



Cheese catalogue

The guide for accelerating your business growth



Welcome to Chr. Hansen – the world’s most sustainable food ingredients company

Since 1874, Chr. Hansen has been working to help dairy companies throughout the world to produce high quality cheese and fresh dairy products. Today, Chr. Hansen has grown to be the leading supplier of novel dairy ingredients with over 40,000 strains of bacteria.

Chr. Hansen was ranked as the world’s most sustainable company in 2019 by Corporate Knights during the World Economic Forum. In 2020, we cemented our position by coming in second on the list – and ranking as the most sustainable food ingredients company.

We continuously collaborate closely with our customers. We wish to ensure that we can always help and inspire you to select the right ingredients for a given application. The needs and requirements of our valued customers are first priority and the main driving force behind our R&D.

In this catalogue, we provide an overview of our global cheese solution ranges comprising of every essential ingredient needed for best-in-class cheesemaking (for acidification, ripening, bioprotection, coagulation and yield optimization). We recommend that you contact your local Chr. Hansen contact person or local sales agent for further guidance.



CHR HANSEN

Improving food & health



Contents

Global trends and value chain	4
Our promise for cheese world	6
Our cheese solution areas	8
Our innovation approach	10
Cheese types and starter culture solutions	12
Ripening cultures and enzymes solutions	30
Rennet and coagulant solutions	36
Functionality enzyme solutions	40
Bioprotection solutions	42
Cheesemaking process	44
Product range overview by solution areas	45

Global mega trends pave path for new opportunities in the cheese world

Categories

Mega trends

Food for thought

<p>Consumer values</p> 	<ul style="list-style-type: none"> › Healthy convenience: Increased demand for healthy on-the-go snacking call for producers to use fewer recognisable ingredients. › Premiumisation: Accelerating interest in authenticity, naturalness and sustainability create room for premium cheese ranges. 	<ul style="list-style-type: none"> › Which consumer needs are driving your innovation? › How are you managing the interplay of consumer expectation on taste, health, safety, convenience and authenticity to differentiate yourself?
<p>Demographics</p> 	<ul style="list-style-type: none"> › Rising middle class: Increasing purchase power in emerging markets enable transition from basic staple food to packaged food. › Ageing population: Increase in interest for innovative food products that enable healthy ageing for population over 65 years. 	<ul style="list-style-type: none"> › What are your initiatives to address growing middle-class population? › What products are you innovating to address low-appetite in older population?
<p>Economics</p> 	<ul style="list-style-type: none"> › Shifting market frontiers: As competition intensifies in mega-cities, many new fast-growing cities are gaining economic importance. › Consolidation: Increase in M&A activity mean that large dairy players need to manage speed of integration of acquired plants. 	<ul style="list-style-type: none"> › What proactive steps are you taking to focus on rising consumer base in emerging cities? › How do you assess the competency of suppliers and partners who can assist in your integration efforts?
<p>Technology and science</p> 	<ul style="list-style-type: none"> › Automation: Use of automation and big data allow efficiency and scalability in production, leaving more time for innovation. › Bioinformatics: Genome sequence analysis leads to new insights about culture physiology and interactions. 	<ul style="list-style-type: none"> › How will you enhance production efficiency through automation and use of data? › Do you ever wonder what was in your starter cultures' DNA?
<p>Environment and sustainability</p> 	<ul style="list-style-type: none"> › Carbon reduction: Increased focus on environmental impact of meat production has led to development of alternative proteins. › Responsible consumption: Responsible supply chain and food waste reduction is becoming an important agenda for companies. 	<ul style="list-style-type: none"> › How can you make tasty protein alternatives to meat? › How can you use the power of beneficial bacteria to further a strong sustainability agenda?
<p>Regulation</p> 	<ul style="list-style-type: none"> › Empowered activism: Consumer associations and NGOs push for new standards for e.g. vegetarian, organic, halal, kosher, non GMO › Deglobalisation: Long established global trade agreements are being replaced by local bilateral agreements e.g. in US and UK. 	<ul style="list-style-type: none"> › What is your strategy for managing the complexity of labelling standards and requirements? › How are you managing the local regulatory bureaucracy in export markets?

Key trends influencing each player in the value chain from farm to fork



Milk suppliers

- › Industrialization
- › Supply consolidation
- › Utilization of new milk types

Cheese producers

- › Innovation speed
- › Product differentiation
- › Efficiency and automation
- › Scalability
- › Yield improvement
- › Waste reduction

Converters and manufacturers

- › Performance improvement
- › Shelf life extension
- › Traceability
- › Semi-finished cheese trading

Retailers and food service

- › Supply chain simplification
- › Transparency and traceability
- › E-commerce
- › Active consumer intelligence
- › Food waste reduction
- › Functionality in foodservice

Demanding consumers

- › Taste
- › Variety
- › Premiumisation
- › Convenience
- › Natural
- › Sustainability
- › Affordability



We are committed to solving challenges in cheesemaking with our deep expertise

- › Cater to specific customer needs with our tailored offerings
- › Leverage our technical expertise through a strong global application network

