

Comparing meat quality and muscle biochemical traits between entire male and surgically castrated pigs

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Rationale

Raising entire males (EM) instead of surgical castrates (SC) offers several economic advantages due to their better feed conversion and leaner carcasses, although indications of inferior meat quality in EM also exist. The aim of our study was to explain differences in meat quality between EM and SC.

Conclusions

Compared to SC, EM exhibited inferior meat quality:

- ✓ tougher meat,
- ✓ inferior water holding capacity,
- ✓ lower IMF content,
- ✓ increased protein oxidation and
- ✓ higher collagen content.



Material and Methods

Animals

- 24 pigs (12 EM and 12 SC) of Landrace x Large White breed
- slaughtered at weight of 132 ± 7.7 kg and age of 198 ± 4 days

Measurements

- carcass weight, backfat and muscle thickness
- sampling *longissimus dorsi* muscle
- meat chemical traits:
 - ✓ intramuscular fat (IMF)
 - ✓ carbonyl groups
 - ✓ collagen
- meat quality traits:
 - ✓ drip loss, thawing loss, cooking loss
 - ✓ shear force
 - ✓ L*a*b* colour traits
 - ✓ ultimate pH



Figure 1: Drip loss, shear force and colour measurements

Results

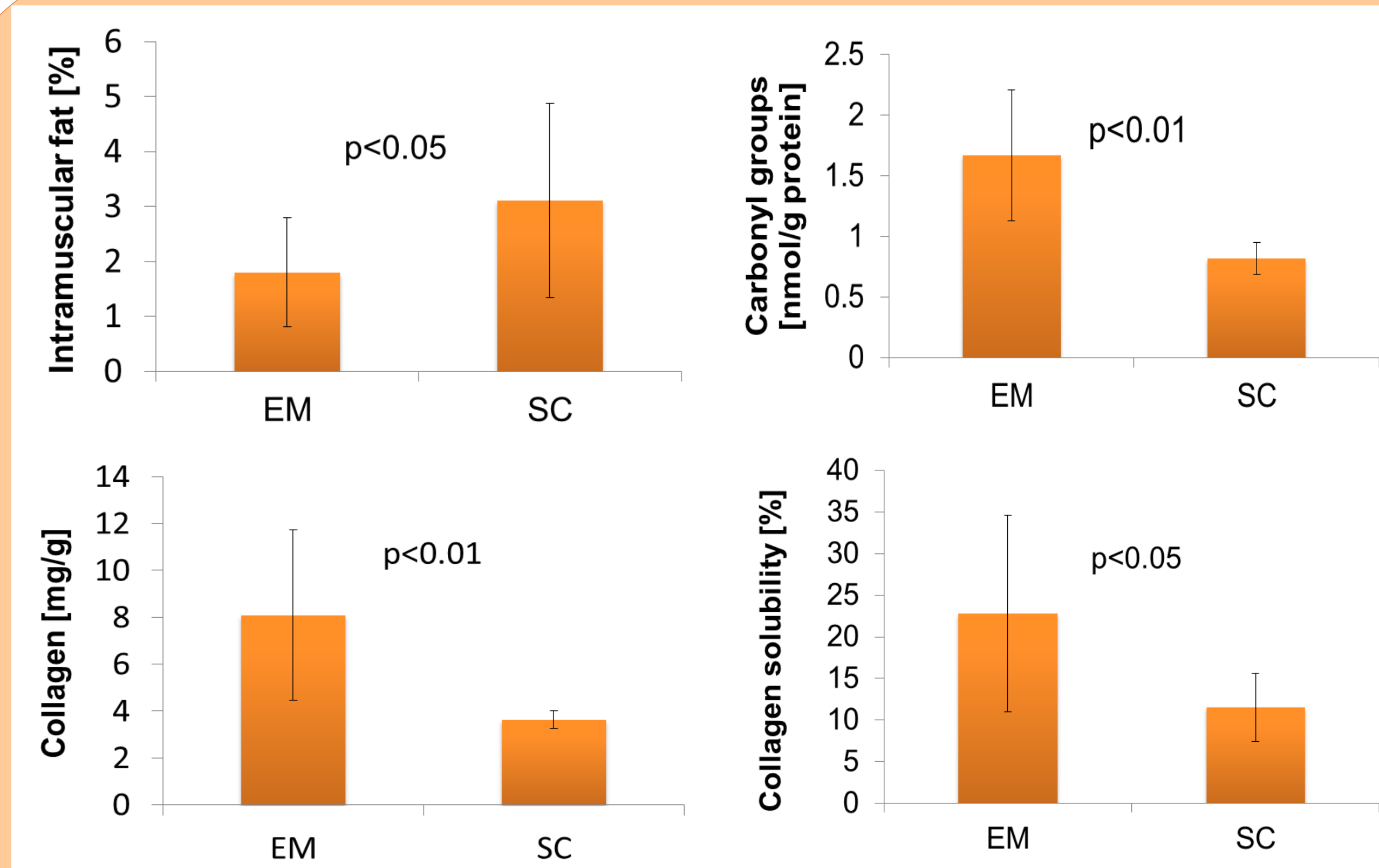


Figure 2: Differences in muscle biochemical traits between entire males (EM) and surgical castrates (SC).

