

Meat Chemistry and Cuisine: Climate Smart Marketing of Small Ruminants Using a Mobile Processing System

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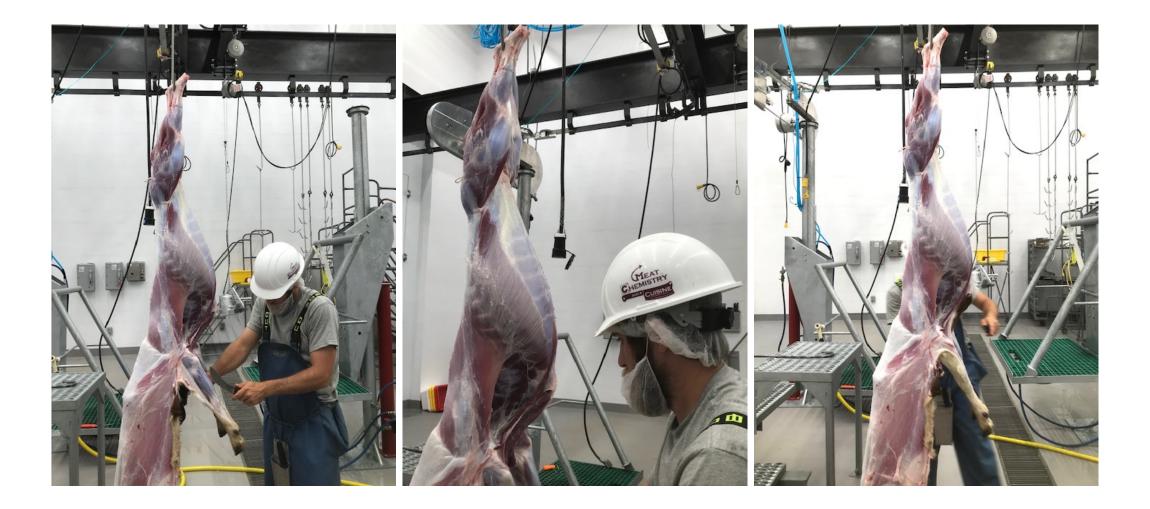
# Steps involved in humane harvest: Stun to Stamp

| Feed<br>Withdrawal | Arrival,<br>Unloading and<br>Lairage  | Antemortem<br>Inspection                 | Restraint    |
|--------------------|---------------------------------------|--|--------------|
| Stunning           | Exsanguination                        | Head, Hide,<br>and Foot<br>removal       | Evisceration |
| Trimming           | Carcass Wash<br>and<br>Antimicrobial* | Postmortem<br>Inspection and<br>Stamping | Chilling     |

## Arrival from Farm and Humane Harvest under Federal Inspection



#### Hide Removal



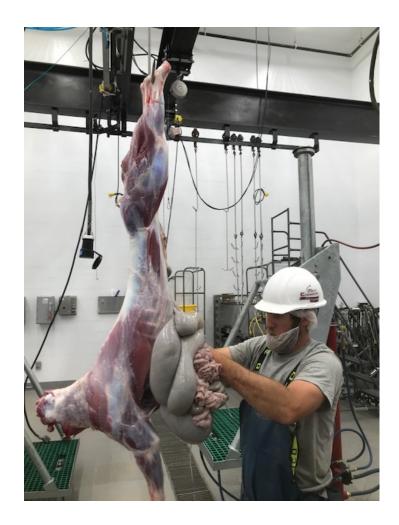
## Waste not, want not: Hyde's can be tanned to generate additional revenue!!! (Otherwise, offal)

- Improve sustainability and profitability
- Reduce Waste
- Support accessory industries
- Only Problem is finding a tannery

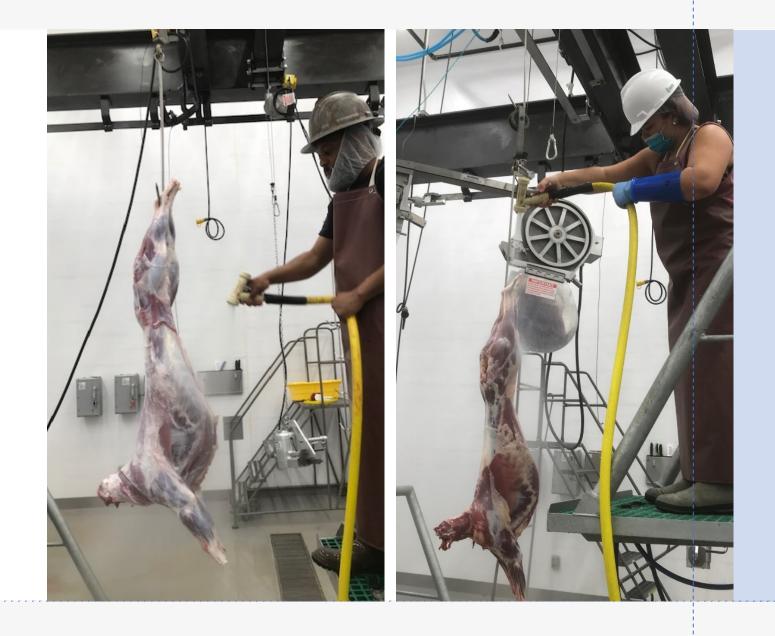


Evisceration: Removal of GI tract and Internal Organs





## Carcass Washdown: 180<sup>0</sup> F





#### Finally, The Hot Carcass

- This is your "hanging weight"
- At this point the losses from the live weight include:
  - Blood
  - Feet
  - Hyde
  - Head
  - Viscera
  - Any additional Trim\*\*\*