Greater than the sum of its parts – Partner to deliver lasting impact

Our core competency areas

Superior products	The very best - Cheese cultures and enzymes portfolio
Superior services	Proactive partnering - Co-development for value realization
	Engaged and strong application experts - Technical support to tackle complex problems
	On-time delivery - Global reach and compliant

Your value creation and business impact

- › Proven ingredients for any cheese applications - on specification
 - › Solutions that secure your consistent delivery – risk management
 - › Solutions that increase your output – yield optimization
 - › Solutions that kick-start new business opportunities for you - growth
-
- › Innovation days and co-creation of new products
 - › Market insights sparring, regulatory and market development
 - › Employee training sessions and strategy outlooks
 - › Connect to the world - Support from our local sales organization
-
- › Full, best-in-class technical application and laboratory services
 - › Ingredient customization to specific customer needs and products
 - › Trials, production audits and trouble-shooting
-
- › On-time delivery via global setup
 - › Detailed, multi-language documentation and info
 - › Local application/service support every day

Overview of Chr. Hansen solutions

<p>Starter cultures</p> 	<p>Rennet and coagulants</p> 	<p>Ripening cultures and enzymes</p> 	<p>Functionality enzymes</p> 
<p><i>Acidification solutions for consistent performance and flexibility in use</i></p> <ul style="list-style-type: none"> › Frozen DVS® › Freeze dried DVS® › Frozen EASY-SET® 	<p><i>Coagulation solutions for more cheese and improved whey quality</i></p> <ul style="list-style-type: none"> › CHY-MAX® Supreme, CHY-MAX® M and CHY-MAX® (FPC coagulants) › MICROLANT®, HANNILASE® and THERMOLASE® (Microbial coagulants) › NATUREN® and BIOREN® (Animal rennet) 	<p><i>Adjunct solutions for flavor perfection, improve appearance and efficiency</i></p> <ul style="list-style-type: none"> › DVS® CR › DVS® LH › DVS® PS › SWING® › SPICE-IT® 	<p><i>Functional solutions for yield, flavor, texture and lactose-free cheeses</i></p> <ul style="list-style-type: none"> › YieldMAX® › LactoYIELD® › Ha-Lactase™ › NOLA® Fit › AFILACT® › CHRISIN
<p>Bioprotection</p> 	<p>Natural colors</p> 	<p>Test kits</p> 	<p>Data and services</p> 
<p><i>Bioprotective solutions to control yeasts, molds and gas formation</i></p> <ul style="list-style-type: none"> › FreshQ® › BioSafe™ 	<p><i>Natural color and coloring foodstuff solutions for visual appeal</i></p> <ul style="list-style-type: none"> › WhiteWhey® › Beta carotene and Natural beta carotene › Annatto/Norbixin/Bixin › Paprika, Paprika+Annatto, Paprika+Beta carotene › Chlorophyll 	<p><i>Solutions to track quality and food safety improvements</i></p> <ul style="list-style-type: none"> › LactoSens™ › BRT® high sense › MilkSafe™ 	<p><i>Data and equipment solutions for automation and efficiency</i></p> <ul style="list-style-type: none"> › PhageWatch™ › CoaguSens® › ElastoSens® › CHR. HANSEN-CLIPPER® › AISY › REMCAT standards

We deliver every essential ingredient for best-in-class cheesemaking for all cheese types

	Cheddar	Continental and swiss	Cottage cheese	Grana	Pasta filata	Soft cheese	White cheese
Starter cultures	✓	✓	✓	✓	✓	✓	✓
Rennet and coagulants	✓	✓	✓	✓	✓	✓	✓
Ripening cultures and enzymes	✓	✓	✓	✓	✓	✓	✓
Functionality enzymes	✓	✓	✓	✓	✓	✓	✓
Bioprotection	✓	✓	✓	✓	✓	✓	✓
Application excellence	✓	✓	✓	✓	✓	✓	✓

Three core areas for accelerating business growth

Manage the present		Create the future
Risk Minus Solutions to secure consistent delivery	Yield Plus Solutions to increase output	Growth Multiply Solutions to kick-start new business opportunities
<ul style="list-style-type: none">› Secure consistent quality without additional investment/CAPEX› Mitigate production crisis with phage management teams› Enable efficient consolidation of multiple plants› Eliminate food safety risks when entering new markets	<ul style="list-style-type: none">› Get more value out of your current and future production set-up and drive your CSR agenda› Capitalize fully on the value of your total output and drive your CSR agenda› Lower your cost/cheese volume and increase whey value› Capture high-value opportunities by being flexible	<ul style="list-style-type: none">› Inspire and transform new product developments that fit market trends› Enable expansion into new markets through a local approach› Innovative concepts to make you win in premium categories› Renew interest in existing product lines by line extensions

Our innovative solutions, expertise and competencies are here to co-create the future with you.

New innovations in the spotlight

Risk Minus

Solutions to secure consistent delivery



DVS® BioSafe™ & FreshQ® for food waste reduction

- › Culture solutions to help reduce late blowing in continental cheese caused by Clostridia contamination.
- › Culture solutions to help improve quality and reduce waste with increased robustness against yeast and mold spoilage.

