

Progress In Mechanically Deboned Poultry Products

By
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(Editor's Note: Dr. MacNeil presented a roundup of research and progress in the mechanical deboning of poultry meat at a recent Mid-Atlantic turkey conference sponsored by the Northeastern Poultry Producers Council. The following is a summary of his remarks.)

Mechanically deboned poultry meat is a relatively new product. The industry has had deboned meat for quite some time now, but this mainly consisted of removing muscles from carcasses and using it in that form. Mechanically deboned poultry meat, or MDPM, is meat that has been removed from broiler necks or backs, turkey racks or spent laying hens. The removal of this meat from these raw materials is done by mechanical means, hence the term, mechanically deboned poultry meat. At the present time there are several machines on the market that are capable of performing this task but the capacities of these machines lend themselves to use only in larger processing plants. The capacities of some of these machines run approximately 2,000 pounds of raw product per hour with yields being reported on some of them up to 70 per cent.

It is obvious of course that by recovering this meat the industry has in essence upgraded the economic value of broiler necks and backs, turkey frames and spent layers. Instead of this material going primarily into animal food manufacture if material can now be used in many food products such as frankfurters, bologna, turkey rolls, chicken rolls, spreads of various types or any product that could use raw meat in this particular form.

Several years ago when these machines were first introduced, the quality of the output made many users of this product pretty discouraged because of inherent flavor problems. The process itself consists of reducing the particle size of the meat product,

and then exerting very high pressures on the material which sets up a condition favorable for oxidative flavor changes as well as making nutrients more readily available to microorganisms.

Several years ago we at Penn State became very interested in the problems of this product since we had two Pennsylvania based plants producing the material. At that point the product was very poorly characterized and the processing guidelines were really not very well established and consequently, several problems developed which later on were solved.

The proximate analysis of material evaluated at Penn State had percent protein ranging from 9.3 up to 14.2 per cent and fat ranging all the way from 12.7 per cent up to 27.2 per cent.

If you compare this with ground turkey, you would find that ground turkey has 24 per cent protein and 10 per cent fat and 66 per cent water; whole fresh egg has 12.9 per cent protein, 11.5 per cent fat and 73 per cent water. When cooked this material looks very much like ground beef and when you

compare this to the proximate analysis of ground beef you find that ground beef has 18 per cent protein, 21 per cent fat and 60 per cent moisture. So in examining these figures we can see that we have an excellent food source which compares favorably with many food products presently on the market. When amino acid patterns were examined it was found that the amino acid pattern of MDPM compare favorably with eggs, beef and milk.

Some of the studies conducted at Penn State included the use of sensory taste panel evaluations in order to determine the optimum storage and handling conditions for this product. It was established very quickly that this material should not be stored in a refrigerated state for any period of time but rather should be frozen immediately to prevent any of the undesirable changes that we had mentioned earlier. In our studies on microorganism levels we found that care must be taken to see that initial levels are very low and we also found that there is some reduction in numbers during frozen storage of MDPM.

After the initial experiments were conducted on identifying problems with this material and establishing the exact characteristics of the various types available, several additional experiments were conducted involving the use of what we term quality maintenance compounds which proved to be effective in maintaining initial high quality. Compounds used in this particular test were a rosemary

spice extractive (RSE) BHA citric acid and polyphosphate. These were all found to be effective in maintaining lower TBA values, high taste panel flavor responses and a reduction of bacterial numbers.

We are conducting additional experiments to see if further improvements can be made with this material so that it can reach its potential as a very important raw food ingredient material.

Baum Elected President Of E-town 4-H Club

The Elizabethtown Area Pig and Rabbit 4-H Club held its reorganizational meeting last Thursday at the Union Schoolhouse, Maytown Road.

The meeting was brought to order by Club Leader J Warren Heisey. After the opening procedures members filled out enrollment cards.

The following is the result of the election of officers: Dan Baum, president, Wesley Gerber, vice-president, Scott Heisey, secretary-treasurer, Barbara Myer, news reporter; Michelle Grove, song leader, and Stephen Horton, game leader.

Barbara Myer was elected to represent the Club on County Council. Dan Baum, Scott Heisey, Wes Gerber and Barb Myer volunteered to serve as teen leaders for the upcoming year.

Mr. Heisey discussed the project requirements and some future activities with the members.

The next meeting will be held April 26 at the Union Schoolhouse. Prospective members between the ages of eight and 19 are urged to attend this meeting. News Reporter, Barb Myer

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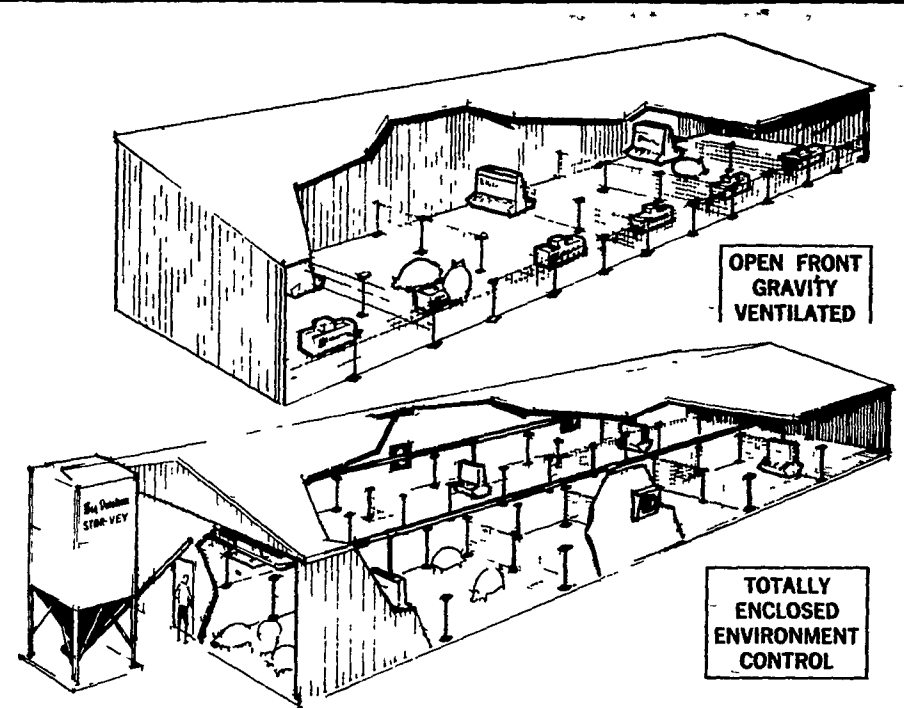
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