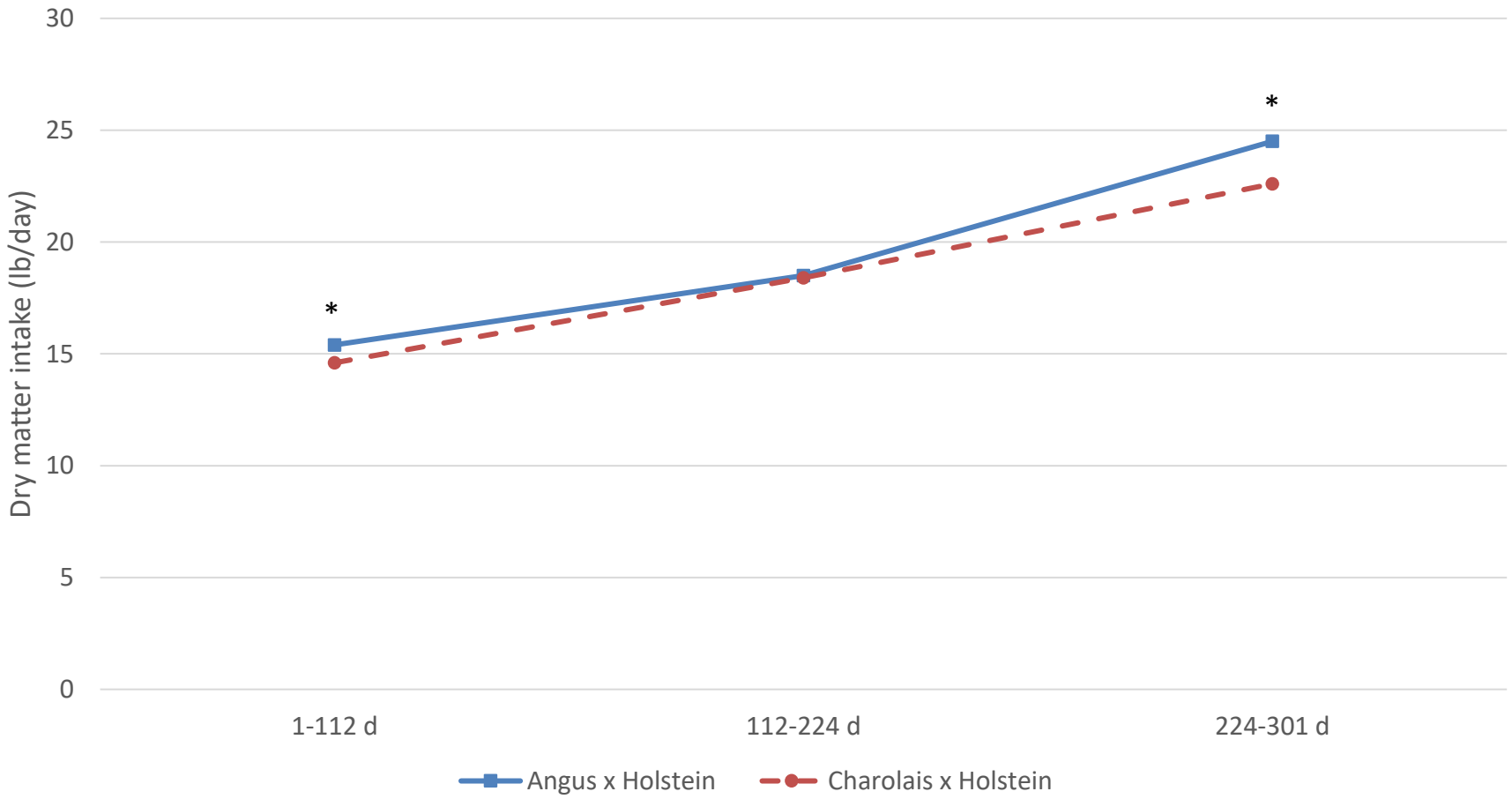
Results – Dry Matter Intake



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