



**LALLEMAND**

**LALLEMAND SPECIALTY CULTURES**

**SURFACE & RIPENING CULTURE PORTFOLIO  
CHEESE APPLICATIONS**

# Yeast Portfolio

Product name	Culture type	Applications	Main Features and Benefits
FLAV-ANTAGE® DHF	<i>Debaryomyces hansenii</i>	Semi-hard, pressed cheeses	<ul style="list-style-type: none"> <li>• De-acidify the surface fast for other culture(s) to grow</li> <li>• Prevent undesirable flora growth</li> <li>• Produce mild fruity and creamy flavor notes</li> </ul>
FLAV-ANTAGE® DHR	<i>Debaryomyces hansenii</i>	Soft lactic and goat cheeses	<ul style="list-style-type: none"> <li>• Slowly de-acidify the surface for other culture(s) to grow</li> <li>• Prevent undesirable flora growth</li> <li>• Produce strong fruity flavor notes</li> </ul>
FLAV-ANTAGE® KL	<i>Kluyveromyce lactis</i>	Most cheese technologies	<ul style="list-style-type: none"> <li>• Soften the curd</li> <li>• Reduce bitterness</li> <li>• Limit post acidification</li> <li>• Produce fruity (apple) flavor notes</li> </ul>

# Geotrichum Portfolio

Product name	Culture type	Applications	Main Features and Benefits
FLAV-ANTAGE® GCA	<i>Geotrichum candidum</i>	Semi-hard and soft cheeses	<ul style="list-style-type: none"> <li>• Deliver an intermediate, white color surface</li> <li>• Produce sulfur compounds and fruity (apple) flavor notes</li> </ul>
FLAV-ANTAGE® GCB	<i>Geotrichum candidum</i>	Bloomy soft cheeses	<ul style="list-style-type: none"> <li>• Deliver a filamentous, white color surface (used with <i>Penicillium c.</i> to decrease mycelium density)</li> <li>• Strongly reduce bitterness</li> <li>• Produce mild fruity flavor notes</li> </ul>
FLAV-ANTAGE® GCC	<i>Geotrichum candidum</i>	Camembert, Goat, Pressed cheeses	<ul style="list-style-type: none"> <li>• Deliver a slightly wavy, intermediate, white to creamy white color surface</li> <li>• Produce fruity, flowery and strong cowshed flavor notes</li> </ul>
FLAV-ANTAGE® GCD	<i>Geotrichum candidum</i>	Camembert, Goat, Pressed cheeses	<ul style="list-style-type: none"> <li>• Deliver a thin, yeast-like, wavy, creamy white color surface</li> <li>• Produce fruity and intense creamy flavor notes</li> </ul>
FLAV-ANTAGE® GCM	<i>Geotrichum candidum</i>	Bloomy soft cheeses	<ul style="list-style-type: none"> <li>• Deliver a filamentous, white color surface</li> <li>• Produce fruity and mild creamy flavor notes</li> </ul>

# Brevibacterium Portfolio

Product name	Culture type	Applications	Main Features and Benefits
FLAV-ANTAGE® BLE3	<i>Brevibacterium linens</i>	Washed-rind and smeared-rind soft cheeses	<ul style="list-style-type: none"> <li>• Deliver a beige orange surface color (fast)</li> <li>• Dry non-sticky touch</li> <li>• Produce sulfur compounds and strong cowshed flavor notes</li> </ul>
FLAV-ANTAGE® BLIC	<i>Brevibacterium linens</i>		<ul style="list-style-type: none"> <li>• Deliver a red orange surface color (intensified when used during cheese wash)</li> <li>• Produce fruity and creamy flavor notes</li> </ul>
FLAV-ANTAGE® BLO	<i>Brevibacterium linens</i>		<ul style="list-style-type: none"> <li>• Deliver an orange surface color (stable)</li> <li>• Wet sticky touch</li> <li>• Produce fruity flavor notes</li> </ul>

# Staphylococcus xylosus Portfolio

Typically used in combination with other cultures, specifically *Brevibacterium l.*

Product name	Culture type	Applications	Main Features and Benefits
FLAV-ANTAGE® MIC2	<i>Staphylococcus xylosus</i>	Washed-rind and smeared-rind soft cheeses	<ul style="list-style-type: none"> <li>• No impact on surface color</li> <li>• Soften the curd and produce fruity flavor notes</li> </ul>
FLAV-ANTAGE® XULY	<i>Staphylococcus xylosus</i>		<ul style="list-style-type: none"> <li>• Deliver an orange surface color (earlier than <i>Brevibacterium l.</i>)</li> <li>• Soften the curd and produce fruity flavor notes</li> </ul>

