

Discussion

Session One

T. Branden: Many meat packing plants collect pancreas glands for insulin. What is the new synthetic human insulin going to do to the amount of pancreases that are needed to make insulin and some of the other pharmaceuticals from by-products?

B. Berry: I'm sure it probably will have an effect on that area. I don't know whether your survey found any shift in that area.

Matulis: Pharmaceutical companies are actually getting insulin cheaper synthetically.

Branden: I wonder if eventually this would get to be where the by-products don't have value any more?

Matulis: That may happen, as they are being replaced by synthetics.

R. Field: I guess that's only one example of why we're talking about maximizing by-product utilization. In reality, we're in a situation where we're losing utilization or uses for by-products. As I drove across the country to get here, I stopped at a couple of pioneer places, and I was struck by the fact that, at one time, blood was used for everything. Not only as an edible by-product, but as stain for furniture. When used with buttermilk, the stain was on hardwood. Bones were used for buttons and corsets, and you can go right on down the list.

Berry: I think that was the bottom-line kind of summarization your report showed. It really highlighted the fact that while there are still many companies making use of by-products, the total broad picture of by-products is decreasing in terms of total variety.

Field: I was thinking of some of the ways that by-products are being utilized in some other countries that perhaps we should consider. Maybe I should say that with the move today toward "natural everything," there should be a use for these items that are natural. I think that one of the best examples of utilization is the pork skin in sausages in many countries that we don't have here. Pork skins, for example, are being utilized for popped pork skin; that perhaps is the business that is growing in some areas, but it will never take all the pork skins we have—it's an example of an increase. Certainly in many European countries and other places where they are using the pork skin for up to 20% of the protein in a sausage item, it is working very well, and making some very high-quality items. I'm not sure that we should be thinking of some of these by-products as low-quality items. Another example that is being used in sausage in some other countries, Europe especially, would be the blood, or the blood serum. We're not using blood in this country in sausages to any great extent. Perhaps in the United States, it could be encouraged from the standpoint that it is natural, as perhaps pork skins could. I can't go too far without mentioning the utilization of bones. Certain kinds of deboning are being used in many countries and bones are used in many of the sausages in those countries. While we are utilizing bones from poultry, by mechanical separation, we're not using red meat bones. Part of the problem has to do with regulations in labeling and other requirements. I think that regulations may be one of the things that should be addressed in order to start

maximizing use of by-products.

Berry: One of the things Ray Field was talking to me about is mechanically-separated meats. The trend towards more boneless meat and shifting this back more to the packer-slaughter level, where they have access to make better use of these materials. The opportunities exist, but we must really find the markets to start moving some of this.

A. Kotula: Ray, one thing that seems to be repeated year after year is that ever since Carol Foreman was in, we have a legislation problem. What must be done in order to circumvent this, so that mechanically-separated meats from red meats species could be utilized as effectively as they should be? Right now, we're wasting over a billion pounds a year by sending them into rendered products, rather than into edible products.

Field: This concerns the maximizing the utilization of bone. Mechanically-deboned poultry was accepted before the technology was available for red meat; their standards were established, and were different and have remained different over the years. At the present time, many of the things that were initially proposed for mechanically-separated red meat have been dropped or altered to where they are more on a comparable basis with poultry. At the present time, the one big thing (in my mind at least) that separates mechanically-deboned red meat from mechanically-separated poultry, is the bone particle size. There is no maximum bone particle size in the poultry business today for separated poultry. The one for red meat is very stringent; the mechanically-separated poultry we've been eating over the years has considerably larger bone particles than that in it. I would think that if the bone particle regulation were changed now, there would be a number of people using this product in this country.

Kotula: You haven't answered my question. What should be done and who should do it in order to get this moving?

Field: Well the thing that is holding it up is what I thought your question was, and the thing I feel that is holding it up is bone particle size. What should be done is to change the bone particle regulation.

Kotula: And who should petition FSIS for that?

Field: Well, I don't know.

R. Terrell: You're talking about changing the regulation and the label at the same time. It seems to me that poultry is called the same thing as mechanically-deboned poultry meat. If I use MDM turkey in making a frankfurter, I just call it turkey. Chicken is the same way.