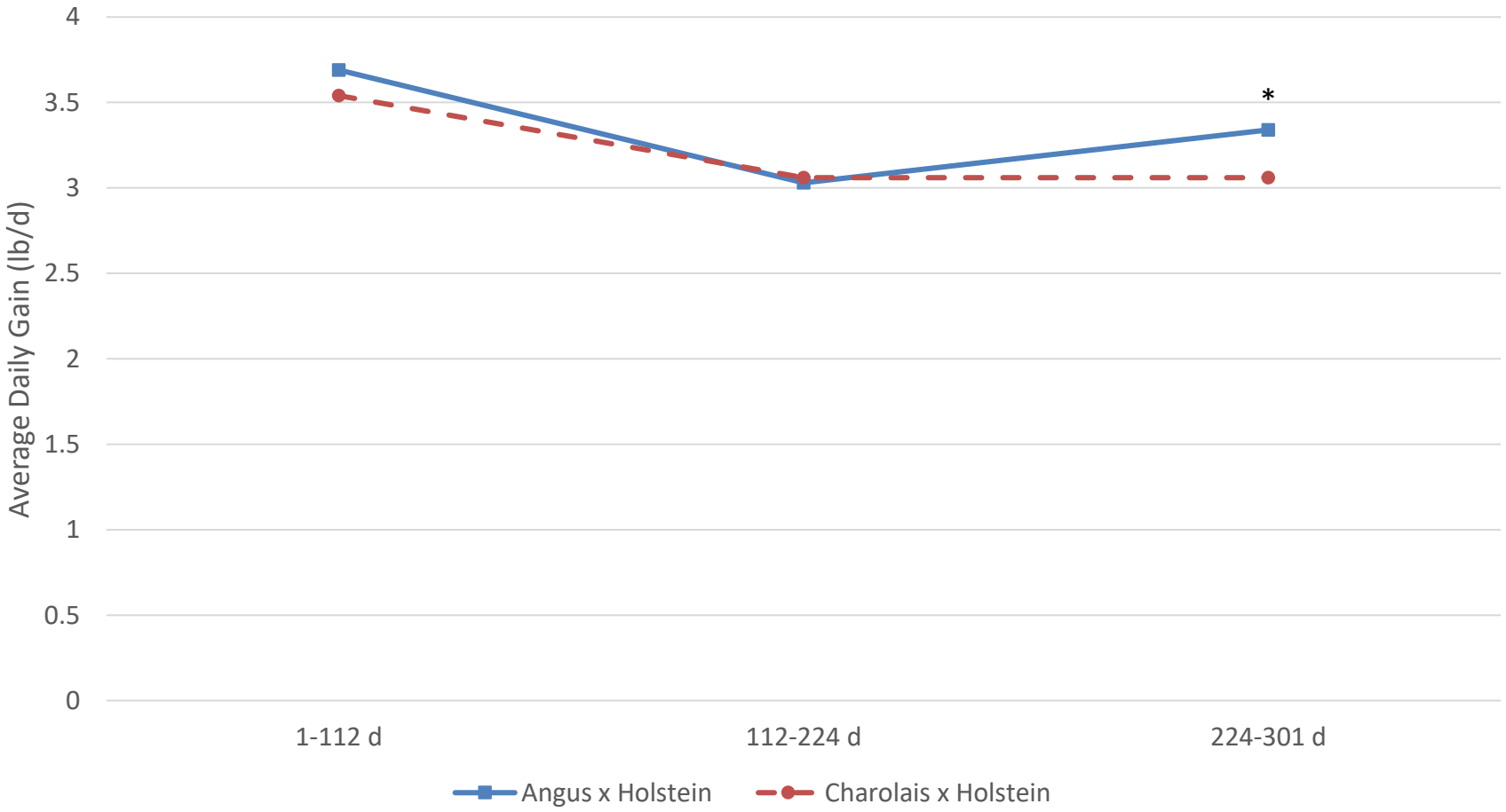
Results – Average Daily Gain



