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## DENTAL DISEASE IN SOWS: EARLY FINDINGS

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We examined heads of sows at two large abattoirs slaughtering sows from Midwestern and Southeastern states and Canada.

Heads were graded on incisor wear and loss and molar wear (0-4; 3-4 considered "significant"); tartar/(presumptive) gingivitis (0-3; 2-3 "significant")--↑ score = ↑ severity. Visible abscessation/presence of cheek/lip abrasion/laceration were noted, age (tooth-eruption pattern) assessed. Around 85% of culled sows had one or more "significant" lesion(s) (abnormalities presumed to cause pain or local tissue reaction) (Table 1).

Table 1--Prevalence (%) of significant dental lesions in mature sows at slaughter (n=82)

Dental lesion	%	sem
Molar wear	63	5.4
Incisor wear	62	5.4
Incisor loss	34	5.3
≥One of above	85	3.9
Gingivitis	55	5.5
Retained deciduous incisor	15	3.9
Abscessation	4	2.1

Retention of ≥1 deciduous incisor(s) occurred in ~15% of mature sows (Table 1). Often a tooth projects at abnormal angle, ↑ its vulnerability to periodontal disease/breakage.

Significant tartar/gingivitis was observed in >50% of culled sows, associated with gumline recession/root exposure (especially molars), often with abscessation and tooth loss (Table 1).

Other problems (total prevalence ~4%): foreign bodies (hair, herbage) between teeth or tooth and gum; abraded, lacerated, ulcerated gums, lips, cheeks; malocclusion. Some lacerated gums/cheeks were associated with broken/sharp/jagged incisors and molars having sharp lateral edges. Abscessation occurred in periodontal pockets.

Malocclusion apparently results from brachygnathia or rostral distortion due to atrophic rhinitis or genetic factors.

As expected, mature sows had higher lesion prevalence than did immature ones (Table 2).

Table 2--Effect of age on prevalence (%) of significant dental lesions in sows

	Immature (n=32)	Mature (n=82)	p
Dental lesion			
Molar wear	9	63	<.01
Incisor wear	16	62	<.01
Incisor loss	31	34	.77
≥One of above	41	85	<.01

Specimens representing "normal" condition or various lesions were photographed and processed for histopathologic examination. Abscesses yielded *Arcanobacterium pyogenes*, *Bacteroides spp.*, and *Fusobacterium spp.*

We also studied live sows in 2 herds (A and B) at 3 farms (2 indoor [A<sub>I</sub>, B<sub>I</sub>], 1 out- [B<sub>O</sub>]). Herd B kept sows (same genetics) inside (B<sub>I</sub>, farm 2) and out- (B<sub>O</sub>, farm 3). There were marked differences between indoor and outdoor sows. For example, in Herd B<sub>O</sub> incisor damage/wear was minimal/nil even at parity 9 (Table 3).

Table 3  
Prevalence (%) of dental lesions in live sows.

	Herd A <sub>I</sub> (n=53)	Herd B <sub>I</sub> (n=20)	Herd B <sub>O</sub> (n=25)	sem
Dental lesion				
Molar wear	13	55	23	4.3
Incisor wear	32	85	0	4.8
Incisor loss	40	5	12	4.4
≥One of above	53	85	31	5.0

Broken/worn teeth are painful as evidenced by reactions to probing. Such sows often lost weight and were soon culled.

Significant molar wear primarily involved P<sub>4</sub> and M<sub>1</sub> (first to erupt, 5-6 mo). Some suggest that such wear is due to bar-biting. But observations of confined sows without access to horizontal bars and outdoor sows with no bars indicate that P<sub>4</sub>/M<sub>1</sub> wear is instead time-related.

Dental disease probably has negative impact on sow well-being, nutritional status, performance, and longevity. Work is planned to more fully understand the postulated multifactorial causation of the several serious conditions and to devise preventive and remedial ways and means.