Field: There are other inequities like that 20% limit in red meat and no limitation on poultry.

Terrell: What our question is, do we really need that kind of material to be used in products in the United States?

Kotula: The other question is, can you afford not to use it, if you are looking for economic advantage? If you're getting 5 cents per pound, when you could get 50 cents per pound if you put it into a product such as ground beef, you have an economic advantage.

Field: My point was that MDM is being utilized in other countries. They are doing it economically and putting it into high-quality products. There is no reason why we can't do a

certain amount of that in this country, as the regulations would allow.

J. Corbin: The meat by-products processing industry has a very poor reputation among pet food manufacturers and the feed industry. Since it is a secondary product for the packers, they pay very little attention to the quality control during the rendering process of meat and bone products, with the result that lysine is generally tied up through excessive heat with other burn material available; then often that material is sold to mixers who take that and hydrolyzed feather meal with high Kjeldal units and blend them together and send it out into the industry. Then the industry mixes this with a little bit of sand, salt that we already have in excess, and thus it has a bad reputation.

The pet food industry alone, at the current time, uses in excess of one million English tons of meat and bone meal each year and an excess of 250,000 tons of fat, which is primarily bleachable fats and tallow. So a little bit of quality control based on your end to be projected toward the feed manufacturers could win you a lot of clients, more than you have.

Berry: Then some of this taking place is a result of the shift away from many of the packers doing the rendering themselves and more of this being moved on to other places, so this is why the quality control is lacking?

Corbin: Well, even when the packers were doing it, they really had no quality control over the meat and bone meal products.

Question: Are many of the large packers switching to outside renderers?

Matulis: The large packers are still rendering their own materials.

Terrell: In order to be profitable, the rendering must be a separate process; you must have a substantial number of animals being killed at one location, and as the slaughter industry becomes more concentrated into fewer and fewer hands, the packers who are killing large volume will continue rendering and everybody else will sell to renderers. It's not economical to fool with it, except for pork skin, that's entirely different. Nobody mentioned casing here, about the source of collagen for casings for sutures, is that dead or is that still alive?

Berry: I was trying to find some information on that myself, so I called a couple of sources and didn't get a great deal of information from them.

Matulis: We didn't find a whole lot on that either.

D. Rice: Ray, if they start using mechanically-deboned red meat, then something else has to be replaced in the formula. There is already a decline in the red meat industry and poultry is supposed to out-perform red meat by 1990, or beef by 1990. What's going to go? If people aren't buying, and if you cheapen red meat hot dogs, people don't buy it for the price. I don't think people are buying poultry because of the straight price, they see some other value in poultry to buy besides the price. So in other words, you might cheapen a hot dog, but I don't think you're going to improve your sales that much.

Field: Well, I'm not sure there is any reason to cheapen by adding these products. In some cases you may make a better product. I can see that it won't work, "less expensive"

is not the word. Well I'm not even sure that that needs to be done. I'd rather talk about by-products. I'm not too concerned about that as long as I see the poultry industry using it and the success they are having with poultry in mechanically-deboned meat, as poultry is still called. They are having good success, and people in other countries are. Certainly there are just so many products that can be utilized, but what we're talking about today is maximizing the utilization of by-products, and certainly bone and the material attached to the bone can be maximized through this procedure.

Berry: Ray, do you have any feel for other countries in the world that would be in a position to increase their imports from us of mechanically-separated meats?

Field: There are plenty of places in the world that could use the protein that's available that we're throwing away. For some of those countries, it's the same old problem as it is with everything else, they can't afford to buy it. The people who are using deboners are basically using the products in sausages in their own countries.

Berry: Do the countries that have the facilities to do it already have any need to bring in any more, or are they handling their own needs pretty much?

Field: It's the same old business; you've got certainly the demand and the need for it on a worldwide basis and if there is somebody that can buy it, there will be a market.