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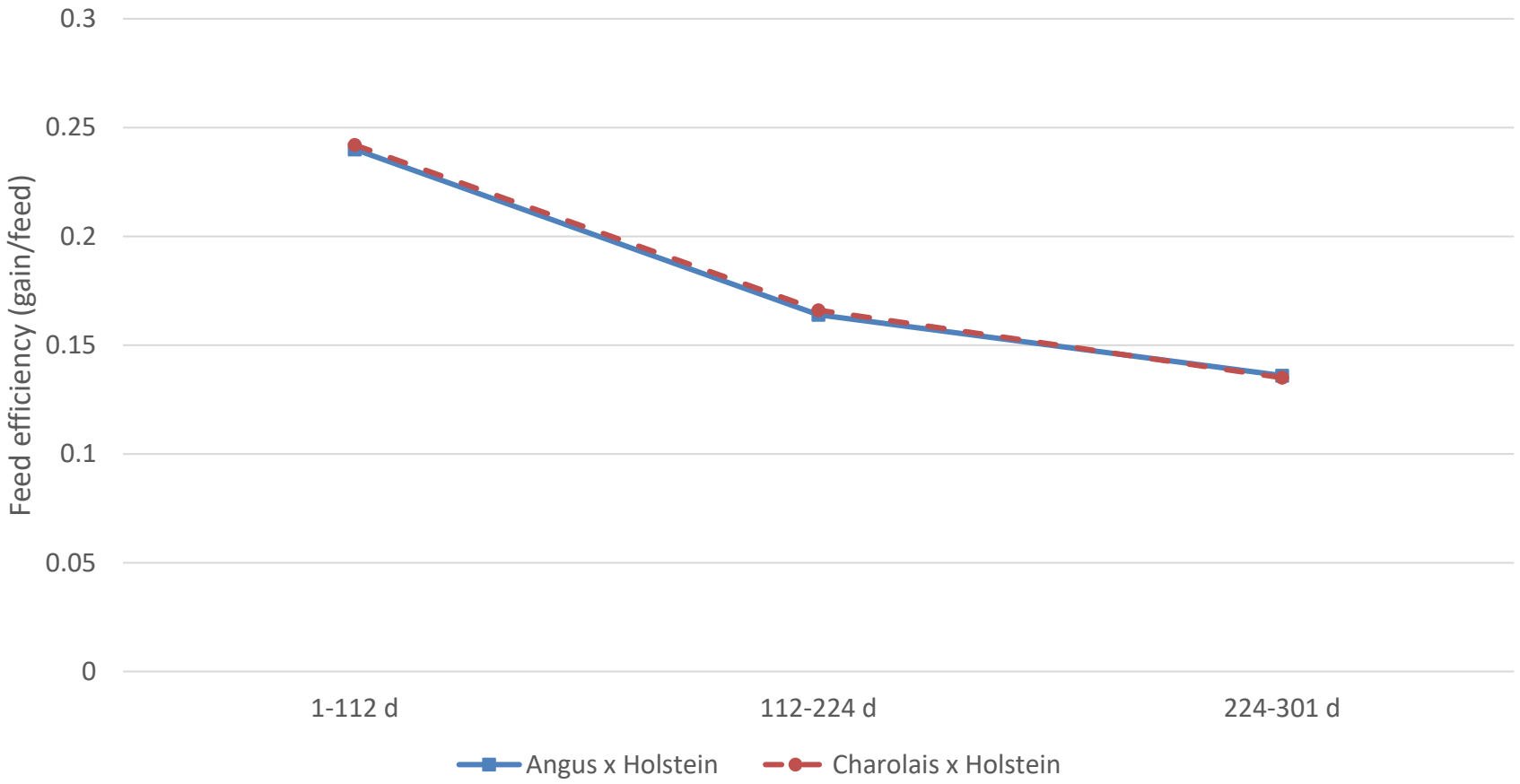
Results – Feed Efficiency



Results – Overall Performance

	Angus-Holstein	Charolais-Holstein
Feedlot growth performance		
Final weight (lbs) ‡	1436	1391
Average daily gain (lbs/d)	3.34	3.23
Dry matter intake (lbs/d) ‡	18.9	18.1
Gain to feed ratio	0.178	0.179
Health		
Liver abscess (%)	20.8	20.1
Pinkeye (%)	12.5	6.25
Morbidity (%)	4.17	2.08