## Meat Science and Muscle Biology Lab at Mississippi State University



- 18,000 sq. ft. USDA Inspected Red Meat Processing Facility
- 1500 sq. ft. Harvest Floor (Beef, Pork, Lamb, Goat)
- "Glassroom" viewing room, Commercial Smokehouse, Pilot kitchen
- Equipped for Virtual Teaching, Extension and Outreach
- Commissioned July 13, 2018

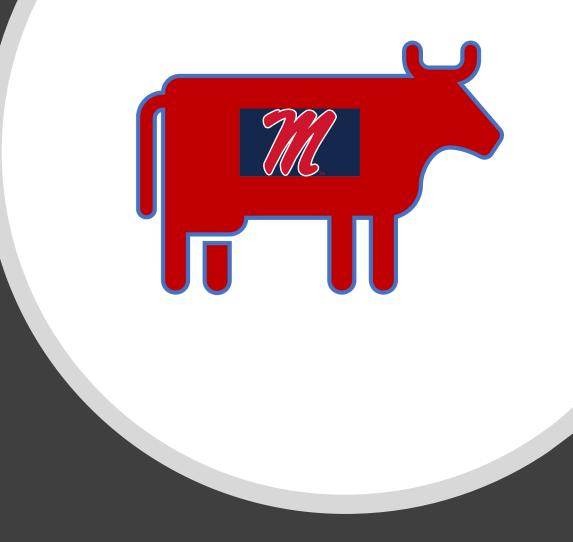


#### Mobile Processing Units

- Ideal for small ruminants
  - Reduced aging
  - Smaller Size
  - Rapid Cooling
  - Easy Fabrication
- Closer to the farm
- Reduced Environmental footprint?
- Direct Marketing for Producers

#### Use of a Mobile Processing Unit to Harvest Beef >1200lbs

- Duration: 3 hours
- Major Issues:
  - Size (length) of the animal relative to the trailer height
  - Transferring from hoist to rail
  - Splitting carcass (proximity to sink)
  - Length of finished carcass vs. floor clearance
  - Tracking of Mud, etc. into unit



## Landing Carcass on Cradle

- Beef carcass was longer than trailer height
- Required a tractor with a bucket to hoist carcass onto cradle
- Will raise USDA flags



#### Carcass Landing on Cradle

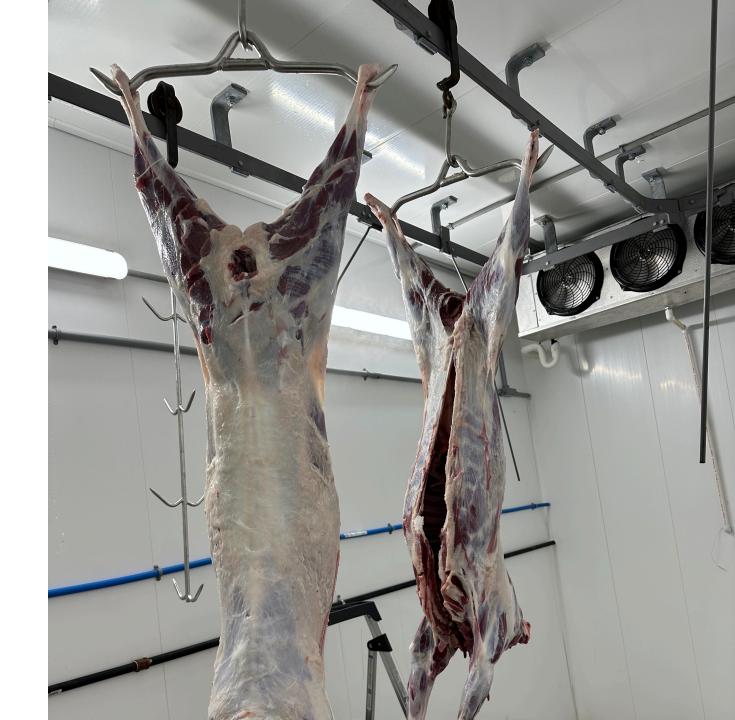




#### Skinning and Splitting the Breastbone

#### Goats hanging in MPU

- Unit can hold about 18 goats at a time
- Reduced cleaning costs
- Reduced cooling costs
- Can harvest about 24 goats in 4 hours



### Legacy of Outreach

- Geographic and Cultural Proximity
- Experiential Credibility
- Meeting Producers and Processors Where they Are
- "Lifting the Veil"



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