Yield Plus

Solutions to increase output

+1%



CHY-MAX® Supreme coagulant for significant yield increase

- › Fermentation produced coagulants documented by CoaguSens™ tool.
- › Help improve yield up to +1%, achieve faster and precise production, achieve superior functionality.



DVS® STi and EASY-SET® i400 cultures for superior food service performance

- › Unique set of cost effective, reliable and fast acidifying solutions.
- › Help producers of pasta filata and pizza cheese to secure performance.

EASY-SET® FLORA 100/900/1000C cultures for flexible line extension without CAPEX

- › Unique set of multiple robust mesophilic culture solutions.
- › Help producers of continental cheese like gouda, edam and semi-hard cheeses secure performance.

Growth Multiply

Solutions to kick-start new business opportunities



DVS® PS-50 for the premiumization trend and memorable moments

- › New tasty member to platform of ripening culture (propionic bacterium).
- › Help reach flavor perfection and famous eye formation in swiss and massdam types even with modern process optimization.



DVS® PureAppeal™ take control of browning for pure pizza appeal

- › Reduce the degree of browning by up to 100% and achieve predictable appearance.
- › Protect your pizza cheese from yeast and mold spoilage throughout the supply chain.

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Cheddar cheese

Market trends

Efficiency and yield improvement

- › To get the highest value out of the milk, manufacturers continuously optimize with focus on improvement of efficiency and yield

Product range diversification

- › Regional consumer demand for variety within format, flavor and/or texture leads to an increase in number of product launches

Designed for convenience

- › Globally 46% of consumers eat cheese as a snack¹
- › Due to large versatility in taste, texture and cheese body, cheddar serves as a popular base for innovative, convenient snacks

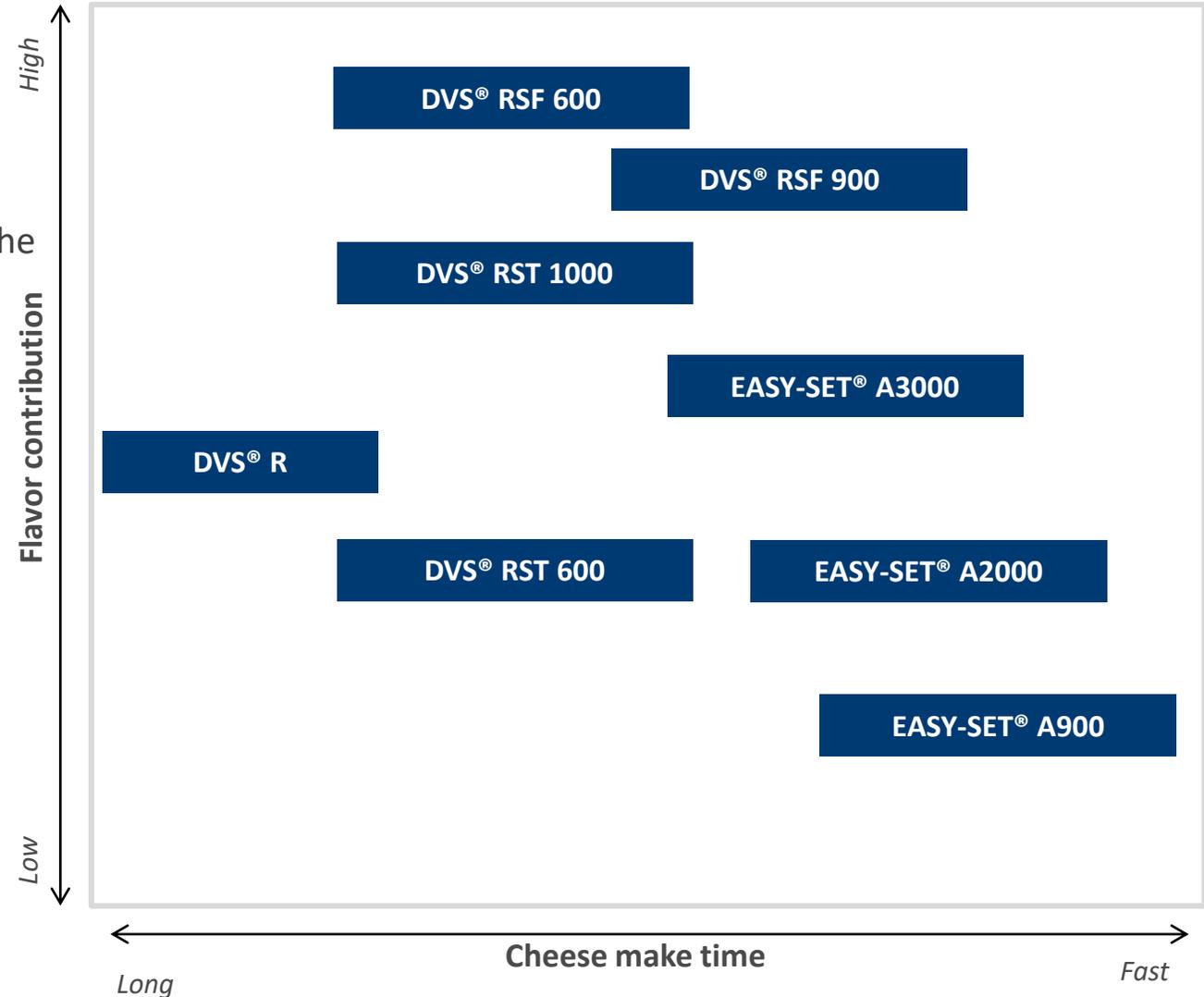
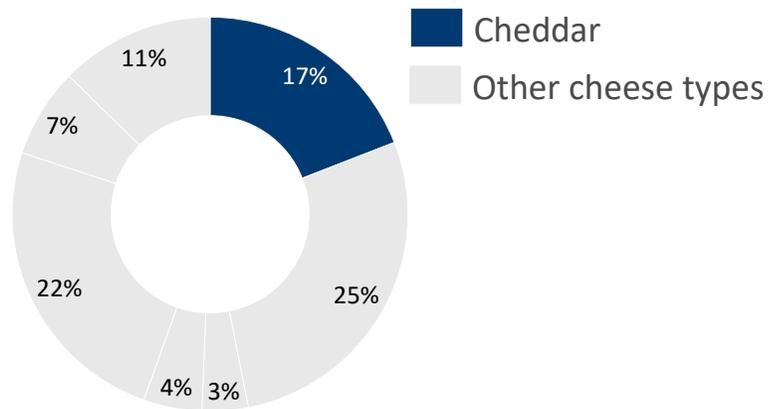