E. Reynolds: I have a concern from the standpoint of many of the medium and smaller processors across the country that the value of the by-products that are presently being recovered in the form of something going to the renderer has reached a low ebb. Since I've been working with the meat industry, I've never known it to be any lower. A good example would be a 150 hog per week operation this time last year which was receiving \$1,500.00 a month for his by-product check. Today that same check brings approximately \$70.00 into the operation; and that is a drastic drop in value to the livestock that he's able to pay back to the producer. This is not just a concern of the large processor, it is also a tremendous concern to the small processor who doesn't have the outlets to pull pituitary glands or many of the other products that he could receive a value for. We have many of them that even discard heads. We know the economic value for a beef head or a hog head, but they shoot it with a weapon that leaves lead particles in it.

There is a tremendous educational opportunity here for the small processor, but the value of the by-product to him has dropped to a point, it's even in some cases more economical for him to bury it than it is for him to run refrigeration cost to hold it for a week until it can be picked up. That's reaching a low ebb, so the increase of the value of this product to the medium-to-small processor reaches another significant level.

When we think of the total value of the product, we must also consider that the product has a economic impact on the local communities. For example, small communities like those here in Illinois that have a local processing facility which maximizes the use of many of the animals that are produced locally. The animal has a total value, including the by-products and in utilizing the by-products that come from that operation. Reducing the value of the by-products can make a difference in the raw material cost level in a local

area. What can be done to improve this situation?

Question: You're asking about the small producer getting something from the by-products. I'd like to ask if you were aware that some of the by-product companies actually stifle some of the smaller producers from doing so. If you don't sell your hides to them, they refuse to come and get anything else you throw out and you're actually not getting anything for fat and bone. Is that a major problem for other parts of the country like it is in my area of Texas?

Reynolds: It's getting to be more of a problem. With the poultry industry, we have nine processing plants but they're owned by five companies and three of those companies are strictly for poultry processing. So it reduces the number of competitors to a very minimum. We actually have processors who are now paying to have their by-products picked up.

Comment: In West Texas, it is all one company; if you don't sell them your hides, which they give you an extremely low price for, they won't pick up anything else.

Kotula: I want to try to address Estes's question, because I think possibly he may have put his finger on one of the difficulties. The fact that the consumption of red meat has decreased, is this one of the contributing factors where the cost of processing has increased or has stayed high and we have excess meat? People are looking out for themselves and are saying "Well, I need a little profit or else it's not worth it." Our export markets have been suffering and it seems like we're on a plateau or actually decreasing the consumption of red meat. Possibly the minorities could improve our by-product utilization, we should develop a greater demand for all red meats by some mechanism, basically exports.

Reynolds: Tony, I'd like to add to that. I think we in the meat industry have to become increasingly aware that if we're not adding value to the fresh meat product itself; just killing the animal and taking it to market, if it's not done in a very economical, efficient operation, it's borderline at the best. In most cases, if you run the statistics on it, you find that they're negative. Hogs and cattle both in our area have had negative cut-outs for considerable lengths of time, off and on. We no longer can afford on a small processor level to disregard the value of the by-product even if it's to the pet food industry by upgrading it. We have some small meat processors who have taken advantage of emptying the visceral tracts, stripping them out, grinding that product and selling it as pet food.

We in the processing industry are going to have to understand that value added to a product has to occur in order to be able to merchandise the rest of the carcass. No longer will the high dollar-value cuts, the cream of the crop, bring your dollars back; it's everything else that will keep you in business. I think that's why this session is so important, especially from an educational standpoint to the small and medium-size processor. What are you throwing away that you could do a better job of utilizing? What is the maximum utilization you could get? How many of you are using casings or intestines of any sort in any process? That's something I think must be addressed.

Terrell: Since World War II, we have had an explosion of organic chemistry and synthetics, which have tremendously affected the by-product market, especially casings.

Field: I think there may be an opportunity for maximizing

by-products by just the fact that we have come a long way with the organics and the synthetics of different types. I think there is a swing among the population back to "natural" — that is, if we use a non-uniform casing to produce a hot dog and sell it for twice as much. That certainly is not going to be done with everybody on a large scale. There is an opportunity to put some of these products in a good light, instead of continually thinking of the by-products as the "bad guy" or the additives in sausage, or something we don't want. Maybe there's an opportunity to bring some of these by-products back as "that is the way grandma did it." Obviously, we ship all our by-products to Europe because they still do it that way to some extent. Well there may not be the same demand for ours if the 1988 ruling goes through. We ought to start thinking about utilizing our own products and do it not as a way to "cheapen" but a way to make our products more "natural" or whatever a good term is.