# Flavor Blend Portfolio

Product name	Culture blend	Applications	Main Features and Benefits
FLAV-ANTAGE® FAA1	BL, SX, Yeasts, Arthrobacter	Washed-rind soft and semi- hard cheeses	<ul style="list-style-type: none"> <li>• Produce strong fruity (apple) and creamy flavor notes</li> <li>• Deliver an orange/red surface color</li> </ul>
FLAV-ANTAGE® FAA4	GC, BL, SX, Yeasts, Arthrobacter	Bloomy and washed-rind soft cheeses	<ul style="list-style-type: none"> <li>• Deliver a thin velvety white and orange surface color</li> <li>• Produce strong fruity (Munster) and cowshed flavor notes</li> </ul>
FLAV-ANTAGE® FAPM	GC, BL, SX, Yeasts, Arthrobacter	Washed-rind, soft, and pressed cheeses	<ul style="list-style-type: none"> <li>• Produce strong typical bloomy soft cheese flavor notes</li> <li>• Deliver a white velvety surface (surface turns beige with aging)</li> </ul>
FLAV-ANTAGE® FETRX1	GC, BL, Yeasts, Arthrobacter	Goat, soft and semi-hard cheeses	<ul style="list-style-type: none"> <li>• Produce fresh buttery and creamy flavor notes</li> <li>• Deliver a thin, dry, velvety white surface</li> </ul>
FLAV-ANTAGE® LMC	BL, SX, Yeasts	Washed-rind soft cheeses	<ul style="list-style-type: none"> <li>• Deliver a soft melty mouthfeel</li> <li>• Produce fresh buttery and creamy flavor notes</li> <li>• No impact on surface color</li> </ul>

# Penicillium Portfolio (1)

Used in bloomy soft cheese technologies. See Applications for specifics.

Product name	Culture type	Applications	Main Features and Benefits
VELV-TOP® PC 12	<i>Penicillium candidum</i>	All	<ul style="list-style-type: none"> <li>• Deliver an intermediate, white color surface</li> <li>• Moderate proteolytic and lipolytic activities</li> <li>• Provide mild antifungal (mucor) activity</li> </ul>
VELV-TOP® PC C2	<i>Penicillium candidum</i>	All (thermophilic)	<ul style="list-style-type: none"> <li>• Deliver a dense, white color surface</li> <li>• Moderate proteolytic and lipolytic activities</li> </ul>
VELV-TOP® PC IB1	<i>Penicillium candidum</i>	Creamy, rich	<ul style="list-style-type: none"> <li>• Deliver a thin surface</li> </ul>
VELV-TOP® PC PR1	<i>Penicillium candidum</i>	All (thermophilic)	<ul style="list-style-type: none"> <li>• Deliver a very thin, very white color surface</li> <li>• Produce little to no flavor (low proteolytic and lipolytic activities)</li> </ul>
VELV-TOP® PC PSM2	<i>Penicillium candidum</i>	Anti mucor	<ul style="list-style-type: none"> <li>• Provide strong antifungal (mucor) activity early in the process</li> <li>• Deliver a dense, breakable surface</li> </ul>

# Penicillium Portfolio (2)

Used in bloomy soft cheese technologies. See Applications for specifics.

Product name	Culture type	Applications	Main Features and Benefits
VELV-TOP® PC R	<i>Penicillium candidum</i>	All (mesophilic)	<ul style="list-style-type: none"> <li>• Deliver a very dense, white color surface</li> <li>• Produce strong traditional French Camembert flavor notes</li> </ul>
VELV-TOP® PC RIND01	<i>Penicillium candidum</i>	All	<ul style="list-style-type: none"> <li>• Deliver a very velvety surface</li> <li>• Produce little to no flavor (low proteolytic and lipolytic activities)</li> </ul>
VELV-TOP® PC TAM1	<i>Penicillium candidum</i>	Stabilized (thermophilic)	<ul style="list-style-type: none"> <li>• Produce low flowery flavor notes</li> </ul>
VELV-TOP® PC TAM5	<i>Penicillium candidum</i>	All	<ul style="list-style-type: none"> <li>• Deliver a dense homogeneous white color surface (moderate growth speed)</li> <li>• Low proteolytic and lipolytic activities</li> </ul>
VELV-TOP® PC TN	<i>Penicillium candidum</i>	All	<ul style="list-style-type: none"> <li>• The best Penicillium in the world!</li> <li>• Deliver a thin, very white color surface (high growth speed)</li> <li>• Produce little flavor</li> </ul>

# *Penicillium roqueforti* Portfolio

Used in soft and semi-soft blue cheese technologies.

Product name	Color	Proteolysis	Lipolysis	Growth speed	Salt tolerance	Applications
FLAV-ANTAGE® Blue PR5	Dark blue green	3	1	3	4	Gorgonzola (mild)
FLAV-ANTAGE® Blue PR14	Dark blue	3	2	4	4	Gorgonzola naturale, Danablu
FLAV-ANTAGE® Blue PR16	Bright dark blue	4	3	4	3	Stilton, Danablu

1 = Low   2 = Medium-Low   3 = Medium-High   4 = High