Cheddar cheese market and starter cultures overview

Market facts

- › Global cheddar production volume: 4.1m tons
- › Expected growth: 2-3% towards 2025
- › US manufacturers produce more than 60% of the total production volume

Volume share of global cheese production



Continental and swiss cheese

Market trends

Commoditization of the basic

- › Growing demand for basic continental cheese fueled by private label brands¹

Growth via premiumization

- › 50% of EU-consumers want to try new types of cheese for different meal occasions¹
- › More authentic cheeses that involve craftsmanship with sophisticated flavor profiles

Convenience as a constant

- › Rise of convenient on-the-go and ready-to-use cheese (e.g. for sandwich making)¹
- › Demand in foodservice for cheese ingredients to function as desired in professional kitchens

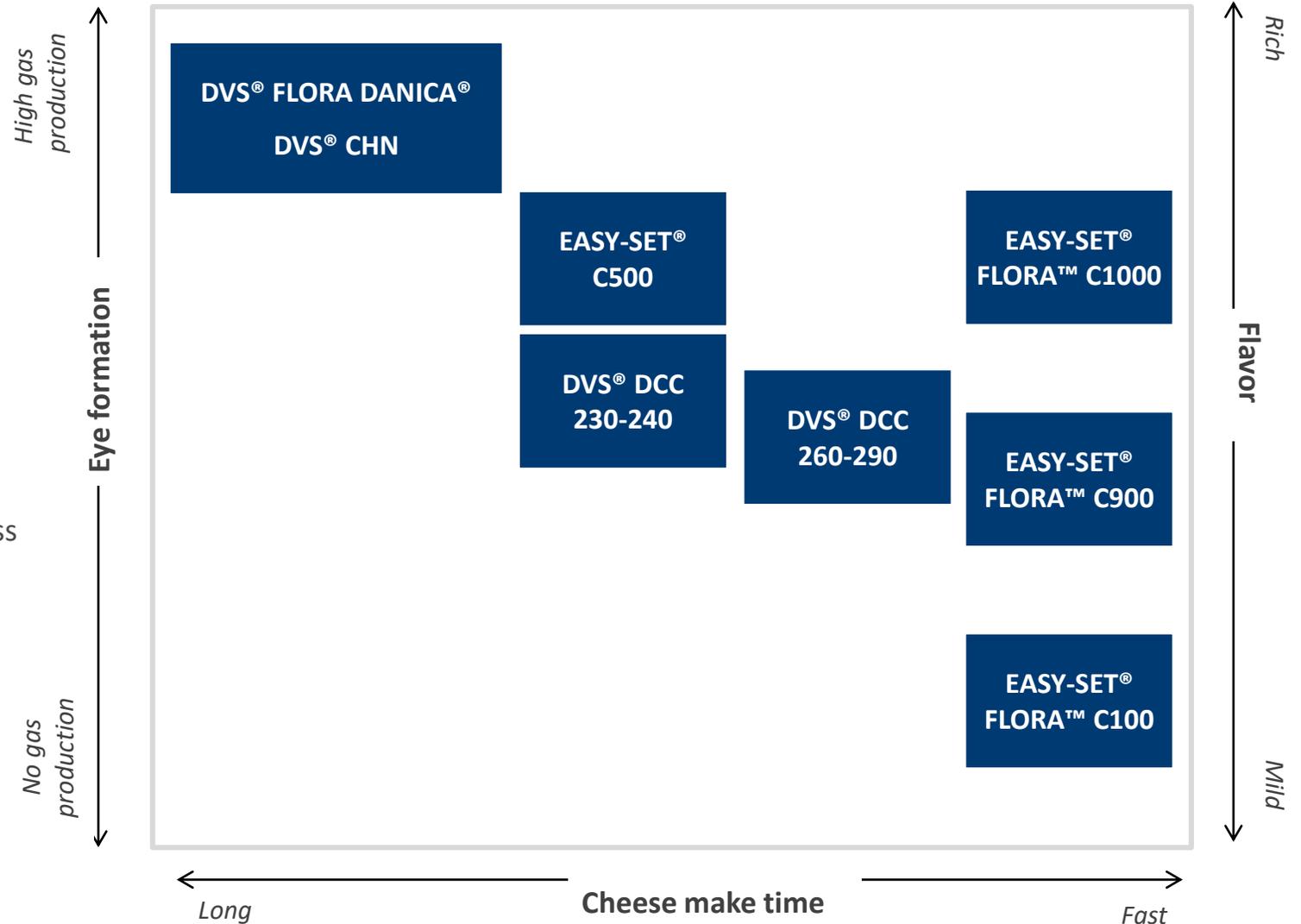
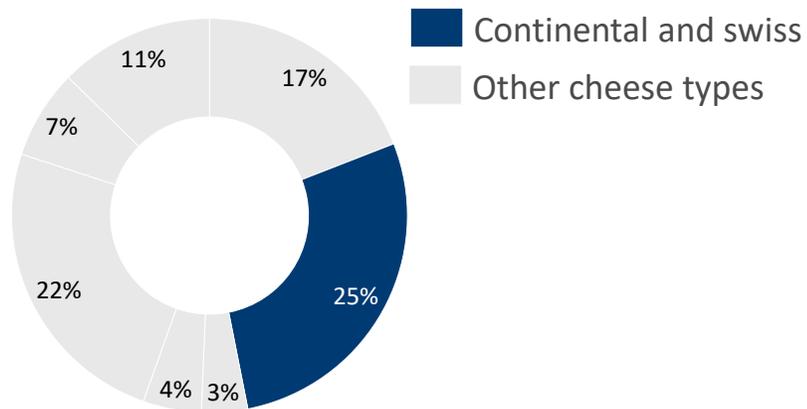