C. Adams: I haven't heard the word "blood" mentioned here as a food item, and I think somewhere along the line some time we're going to have to face the fact that we're wasting one of the most nutritious by-products we've got in the animal, and of course, primarily because of an esthetic reason. Here we have lacked the consumer education. Why in the world have we never accomplished a method of making it appetizing and utilizing it as it should be?

Berry: They are doing a better job in Europe than we are.

Terrell: What makes you think they are doing a better job in Europe? You know it's all on the label. They don't label the ingredients as blood.

Rice: I'd like to say that I think the label is probably the biggest issue; coming from the soy protein industry, that is definitely an issue and until it's resolved for the red meat people, they're not going to accept it. If nobody wants to see soy protein on the label, they're certainly not going to want to see blood protein plasma on the label. It's just not going to be accepted, and, as you said, we have been selling it to other countries, some of them legal and some of them not legal. The regulations aren't as strict.

Answer: I'm not sure that's accurate.

Reynolds: I think we're missing a point. The market doesn't have to be at your back door, it doesn't have to be the Chicago market that accepts the blood. The major market for the European blood that is produced is South America. Blood plasma is a nice yellow substance, and it goes into nearly every product they produce there. When we talk about the utilization of by-products, where it's used is a different question than the recovery and maximization of it. I think these are two separate entities. If you are thinking of the small processor, you are concerned with a local market. But with the large processors who are killing eight to ten thousand hogs a day with the blood going down the drain and you're not getting proper utilization of it, then I think you have a different question to address than where the location of the market might be.

Kotula: I would just like to make the comment that the United States is not the only country who is doing some soul searching as far as utilization of by-products. We do have some visitors from Australia, and I was wondering whether they would tell us what they're doing with their by-products.

Eustace: Well, obviously Australia is having similar prob-

lems to those we're discussing here. We are involved in several different areas, one being utilization for pet foods. Another one which is more specialized that is showing some promise is the buying division of Mylar products, and seems to be getting into pharmaceutical-type products. This will certainly benefit some of the processors, especially the small processors. We have essentially the same problems as mentioned here for tallow, sources for disposing of it. It's a concern for sure, but there are areas where there is some optimism at least, and there are small new markets opening up.

Reynolds: Brad Berry and I experienced something as we started to ask many different people about information relative to what we're talking about today. There is a lack of available sources of simple information on by-products. I personally believe that there should be some development of some quality control guidelines relative to the hides, how hides should be treated. Obviously there is a tremendous difference between an \$8.00 hide and a \$25.00 hide, and they're both on the market at the present time. How do we maintain that quality, and what is the equipment to do so? Some of this information you would say is available, but it's not widely published. It's not known by the small processor. What about the utilization of by-products for pet food? What are the requirements and the quality control standards? Are these readily available to the medium-to-small processors who kill 150 to 500 head a week? What about the quality standards for recovery of edible fats that could be utilized instead of rendering and being sold as cooking oils, cooking fats?

Terrell: Procter and Gamble Company will give you the book they published 20 years ago, "Better Rendering." It became the bible for all the rendered edible fats.

Reynolds: And the split-up of the industry since then and the recovery and change of the organic chemistry that you mentioned have changed many of those practices. So I think that an update or something current in that area might be appropriate.

Berry: So is it really a question that maybe some of the technology isn't efficient for all size plants? I read an article not long ago about the people at H & H, which is not a large operation, but apparently do an effective job with many of the different by-products. I realize they are in a location where they've got some pretty good markets for some of them. Maybe Dwayne, you've seen their operation from a by-product standpoint. Maybe you know some things they might have done. I've been in their plant, but not from the standpoint of looking at by-product utilization.

Dwayne: The only thing I could remember that they were doing that was unique is that they were mechanically deboning from their cow boning operation, adding salt with it and selling it to Japan to process meat that did not fall under the import quota, which I thought was really unique.

