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### **Atmobox® - box with film sealing**

In late 2002, a presentation was made by the company Franz Delbrouck GmbH, demonstrating their box system for storage and transport of perishable foods. The box, which can be sealed with a thin, plastic film, is stackable and easily integrates with a variety of other box systems, including the EURO meat box.

During the closure process, the Atmobox can be emptied and subsequently refilled with any preferred type of protective gas atmosphere. The type of film used (gas permeable) can be varied. By firmly sealing the film to the rigid box, hermetically sealed packaging is created. The box is opened simply by peeling back the film, leaving little to no residue. The box may be resealed as often as desired.

At FH Lippe and Höxter, meat and meat products were initially sealed with different gas mixtures. The Delbrouck company then supplied them with a number of Atmoboxes (type FO, ivory color) for the same purpose. Closure was performed using a machine from the G. Mondini S.p.a. company, based in Italy.

The results of these initial experiments using fresh meat and boiled sausage were highly successful. The seals created on the containers were airtight and durable. During the observation period, the permeability of both oxygen and carbon dioxide was good, while the gas composition remained nearly unchanged and was mainly influenced by the natural reaction with the meat product inside the box.

Following the positive preliminary trials, further tests were performed as part of the degree dissertation work of Dreseler (2003). These experimental tests were conducted not only at FH Lippe and Höxter, but in other meat packing companies under conventional conditions. During this period, tests were also performed to measure the ease of cleaning.

The overall results of the preliminary trials were very positive. Using this newly developed transport packaging, shelf life of the food is increased when compared to conventional shrink wrap packaging.

The advantages of using this innovative package system are considerable:

- The reusable packaging system can be repeatedly sealed
- Sealed boxes are considered packaging, which allows for different foods to be transported and stored together without sacrificing quality
- Food quality is maintained during transport
- Losses, as a result of food drying out, are minimal
- Sanitation is maintained and theft protection is increased during transport
- Food, as a rule, does not soil the protective film, resulting in lower disposal cost



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