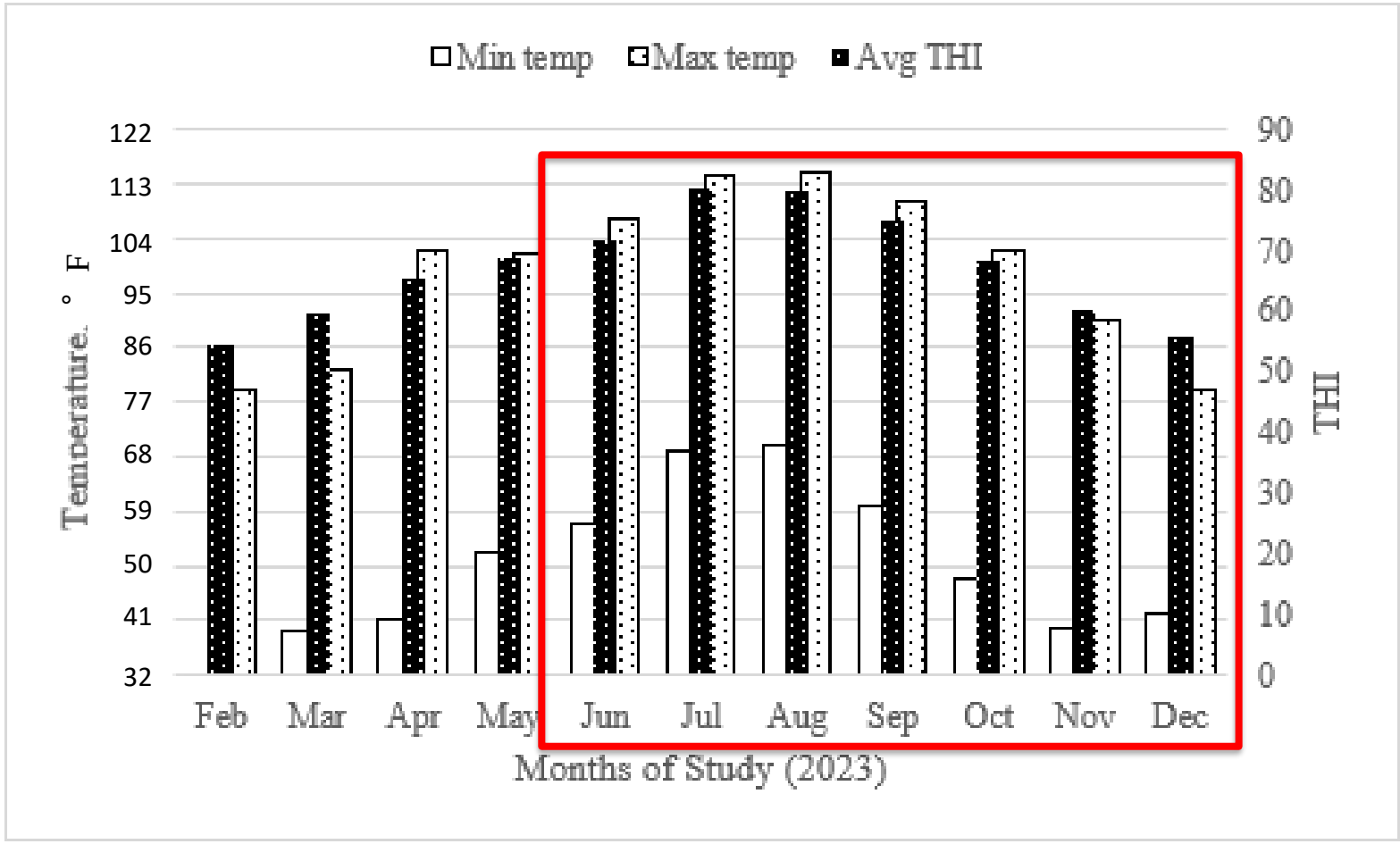
‡ Denotes statistical differences (P ≤ 0.05) between breeds