Continental and swiss cheese market and starter cultures overview

Market facts

- › Global production volume: continental 4.6m tons, swiss cheese 1.1m tons
- › Expected growth: 1-2% towards 2025
- › Continental including swiss cheese is the most widely produced cheese type

Volume share of global cheese production





EASY-SET® FLORA™: Revolutionary starter cultures for minimal risk in continental cheese

- › Increase yield up to 1% and reduce downgrades by up to 50% by reducing variation in production
- › Simplify your production by shortening culture make time from 18-24hrs to 10mins with a single-step process



PhageWatch™: Enabling effective phage management for consistent production

- › Leverage our expertise, robust culture ranges, and digital resources to manage your risk of phage
- › Our services include sample testing, phage and process reviews, regular meetings and transparent reporting on our PhageWatch™ digital tool

Cottage cheese

Market trends

Healthy convenience

- › Busy lifestyle calls for healthy snacking/ staying full longer
- › Need for food with high energy density for athletic diet and weight control

Threats from other segments

- › Offerings like Greek yogurt and skyr intervene the traditional cottage cheese market. New sources of differentiation required

New edge healthy home cooking

- › Cottage cheese has healthy appeal with low fat (4%) and high protein (11%) content
- › Affordable and low fat alternative to other cheese types, e.g. cream cheese and ricotta

