



Overnight Lairage May Impact Pork Quality

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Providing market pigs rest prior to harvest, or lairage, may impact pork quality, but the effects are not always consistent. The relative impact of lairage on pork quality is dependent upon multiple transport, handling, and environmental conditions that may be unique to individual harvesting facilities. The impact of overnight lairage on carcass characteristics of pigs raised in bedded hoop barns was evaluated in August 2021.

Materials and Methods

During the summer of 2021, approximately 365 pigs were raised in six pens within the three large hoop barns at the Western Research and Demonstration Farm in Castana, Iowa. Diets and stocking density were consistent across all pens of pigs during grow out. Harvest of animals occurred once a week for three consecutive weeks in August. Each week, pigs were weighed, with the heaviest one-third or half being harvested the first and second week. On the third week all pigs were weighed and harvested.

Each harvest week, pigs were weighed in the morning with slaughter pigs being separated from the pigs remaining on feed. Half of the pigs to be harvested were loaded onto a transport trailer around 1 p.m. and delivered to the harvesting facility approximately two hours later. These pigs were kept in overnight lairage at the processing facility. The other group of pigs to be harvested remained on the farm until 7 a.m. on the date of harvest. These pigs were loaded onto a transport trailer and delivered to the harvesting facility approximately two hours later. Upon delivery these pigs were unloaded into a holding pen. Pigs that were kept overnight at the farm remained in a bedded hoop barn and had access to feed and water. Pigs that were kept overnight at the harvest facility had access to water, but not feed or bedding. On each harvest date, all pigs were harvested and in coolers before 12 p.m. on the same day. Thus, on each harvest date, there were two lairage treatments: half of the pigs were harvested within three hours of delivery to the plant (None), while the other half were harvested within 21 hours of delivery to the plant (Overnight).

On each harvest date, carcass data was collected on all pigs harvested and individual chops from 60 pigs were evaluated for color, marbling, and pH at the plant. Sex of the pig (barrow or gilt) for the 60 chops was balanced across lairage treatment (None or Overnight) so that on each harvest date there were 15 individual sex per lairage observations. The impact of lairage treatment, sex, and harvest date on carcass characteristics are summarized in Tables 1-3.

Table 1. Impact of lairage treatment on pork carcass characteristics.

	Observations	Lairage Treatment ¹		SEM	P -value
		None	Overnight		
Hot carcass weight, lb.	325	221.4	223.2	0.7	0.0620
Last rib back fat, in.	365	1.17	1.10	0.01	0.0029
Chop color	180	2.46	2.42	0.06	0.6200
Marbling	180	2.36	2.31	0.07	0.5599
pH	180	5.66	5.62	0.01	0.0082

¹None = pigs harvested within three hours of delivery to slaughter facility. Overnight = pigs delivered around 3 p.m., and held overnight; pigs harvested within 21 hours of delivery to slaughter facility

Table 2. Impact of sex on pork carcass characteristics.

	Observations	Sex		SEM	P -value
		Barrow	Gilt		
Hot carcass weight, lb.	325	223.2	221.4	0.7	0.0670
Last rib back fat, in.	365	1.15	1.12	0.01	0.0731
Chop color	180	2.41	2.48	0.10	0.3576
Marbling	180	2.43	2.23	0.07	0.0369
pH	180	5.63	5.65	0.01	0.0359

Table 3. Impact of harvest date on pork carcass characteristics.

	Harvest Date			SEM	P -value
	8/17/21	8/24/21	8/31/21		
Hot carcass weight, lb.	228.7	221.7	216.6	0.8	< 0.001
Last rib back fat, in.	1.16	1.12	1.12	0.00	0.1175
Chop color	2.75	2.46	2.12	0.07	< 0.001
Marbling	2.65	2.47	1.88	0.07	< 0.001
pH	5.65	5.64	5.63	0.01	0.3056

Summary

Holding pigs overnight at the slaughterhouse prior to harvest did not impact chop color or marbling. Pigs delivered to the slaughter facility on the morning of harvest resulted in carcasses with more backfat, and chops from those pigs had a higher pH, although differences were numerically small (Table 1). Barrows tended to be larger with more back fat at harvest than gilts. Barrows had greater marbling, but lower pH compared with gilts. Pigs harvested in the first group had larger carcasses with more marbling, and darker colored chops.