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Meat Processing Layout—New Construction and Remodeling

Presented by ERNEST W. WILSON

Describes the Cooperative Extension Service's role in improving facilities and methods of operation of meat processing plants in Georgia.

ERNEST W. WILSON is Extension Financial Management Analyst, Cooperative Extension Service, University of Georgia. He has a wide range of industrial engineering experience both in private industry and in the Extension Service. His current research is in new construction and remodeling in Meat Processing Plant layouts. He is a member of Beta Gamma Sigma Honorary Fraternity and a registered Professional Engineer in the State of Georgia.

Our keynote speaker, Mr. Gordon Bloom, set the stage for our meeting when he emphasized the need to consider the overall productivity of the food distribution system. In the research application in which I am participating at the University of Georgia, we are attempting to improve the overall productivity by improving the facilities and methods of operation of our meat slaughterers and processors. Through the application of research, blended with the principles of good plant layout, we are helping to produce better quality meat while increasing overall productivity at the same time. This is important to everyone in the food distribution system, including the wholesaler and retailer in particular.

It has been said "necessity is the mother of invention." In our case, necessity was the mother of research application. The necessity was created by the implementation of the Wholesome Meat Act of 1967. This Act required that all state inspected plants be equal in facilities and sanitation procedures to those plants under federal inspection. In Georgia, this meant that over 400 plants, ranging in size from a one-or-two-man operation to among the largest in the state, had two years in which to implement the changes necessary to comply with this Act. In light of the tremendous economic impact this Act would have on our state, Dr. Jim Christian of the Extension Food Science Department and I decided to instigate a program of education and individual firm assistance to the owners of these firms. Although we had both been quite active in working with meat processing plants, we felt that to insure a sound program of assistance, some additional research would be needed.

We went to Washington and met with the staff of the Consumer and Marketing Service of the USDA to find out firsthand what was to be expected of the state inspected plants in regard to facilities and sanitation procedures. Research was also conducted in regard to what materials would be acceptable for the floor, wall, ceiling and equipment, their cost and the advantages and disadvantages of each. Research was also

made of existing plant layouts available from various sources. We wanted to recommend layouts that would not only be acceptable to the Consumer and Marketing Service but also provide a smooth and orderly flow of materials and operation by an efficient arrangement of machinery and equipment.

A workshop was held at the University of Georgia for all the meat processors in the state to inform them of the details of the Wholesome Meat Act and to offer our assistance to them. We offered to visit them, design new facilities or modifications to their existing facilities and prepare plans that could be submitted to the State Department of Agriculture for approval. The response was tremendous and in the past two and one-half years over 300 requests for help have been answered. Of this number, most were for modifications for existing plants, but quite a few plans for new facilities were drawn. Expenditures just for the firms the Georgia Extension Service helped totaled over \$3,000,000. One of the small slaughtering and processing plants we designed cost over \$50,000 including equipment. The kill floor area of this plant has an 18-foot high ceiling in order to accommodate a 16-foot bleeding rail for cattle. Before the Wholesome Meat Act, a majority of the small slaughtering plants and some of the larger ones were bleeding the animals on the floor — right where the manure and blood from previous kills had accumulated. Not a very sanitary procedure as you can imagine, and one not approved by the USDA Consumer and Marketing Service.

A new sausage department was designed by the Extension Service and is now in operation by one of the larger plants in Georgia. The cost of this addition was over \$100,000.

To keep this program responsive to the hundreds of requests we receive requires close coordination with several groups, the Extension Service county agent, the district veterinary supervisor of the Georgia Department of Agriculture and the Water Quality Control Board. As a result of our efforts in this area, we are now in the process of preparing standard plans for slaughtering and processing plants of various sizes. These plans will be published and available to all interested people inside and outside of Georgia.

Now the important question — How does this tie into this meeting? How does it improve the food distribution system?

The expenditure of millions of dollars in Georgia and all the states was mainly to comply with the Wholesome Meat Act, but it directly improved the food distribution system. The most important way was through better

quality meat to the wholesaler and retailer. There is very little you can do to improve on the quality of meat received from the slaughterer and processor. You can *maintain* the quality of the meat you receive, but if poor quality meat came to you, you are in trouble to begin with. I know shelf life and shrink control are important to the retailer and these two factors are directly affected by the quality of the meat processed.

For years, the University System's Extension Service, Teaching and Research personnel have worked together to improve the food distribution system. For a long time, the Georgia Extension Service has been concerned

with the farmer, the producer of agricultural products, and the housewife, the consumer of these products. In the last few years we began to offer assistance to the manufacturer and processor of these agricultural products and more recently we have extended our program of assistance to the wholesalers and retailers and have given more attention to the consumer. This is as it should be, for the total food distribution system must be considered for maximum effectiveness. If your University System doesn't have this joint effort by Teaching, Research, and Extension striving to improve the food distribution system, I hope you will work toward this objective.