Monitoring injection site lesions in Canadian yearling cattle and cull cows and bulls: Spring 1998

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Abstract — Injection site lesions were found in 15% top butts, 22% blades, 6% eyes of rounds, 0.4% inside rounds, and 8% outside rounds from yearling cattle, estimated to cost $7.15/head processed ($15 million annually). In cull cows and bulls, lesions were found in 33% outside rounds, estimated to cost $3.56/head processed ($2.3 million annually).

Résumé — Surveillance des lésions de site d'injection chez des génisses, des vaches de réforme et des taureaux : printemps 1998. Des lésions de site d'injection chez des génisses furent trouvées dans 15 % (haut de surlonge), 22 % (palette "cou"), 6 % (oeil de ronde), 0,4 % (intérieure de ronde), et 8 % (extérieure de ronde). Les pertes encourues sont estimées à 7,15$/tête abattue (15$ millions annuellement). Tandis que chez les vaches de réforme et les taureaux, les lésions furent trouvées dans 33 % (extérieure de ronde), et les pertes encourues sont estimées à 3,56$/tête abattue (2,3$ millions annuellement).

(Traduit par docteur André Blouin)

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Over the last 2 y, the *Canadian Cattlemen — Quality Starts Here Program* has been monitoring injection site lesions in subprimals from fed and nonfed cattle (1–3). The purpose of the monitoring program is to measure the effectiveness of extension and education programs aimed at producers and veterinarians to reduce injection site lesions in beef. The results of previous surveys in yearling cattle showed limited reductions in the number and severity of injection site lesions in expensive subprimals of beef (1–3). The first reported Canadian survey in cull cows and bulls found injection site lesions in 35% of outside rounds, with an estimated cost to the industry of $4.1 million annually from trim loss (3). The purpose of the following 2 surveys conducted in the spring of 1998 was to monitor the prevalence of injection site lesions in fed and nonfed cattle and to keep this information continually before producers and veterinarians, in the hope that injection practices and products that cause tissue damage will change over time to reduce this costly and unnecessary quality defect.

Six purveyors from Ontario, Alberta, and British Columbia, all of whom had participated in previous surveys (1–3), were visited in the spring of 1998 to measure the level of injection site lesions in top butts, rounds, and blades of yearling cattle. It was estimated from previously reported prevalences (1–3) that between 99 and 1771 of the various subprimals were required to reliably estimate the prevalence within 2% (4).

Two purveyors, one in Quebec and one in Ontario, were visited to measure lesions in outside rounds of cull cows and bulls. These 2 purveyors were visited previously (3) and received subprimals from across Canada; thus, they were representative of the industry.

As previously described (1–3), injection lesions were counted, trim was weighed, and then 10% of the samples was randomly selected, placed in formalin, and examined microscopically to classify lesions according to the Colorado system (1–3,5,6). All data were analyzed with a software package (STATISTIX for Windows, Analytical Software, Tallahassee, Florida, USA). Prevalence, 95% confidence intervals (CI), and median weights of trim were calculated by subprimal. For the economic analysis, calculations were similar to those in previous surveys (1–3) and were made by using the International Surveys Limited retail prices for the second quarter of 1998.

In the spring of 1998, the prevalence of lesions in top butts of yearling cattle was 15.0% (95% CI, 13% to 17%); it was the same in butts originating from the United States (n = 545) and Canada (n = 1116). The prevalence of lesions was 22% (95% CI, 18% to 27%) in boneless blades (n = 385), 6% (95% CI, 4% to 8%) in eye of rounds (n = 456), 0.4% (95% CI, 0.04% to 1%) in inside rounds (n = 530), and 8% (95% CI, 5% to 10%) in outside rounds (n = 437). Median trim losses were 83 g (range, 13 g to 234 g) in boneless blades, 108 g (range, 2 g to 486 g) in top butts, 116 g (range, 16 g to 281 g) in eye of rounds, 368 g (range, 153 g to 582 g) in inside rounds, and 104 g (range, 17 g to 284 g) in outside rounds. Since 1996, it appears that the prevalence of injection site lesions in subprimals (Figure 1) and the associated trim losses have not decreased dramatically in spite of extensive education and extension efforts. In the United States, injection site lesions in whole top butts decreased from 22% to 10% from 1991 (6) to 1998 (personal communication, National Cattlemen's Association).

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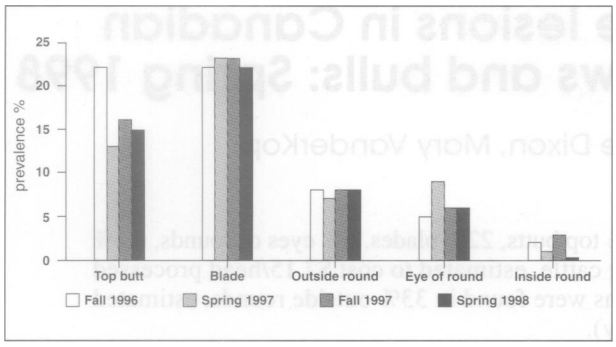

Figure 1. Prevalence of injection site lesions in yearling cattle in Canada from 1996 to 1998.

The reduction may be due to changes in injection site practices, indicating success of extension programs.

The distribution of lesions in the blade of yearling cattle was 50% woody calluses and 50% scars with nodules. In the top butt, 45% of the lesions were scars with nodules, 40% woody calluses, 14% clear scars, and 1% fatty infiltration. Eighty percent of the lesions in the eye of round were woody calluses, and the remaining 20% were clear scars (10%) and fatty infiltration (10%). All of the lesions in the inside round were woody calluses. In the outside round, 50% of the lesions were woody calluses, 44% were clear scars, and 6% were scars with nodules. The category fatty infiltration may represent normal intramuscular fat or be a response to injection site lesions or other trauma. The histological class of lesions by subprimal appeared similar among the current study and the previous 3 injection site surveys in Canada (1–3).

Injection site lesions in yearling cattle in the blade were estimated to cost $2.52/head processed, compared with $2.61/head in the top butt, $0.38/head in the eye of round, $0.17/head in the inside round, and $1.47/head in the outside round. In total, the estimated losses from injection site lesions were $7.15/head processed, or $15 million annually, similar to previous surveys (1–3).

A total of 2852 outside rounds from cull cows and bulls were examined. The prevalence of lesions was 33% (95% CI, 32% to 35%), and it was similar to those of previous surveys in Canada and the United States (3,5,6). The trim weight was 141 g, and 24% of the lesions were classed as clear scars, the remainder as woody calluses. Economic losses were estimated at $3.56/head processed or $2.3 million annually. Although this loss was much lower than that reported in a previous survey (3), the difference was due to retail price rather than prevalence or severity of lesions.

The results of ongoing surveys to monitor injection site lesions in beef indicate that very little progress has been made in reducing this quality defect. This survey would have detected reductions in the number and severity of lesions in yearling cattle, if they had occurred in the past year. However, in cull cows and bulls, improvements most likely can not be measured for 3 to 5 y because of the persistence of lesions and older slaughter age of cows and bulls. Producers have told us that the major obstacles to changing injection site practices are poorly designed chutes for safe neck injections and the additional time it takes to give neck injections. Other obstacles to change may include inadequate communication of the need for change or a lack of belief by producers and veterinarians in the significance of the problem and its impact on the sustainability of the beef industry. Beef demand continues to drop due to price, inconsistency of product, perceived safety issues, lack of convenience, and quality defects resulting in unpleasant eating experiences (personal communication, Canadian Cattlemen's Association). As a profession, we must work with producers and the pharmaceutical industry to eliminate this preventable quality defect.

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