Terrell: How do they do that, just add salt to it and then it becomes processed and ship it?

Berry: I heard some of the people in California are doing that. One of their people gave a presentation this year to the Meat Science Seminar at Texas A & M. The statements were made that over 10% of their gross returns is due to by-products. So apparently they're able to effectively do some

things, even though they're not obviously a large size operation.

B. Bacus: It would appear to me we're missing a real opportunity here with the media. The ads on increasing the calcium levels in your diet are familiar, showing the loss of calcium during aging and then indicating that you should take Roloids to get calcium. It would appear to me that the labeling for mechanically-deboned meats should be improved so we might take the positive approach and have them eat calcium-fortified processed meats instead of taking things (Roloids) to improve their calcium. That is a big available source of calcium, isn't it?

Field: It is a very good source and it is very important to people who have a lactose intolerance, which amounts to a good portion of the world.

Bacus: We're not saying anything about that potential excellent source of calcium in the diet.

Berry: I think that's the approach they take in Europe.

Corbin: The National Rendering Association recently published a comparison of meat and bone meal, soy bean meal and other proteins. It had a negative effect connotated by their own publications on their own products, and if you're going to have a negative effect for your own organization when you're promulgating your products, that doesn't help endear you to the feed industry, which uses most of them. The second part is that the folks who advocate the use of vegetables and plant materials, to a large extent, are overlooking the toxins associated with many of the plant materials. There are dozens of good technical books showing the toxicity of things like apple seeds, people have been killed with that, people have been killed who drink too much water, and those are documented. You can fight the vegetable approach by pointing out some of those shortcomings, which no one in the meat industry has done.

Session Two

D. Schafer: Is anybody doing research in the by-product area? Marriott, at PI, Paul Graham, and I, have done some work on spleens and have found some interesting information regarding this type of product.

Question: As it is used in restructured products?

Schafer: We've looked at some restructured products as well as frankfurters and other uses.

V. Cahill: I've heard rumors of what IBP might be doing with the edible by-products off the kill. Is there anyone here who is familiar with that other than just a rumor?

J. Leising: IBP is doing some development projects in that area. If you're talking about fresh vacuum-packed products, that's a very active area in the program which we just kicked off, and it has been very successful. In terms of export, that's always been a very successful program, but fresh vacuum-packed domestic is a very new program. I understand the next step is precooked export items. That's pretty exciting.

D. Kropf: Precooked what?

Leising: We're looking at precooked tongues, lips, those kinds of organs. Certainly not the liver or the heart, either one.

Berry: Are these items being considered as bulk-packed items or individual?

Leising: Fresh packed items, I think the way they pack them is two tongues. It is not a large pack but there might be six packed in a case, it gives good shelf life and has improved quality for retailers.

Cahill: Is that cooking by consumer demand or regulatory?

Leising: For export, it changes the picture a little bit.

Kropf: I'm intrigued by this. I thought that once before they had tried marketing these offal meats in the California area. I'm curious as to what they're doing different now with this effort to give them better assurance of success. Does anybody here know? I'd like to see this happen, I think one problem that we have was that in vacuum packing you can't always see deterioration as easily, you can smell it sometimes after you open the package.

Leising: Basically what they've done is that where temperature is a problem, is in the heat vacuum system with heat seal, and that's changed the shelf life of the product by vacuum packaging to 28 inches where before they were looking at 20.

Schafer: We've been keying on the edible by-products so far and I guess I raise one question of too much of the barrier of having to put these by-products on the label on variety products in addition to just marketing hearts, tongues, liver, and so on, and how much of a barrier is that to the regular use of them?

Berry: We were talking about this in our first session and indicating that compared to Europe, that is probably one of our big problems. Where some of those things don't have to be on the label there, at the present it presents some problems in consumer acceptance.