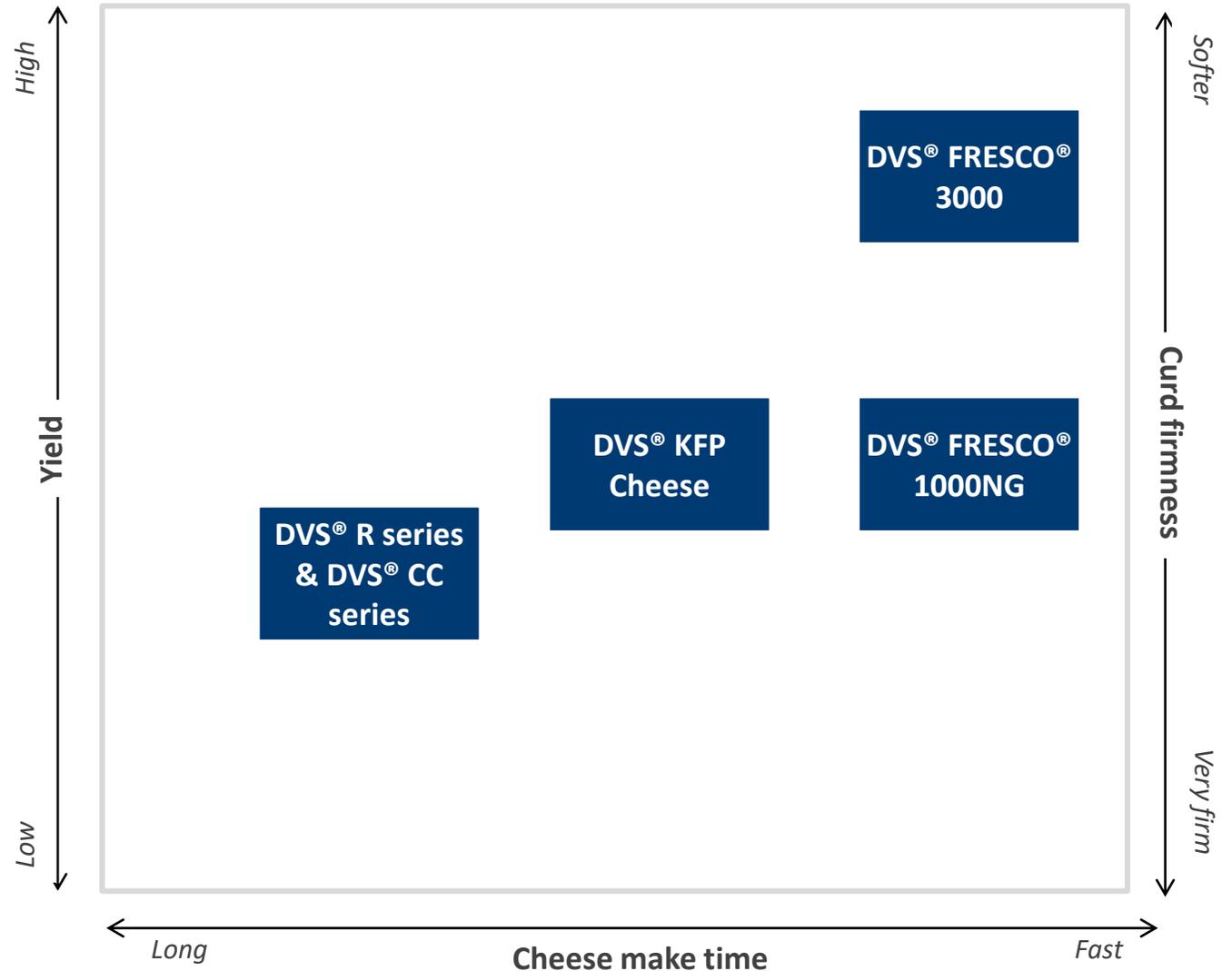
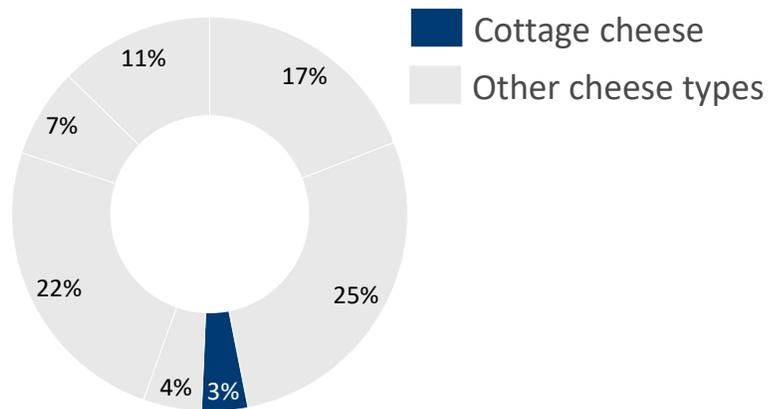


Cottage cheese market and starter cultures overview

Market facts

- › Global production volume: 0.8m tons
- › Expected growth: 2-3% towards 2025
- › Cottage cheese is primarily produced in North America, Germany, Poland and Scandinavia.

Volume share of global cheese production



Grana cheese

Market trends

Consumer demand for authenticity

- › Consumer desire for authentic flavor and variety has led to increased penetration in foodservice and retail

Versatile technology

- › Growing production of grana type on non-grana cheese equipment, primarily driven by North America²

Grana and parmesan go “glocal”

- › Globalization of grana and parmesan cheese types inspired by the heritage of parmigiano-reggiano and grana padano
- › Regional growth driven by e.g. Italian style pecorino and South American styles cotija and reggianito²

