

# Kansas Agricultural Experiment Station Research Reports

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Volume 0  
Issue 1 *Cattleman's Day (1993-2014)*

Article 1249

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1979

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### Recommended Citation

Leafgreen, M.O. and McCoy, J.H. (1979) "Processing retail beef cuts from boxed beef," *Kansas Agricultural Experiment Station Research Reports*: Vol. 0: Iss. 1. <https://doi.org/10.4148/2378-5977.2652>

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## Processing Retail Beef Cuts from Boxed Beef

Mark O. Leafgreen and John H. McCoy

### Summary

This analysis measured efficiencies of a centralized retail meat-fabrication facility receiving all beef as boxed or as carcasses. Moving vacuum-packaged, boxed-beef subprimals through a central meat processing facility was more efficient than a corresponding operation with beef carcasses. Boxed beef saved approximately 6.0 cents per pound on wholesale cuts.

### Introduction

Since boxed beef was developed, several studies have compared its costs with other beef distribution techniques. Several studies of various methods of distributing beef reported a centrally located facility that processed carcass beef for a number of retail outlets cost the least. We compared results from processing boxed and carcass beef in a centrally located facility.

### Methods

A relatively small retail food chain operating a central meat facility processing beef carcasses cooperated. It averaged 100,000 pounds of beef, pork, and poultry (65% beef, 35% pork and poultry) per week, distributed through 16 retail stores. We assumed that converting to boxed beef would make no change in pork and poultry operations. Data were calculated from 1973 to 1977.

Investment costs, operating expenses, and revenues for the central facility were estimated for an operation handling carcass beef and simulated for a corresponding operation using boxed beef. Operating efficiencies were estimated by calculating the ratio of the return on investment of a processing facility using boxed beef to that of a facility using carcass beef. Operating efficiencies were then translated and reported on an average savings per pound of wholesale cuts. In our analysis, 650 lbs. of carcass beef yielded 556 lbs. of vacuum packaged primals and wholesale cuts.

### Results and Discussion

Our analysis suggests that a centralized retail meat processing facility receiving boxed beef uses resources 2.6 times more efficiently than an identical system receiving carcass beef. Operating efficiencies increased because resources used in marketing beef decreased markedly while the quantity of beef marketed decreased only slightly. Cost reductions come from the following average savings per pound of wholesale cuts processed:

- 1) Reduced labor requirements - 0.6 cent
- 2) Reduced transportation cost - .03 cent
- 3) Reduced handling cost - 0.06 cent
- 4) Reduced product shrinkage -1.6 cents
- 5) Reduced purchase cost - 3.3 cents

Total average savings for the boxed beef technique is approximately 6.0 cents per pound of wholesale cuts, or \$33.36 (6 cents x 556 lbs.) per carcass.

If a centralized retail meat processing facility converted from beef carcasses to boxed beef, maximum savings would be limited by excess building capacity, and equipment designed for earlier technologies. However, if an organization built a new central processing plant specifically designed to fabricate retail cuts from boxed beef, savings would come from reduced inventory space requirements, decreased refrigeration and building costs, and fewer meat cutters unless prevented by labor-management contracts.

By 1980 boxed beef will account for almost 80% of the beef received by retailers. Carcasses weighing 600-700 lbs. are processed after chilling for 24 to 72 hrs. Excess fat and frequently all the bone are removed from the wholesale cuts, or their subdivisions before they are vacuum packed in clear plastic bags. Lean trim destined for ground beef is handled similarly. Packages are packed in boxes of 50 to 75 lbs., which may contain all one cut or may be mixed. Vacuum-packaged boxed beef may be stored at 30°F for up to 6 weeks, although 7 to 10 days storage is more likely. Aging proceeds during storage, the same as in carcass beef.