Carcass traits

- Dressing yield: EM < SC
- Backfat thickness: EM < SC
- Muscle thickness: EM < SC



Meat colour (EM vs. SC):

- ✓ higher L* (lightness)
- ✓ higher b* (yellowness)
- ✓ lower a* (redness)

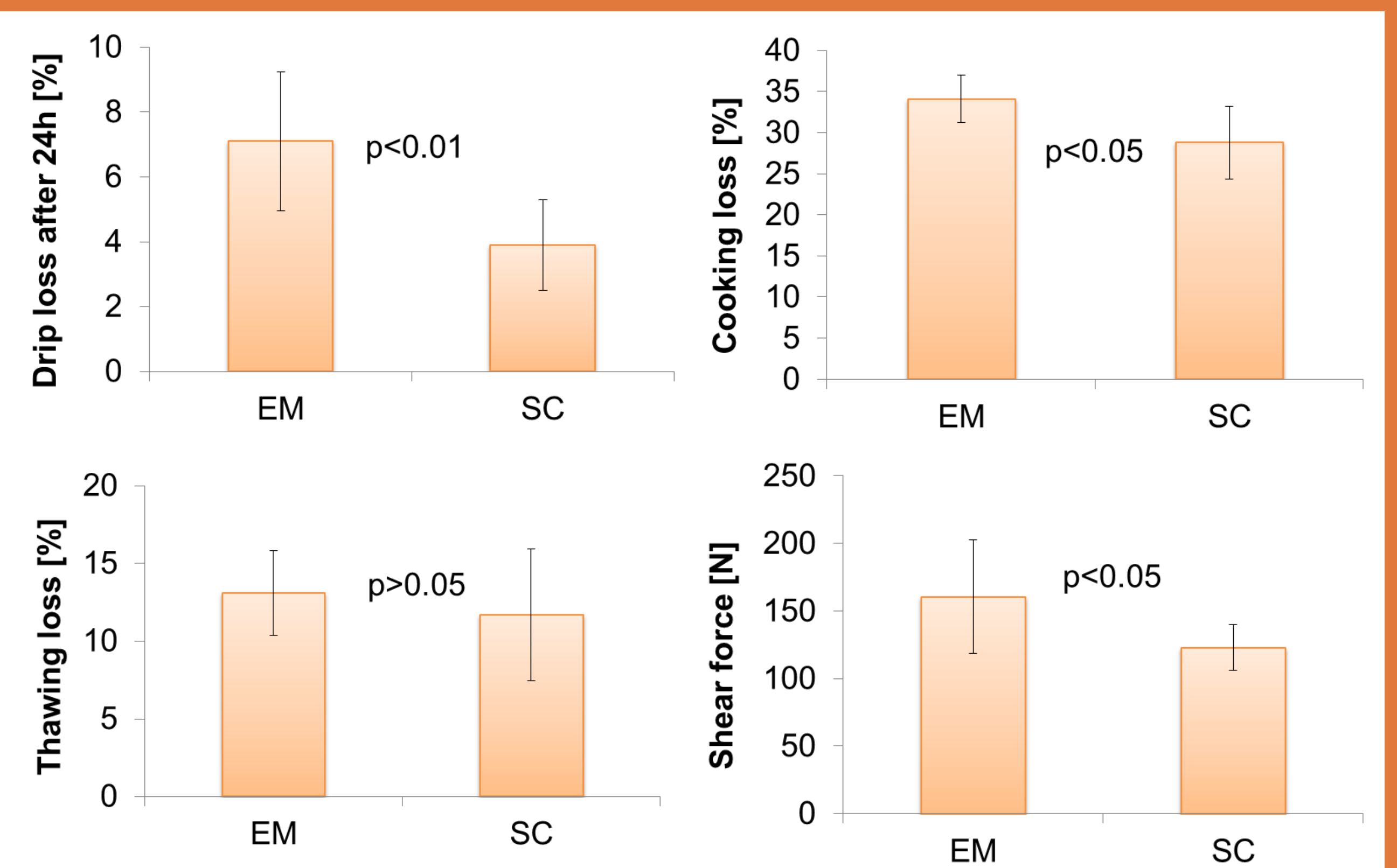


Figure 3: Differences in meat quality traits between entire males (EM) and surgical castrates (SC)

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