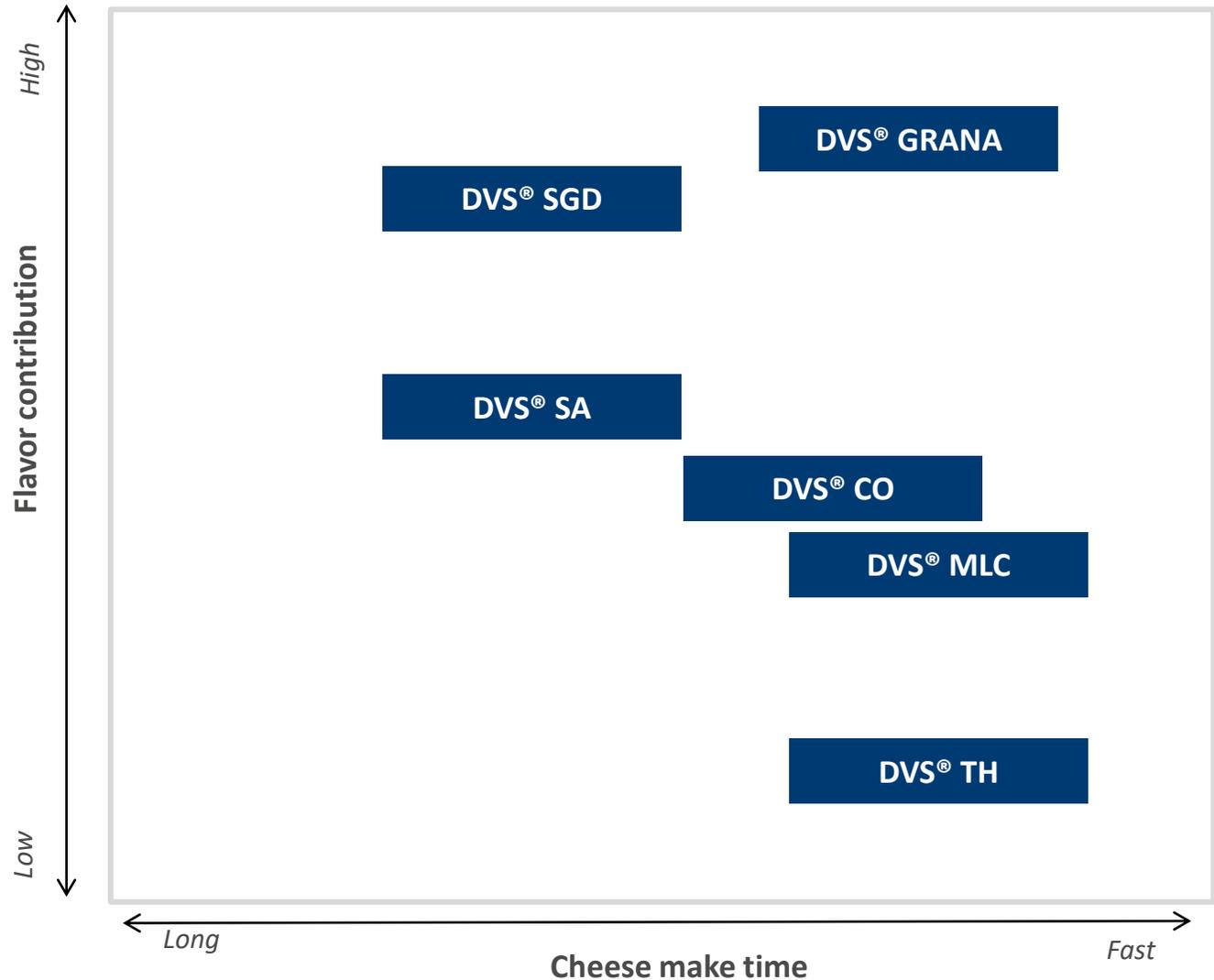
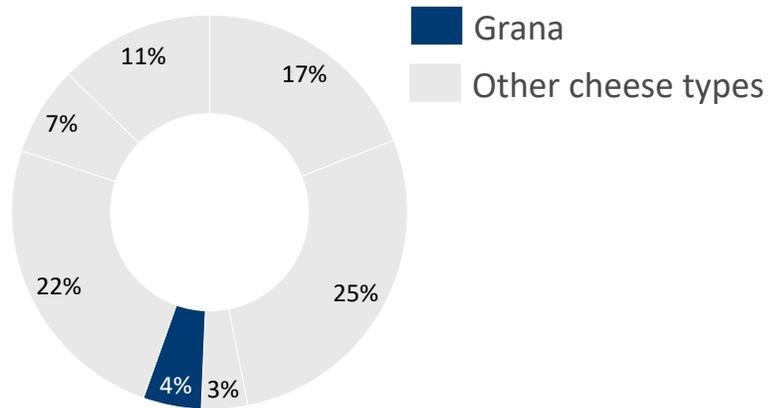


Grana cheese market and starter cultures overview

Market facts

- › Global production volume: 1m tons
- › Expected growth: 3-4% towards 2025
- › Italy and US produces 45% and 25% of global grana cheese respectively

Volume share of global cheese production



Pasta filata

Market trends

Increased pizza consumption

- › 78% of all pizzas have mozzarella as topping¹
- › Growth in global consumption of pizza in both mature and emerging markets, driven by appeal of cheese stretching and browning

Busy life-style demands convenience

- › Development of convenient packaging formats for quick meals, both at and away from home¹
- › High nutrition per cost value for pasta filata in pizza

Global acceptance of heritage

- › Local heritage varieties such as kashkaval and oxaca have penetrated mainstream markets