Results – Carcass Characteristics

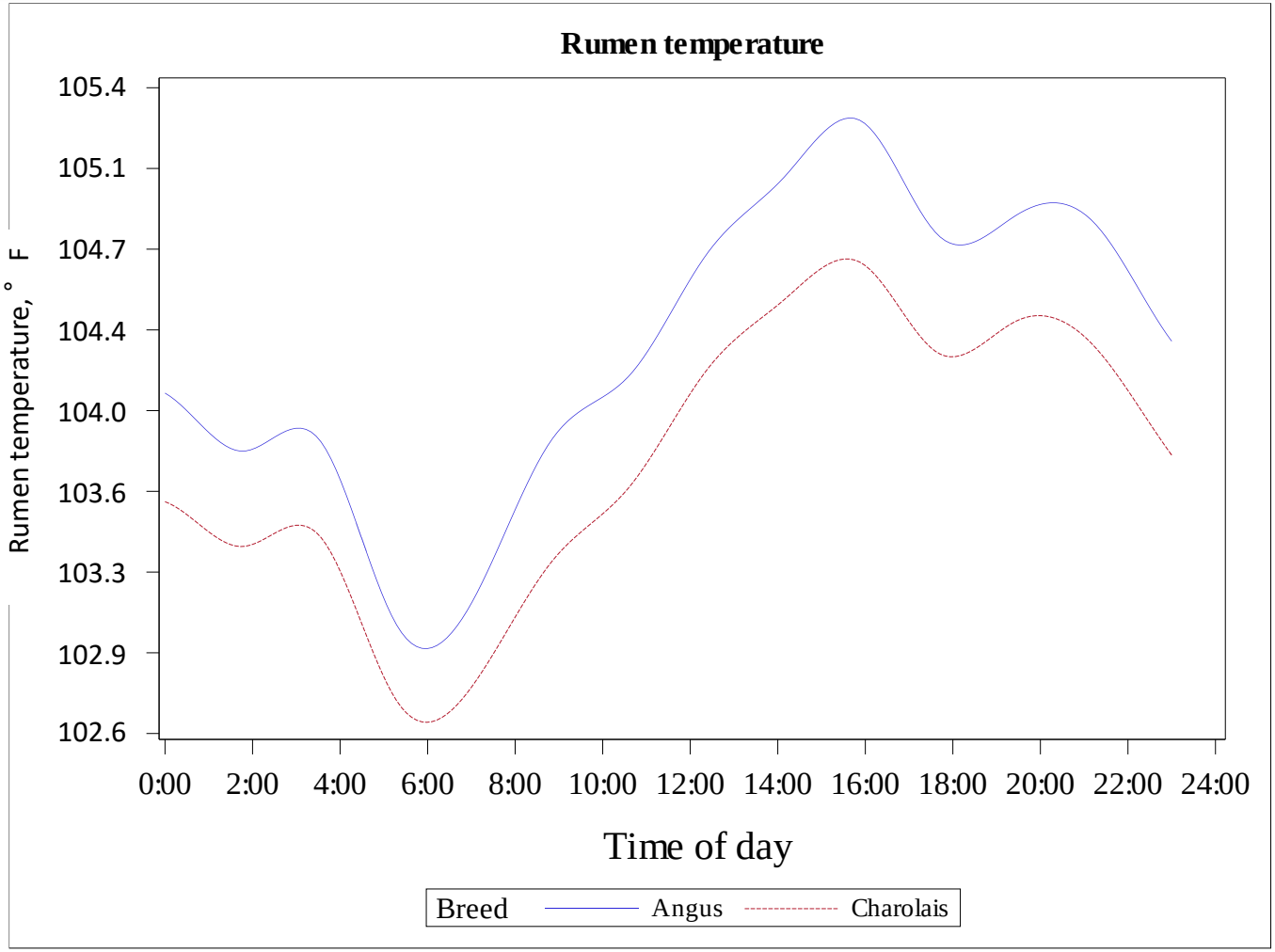
	Angus -Holstein	Charolais-Holstein
Carcass characteristics		
Hot carcass weight (lbs)	910	887
Dressing percentage	63.4	63.8
KPH, % ‡	3.33	3.12
Back fat thickness (in) ‡	0.48	0.40
Ribeye area (in^2) ‡	13.5	14.2
Marbling score‡	5.2	4.8
Calculated yield grade‡	3.5	3.0

‡ Denotes statistical differences (P ≤ 0.05) between breeds

Results – Ambient Temperature



Results – Rumen Temperature



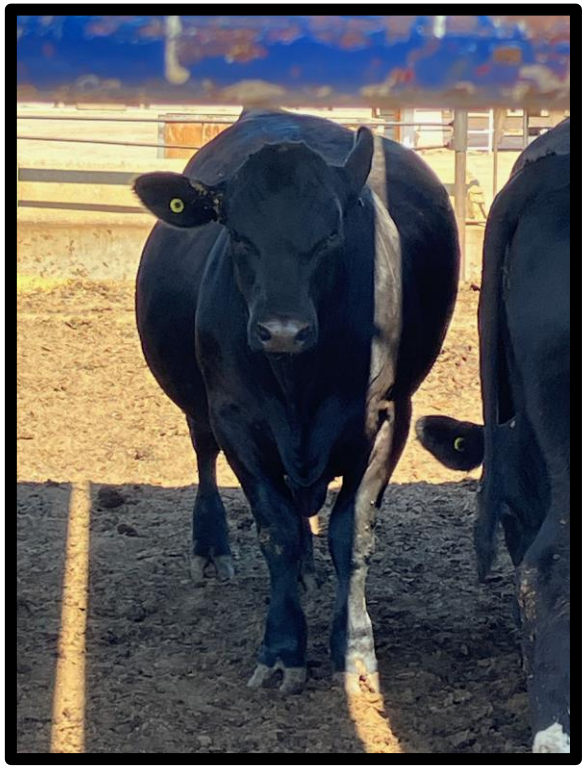
Take Home Message

- Compared to purebred Holstein, Angus cross:
  - ↓ Dry matter intake
  - ↑ Feed efficiency
  - ↑ Hot carcass weight
  - ↑ Dressing percentage
  - ↑ KPH
  - ↑ Backfat
  - ↑ Marbling score
  - ↑ Ribeye area
- Compared to Charolais-Holstein cross, Angus-Holstein cross:
  - ↓ Ribeye area
  - ↑ Final body weight
  - ↑ Dry matter intake
  - ↑ Average daily gain
  - ↑ Back fat
  - ↑ KPH
  - ↑ Marbling score
  - ↑ Calculated yield grade

