

Fresh Meat Processing Discussion

C. R. Calkins, University of Nebraska: You mentioned some problems with packaging. Can you elaborate on those a little bit?

J. O. Reagan: The two types of packaging systems being used in hot processing are bag type and roll stock type systems. We have found inherent problems with both systems. If one uses the bag type system, one has the problem of trying to load a soft, sticky piece of meat into a tight-fitting bag. You may use an oversize bag to help solve this problem, but we have found a greater number of air pockets in the larger bags, which results in higher levels of purge.

Roll stock systems have the advantage of easy loading. However, if fat or juice comes in contact with the sealing surfaces of the two films, you may find a large number of leakers. The roll stock packages are also more rigid, which means a greater incidence of tears or cracks in the film.

A. M. Booren, Michigan State University: You mentioned purge. Could you tell us about the differences observed? Are there differences in purge amount and composition between hot-processed and traditionally vacuum-packaged meat?

Reagan: Yes, you can definitely change the amount of purge in hot-processed items by changing chilling treatments. Normally, if we take a hot-processed cut that has been conditioned prior to vacuum packaging, then conventionally chilled to 28°F, we see very low purge values. We can take the loin from the opposite side of that carcass, lower the temperature to -5° to -6°C very rapidly and the purge level will double or triple. With regard to the actual composition of purge, I don't have a definite answer for you at this time. We are doing some analyses on that now. We have been saving purge samples from these different processing systems, and are running them through the HPLC. We have completed some analyses on moisture content and potassium content, but up to this point have not seen any big differences. We've found purge content to be 6% to 7%, which is lower than one might expect.

C. C. Melton, University of Tennessee: Roger, you had discussed fat adjustments in ground beef production. Would you care to talk about that, and where you envision this is

going to occur in the process, and any problems that may result from mixing the fat at that time?

Roger West: We have had some problems when we used an Analray. Adjustments are different than when cold-boned meats are used. You also have a problem if you try to mix it too much. It chills down and you get some product smearing. That may affect your analysis, and it is relatively difficult to get a good uniform sample.

If you add CO_2 "snow" and get the temperature down, I don't think you will have a problem. But if you really try to maintain hot-process conditions throughout, I think you will. In particular, relative to the fat smearing, if you want to adjust the fat with 50-50 frozen trimmings, as you bring the temperature down you will run into smearing problems. So there are still some problems we need to look at and figure out how to handle.

V. K. Johnson, North Dakota State University: What about partial hot boning of some carcasses, as some processors do, but a little more extreme than when they remove thin primals and open up the thick primals of large bulls to allow more rapid chilling?

West: I think that could be a possibility. If you look back at the progression of how we get to commercial applications, it may be that we are now fabricating at 48 hr because we think it takes that long to get it chilled. However, if we partially chill and then bone it, we may choose to back up to 24 hr, then take another step and back it up a little more.

I don't know if anyone has specifically looked at the partial boning system you mentioned. We have not. When we tried to do it, we ran into a problem with the cuts where the attachments were severed. One problem that some people trying to hot bone cow carcasses are having is: What do you do with those sub-primals that you want to sell, like tenders and top butts? Most of the people I have visited who are doing it are having a tremendous problem with toughness in the tenderloins, because they try to handle it just like the other boneless trimmings meat — get it frozen quickly, and they end up with toughness problems.