Schafer: To follow up on your question, one of our agricultural economists has done a variety meat marketing study this past year. There are about 3000 personal interviews in stores, but that data has not been analyzed yet. One of the big hurdles and the most common reason people don't eat variety meats is their doctors have told them not to. Another interesting thing I posed as a question to him when we were developing the survey was: If we chose different names or if we had different names for these items than you're used to, better sounding names or something along that line, would you be less averse to trying them? I'm not sure what the answer to that is but I think it is a question we ought to pose. As I recall, a few years ago, the Department of Interior or whoever deals with fish labeling had a couple of species of fish that had terrible-sounding names (one may have been rose fish) and they were proposing to change the names of the species so they may be presented by changing the names without confusing or lying to the public. I think the names are a barrier on some of these items.

Berry: Well, certainly that's true when we start talking about edible organs, offals and variety meats. The confusion was that people were not used to the term "offal" when we started using that word. They said "Well, what do you mean, awful."

D. Kinsman: Would it better if we pronounced it "offal" and that would not give it the connotation of awful?

Question: There's a great number of variety meats in stock. Do we know what freezer storage life of these variety meats is?

Strand: I don't know if I can answer that question directly but two weekends ago, I was in a plant in California that does nothing but pack variety meats. Everything from a chicken by-product to pork meat. We asked what kind of shelf life he achieved on variety meats, and he said "three weeks." I'd like to make a comment on the naming of these products. In that area there is a large ethnic population, and they have discussed this and they always come back to people wanting to call it what they're called. They want pork ears, they don't want synthetic meat, or they want tongues or whatever they happen to be. There certainly would be the risk if you change it of losing the clientele you already have, that's true.

Berry: I was curious about your comment, Dave. Are some of those people informed by their doctors that they shouldn't eat some of these by-products?

Schafer: I'm reading into it, but I think the main reason they might have been given that advice was because of the cholesterol content of liver and heart, heart not necessarily, but brains was the one on the survey items.

Field: To follow up on what Don was saying, we have ourselves to blame for part of this situation in that the use of variety meats in cooked sausage products is bad and in that frame of mind, not too many years ago the hot dog was supposed to have steak in it to be a good hot dog. We all know that isn't true and that wouldn't make a bit of difference, but if you start putting in the offal meats or variety into a hot dog, somehow you get a notion in your own head that this is a lower-quality product, and it's not true. So we have to correct some of our past mistakes ourselves.

Marriott: Regarding the optimum use of by-products in the southeast. I think specifically in Virginia, North Carolina and South Carolina, we're seeing what appears to be an increased popularity of souse and here is a use of the ears as well as other parts. It's not necessarily any more looked upon as something for low-income people but apparently it is receiving acceptance and some popularity also in social economic groups so perhaps a lot of us will be involved in the future as being innovative enough to hitch on to one of these product promotions and really riding out the potential it might have.

Comment: I would like to point out that we have been utilizing the protein from beef hides and can maximize the utilization of beef hides, that might be one approach. There are companies now that have available as many as 10 different types of animal hide proteins that have different functionalities.

Field: I think that's true and the thought that comes to me is the utilization of pork skins. You travel in Europe and pork skins are used in many sausages. About 20% of the protein is collagen in many of those sausages. They are very high-quality products and many of them contain pork skins. That's the by-product that we're not utilizing very well that could perhaps be better utilized and increase the value of beef hide as an example along the same line.

Comment: On the pork skins, to refine that process, they have a product called "gribe" which is a dried product and microbiologically it has almost 100 percent no microbes present. They tried to get it approved in Canada, and ran into problems. This is in labeling and maybe an image problem. The product that I saw was a very acceptable product, both

from a microbiological standpoint and an appearance standpoint. It's a matter of educating our public and perhaps our regulator agents.

Berry: We stop at this point and try to consolidate some of what's been said. I think the Illinois work is showing that while by-products are being saved, there is a reduction in product uses at present for them. We've identified here specialty products for certain areas, whether it be domestic use or for exports that have promise. We all understand, there is some

adverse consumer acceptance associated with some of these products. A lot of it may be falsely claimed and we've got some work ahead in terms of promotion and consumer education. I think this summarizes two or three things in terms of where we are. It probably boils down to who can make the thrust still to overcome some of these. Would it take an organized effort by the industry or by everybody or what does it take to really try to maximize some of this?