Angus cross seemed more affected by the heat in the summer

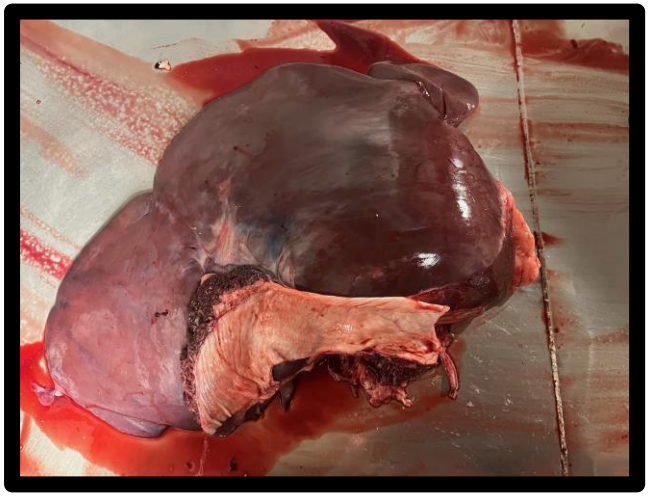
Digestive Issues

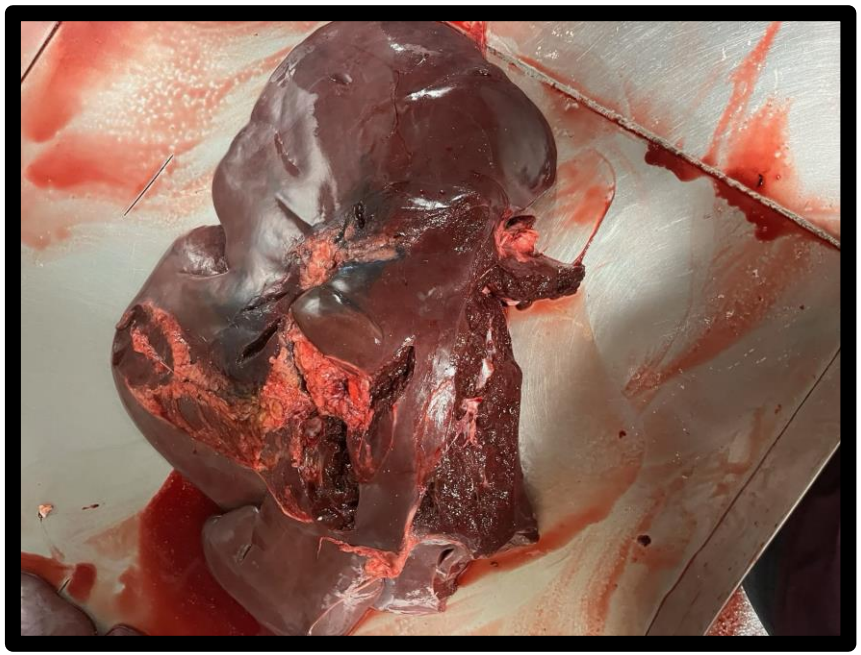
- Higher incidence of digestive issues, particularly early on
- Receiving diet: 24-28% forage for the first 1-2 weeks
- Drop to a typical high energy diet (12% forage)



Liver Abscess

- Anecdotally high liver abscess incidence for crossbred cattle
- We have seen an increase in liver abscess incidence
  - 2022 – 2.5%
  - 2023 – 20%
  - 2024 – 34%
- Why is this happening?





Pc: Sydney Bowman-Schnug, Colorado State University

More questions!

- Sire variability
- Other breeds
- Heat stress management
- Technologies (i.e. implants)
- Quality programs
- Liver abs
- Early ma

We need more data!

Want more crossbred dairy information?

- Podcast
  - 84+ episodes
  - Many covering feeding out crossbred beef x dairy
- Newsletter
  - 22+ newsletters with several articles per newsletter
  - Covers the same information as the podcast

Questions?

Contact:
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