



DSM 

DSM Specialty Packaging



GENOOTSCHAP
ter bevordering van
MELKKUNDE

Kansen in kaas!
Voorjaarssymposium 2010

Corstiaan Hooft April 2010
DSM Specialty Packaging - Food

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Pack-Age™
Kansen in kaas!

Pack-Age™ – Kansen in kaas!

DSM Food Specialties  **DSM Engineering Plastics** 

Unique position in Life & Material sciences

Pack-Age™

enables the needed water transmission, while maintaining sufficient oxygen barrier and/or

prevents outgrowth of unwanted micro-organisms at the surface

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Applying new technologies – Kansen in kaas!





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Cheese ripening processes

<p>Natural ripened</p> <ul style="list-style-type: none"> • Ripened cheese • Balanced matured taste • High moisture loss • Firm consistency • Rind / crust • High value • DSM supplies Delvovid® (mould protection) 	<p>Foil ripened</p> <ul style="list-style-type: none"> • Young cheese • Flat taste • No moisture loss • Soft • Rindless • Low value • DSM supplies Akulon® polyamide granules and Delvovid® 	<p>Pack-Age™</p> <ul style="list-style-type: none"> • Ripened cheese • Balanced matured taste • Reduced loss • Firm consistency • Dry rind • High value • DSM supplies integrated cheese ripening system 
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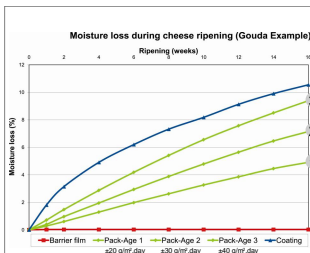
DSM's technical solutions - Pack-Age™

- Breathable film (with Delvovid®+/Pack-Age™ treatment)**
 - Ripening in breathable foil at 12-14°C; 85% RH (natural ripening conditions)
 - Matured taste, dry-rind, no waste
 - Turning as coated cheese, potentially less intensive
 - If required a coating can be applied at end of ripening (for e.g. pieces)
- Barrier / breathable film with bioactive coating**
 - Maximum convenience, maximum protection
 - Successful POP on cheese

Patents on breathable packaging for ripening cheese and integrated bio-active coating on cheese ripening packaging are filed.

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Control of moisture loss - experiments



The experiments proved the breathable film controls the moisture loss during ripening.

Tasting sessions showed cheese ripened in breathable film almost equals natural ripened cheese (dry rind, taste and texture). Undistinguishable for the consumer.

Application:

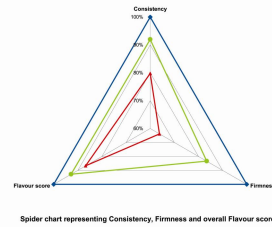
→ Cost reduction compared to natural cheese

→ Upgrade quality of foil cheese

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Evaluation by NIZO (7, 15, 21 and 27 weeks)



The texture of the cheese ripened in Pack-Age™ bags was about the same as that of naturally ripened cheese.

As far as the overall flavour was concerned, Pack-Age™ ripened cheese closely followed the naturally ripened cheese.

The foil-ripened cheese finished bottom of the pile.

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Vacuum bags v.s. thermoform solution



Vacuum bags (partner Südpack) are ready-to-use and can be supplied with different permeability and in different sizes and shapes.

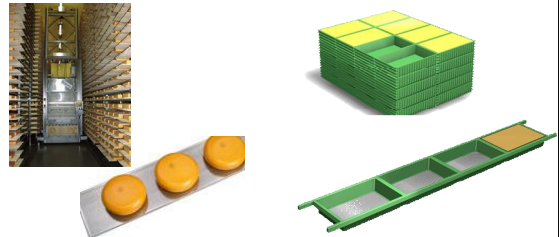
Thermoform solution is under development

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Pack-Age™ ripening on shelves

How to remove the water?
→ Wooden / stainless steel / plastic shelves



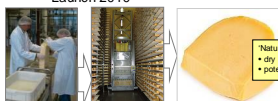
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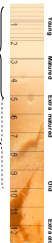
Pack-Age™ Cheese

Natural ripened cheese in an innovative next generation cheese packaging

- Natural cheese ripened in foil based packaging:
 - Natural dry-rind
 - Nature ripened flavour
 - Reduced cost of operation
 - Higher yield (higher moisture and no decrusting)
- Successful proof-of-principle:
 - Perfect mould free ripening (>1 yr)
 - Taste and texture almost equals traditional coated Gouda (joint tasting and confirmed by NIZO)
- Next steps:
 - Industrial trial(s)
 - Present within Gouda, Edam, Emmental and Manchego value chain
 - Launch 2010



Natural ripening in film:
• dry rind, taste, texture (slices, grated)
• potentially apply coating after ripening (pieces, wedges)



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Pack-Age™, a foil based breathable cheese ripening solution

- providing controlled ripening
 - Ripened flavour and natural dry rind
 - About the same structure as naturally ripened cheese
- optimizing balance of quality and costs
 - Higher yield
 - No cutting loss
- ensuring ultimate protection



www.Pack-Age.com

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