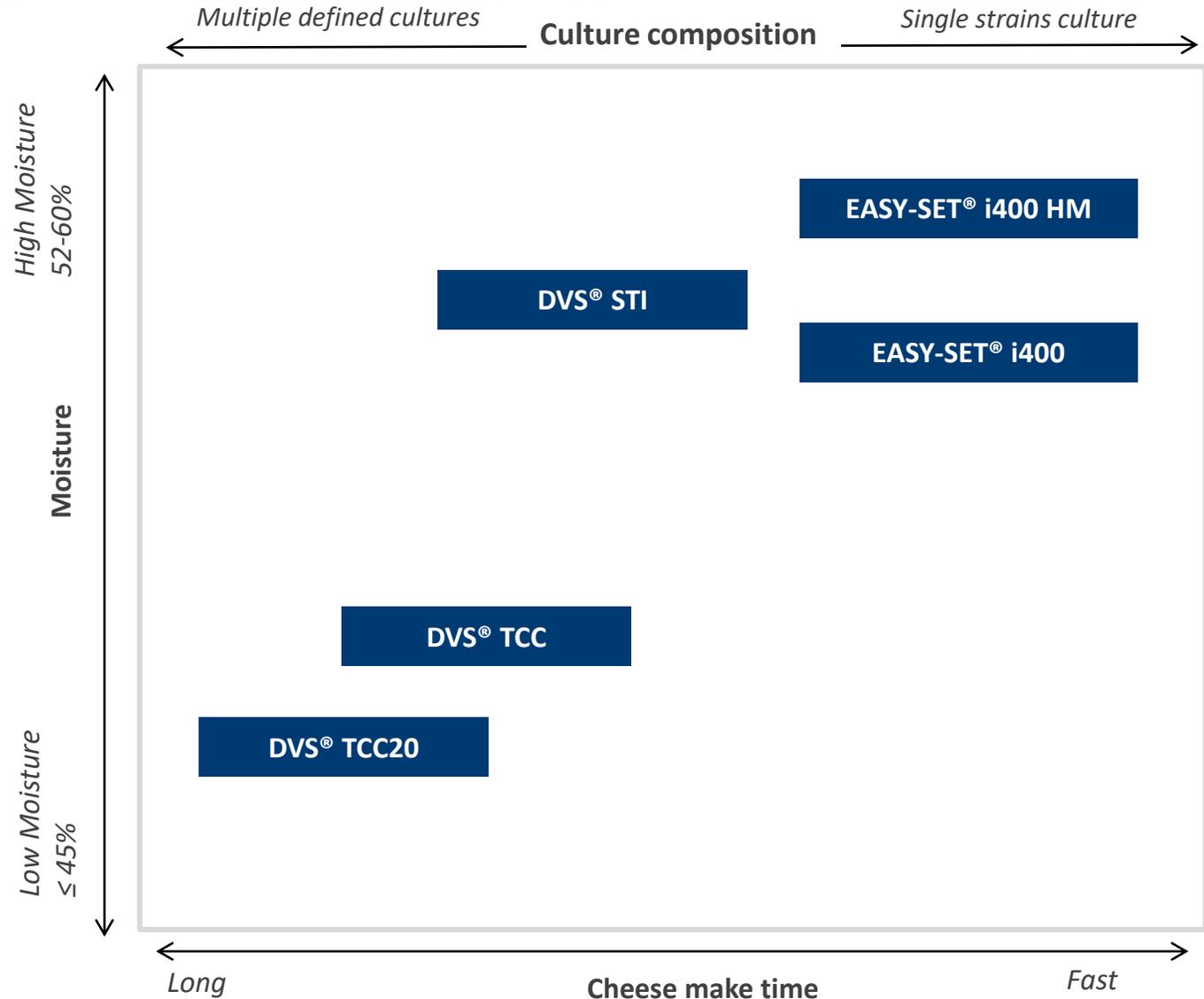
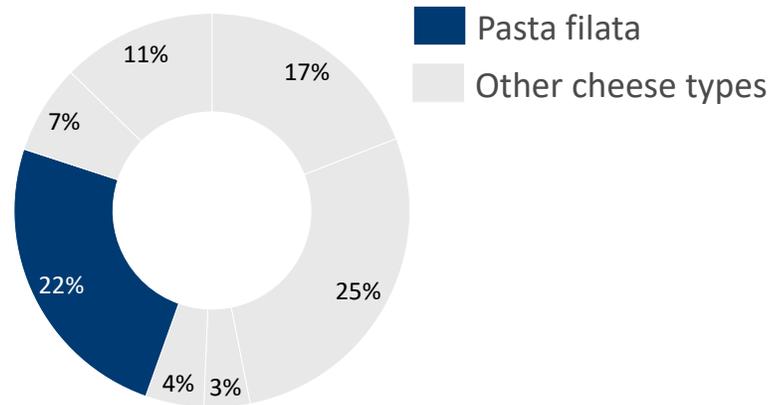


Pasta filata market and starter cultures overview

Market facts

- › Global production volume: 5.6m tons
- › Expected growth: 3-5% towards 2025
- › Large investments are being made to increase global production capacity

Volume share of global cheese production





Use our cohesive mix of solutions for the perfect “instagrammable” pizza

- › Ensure consistent production with DVS[®] STi starter culture, increase yield with CHY-MAX[®] coagulant
- › Control browning with F-DVS[®] Pure Appeal™ culture, improve functionality with YieldMAX[®] enzyme



Create authentic soft cheese experiences for modern consumers

- › Create unique flavor profiles with DVS® solutions and appealing visual look with SWING® solutions
- › Achieve both craftsmanship character and consistent quality even at industrial scale

Soft cheese

Market trends

Premiumization via craftsmanship

- › Small producers use authentic storytelling to position their unique cheese varieties
- › Industrial cheese makers are finding new ways to tap into this trend to drive growth

Convenience for producers and consumers

- › 46% of global consumers eat cheese as a snack¹
- › Growth in food service and international trade³
demand for consistent texture and taste

“Instagramability”

- › The rise of social media as a platform to share food pictures fuel large varieties of soft cheese with complex surface and visual appeal

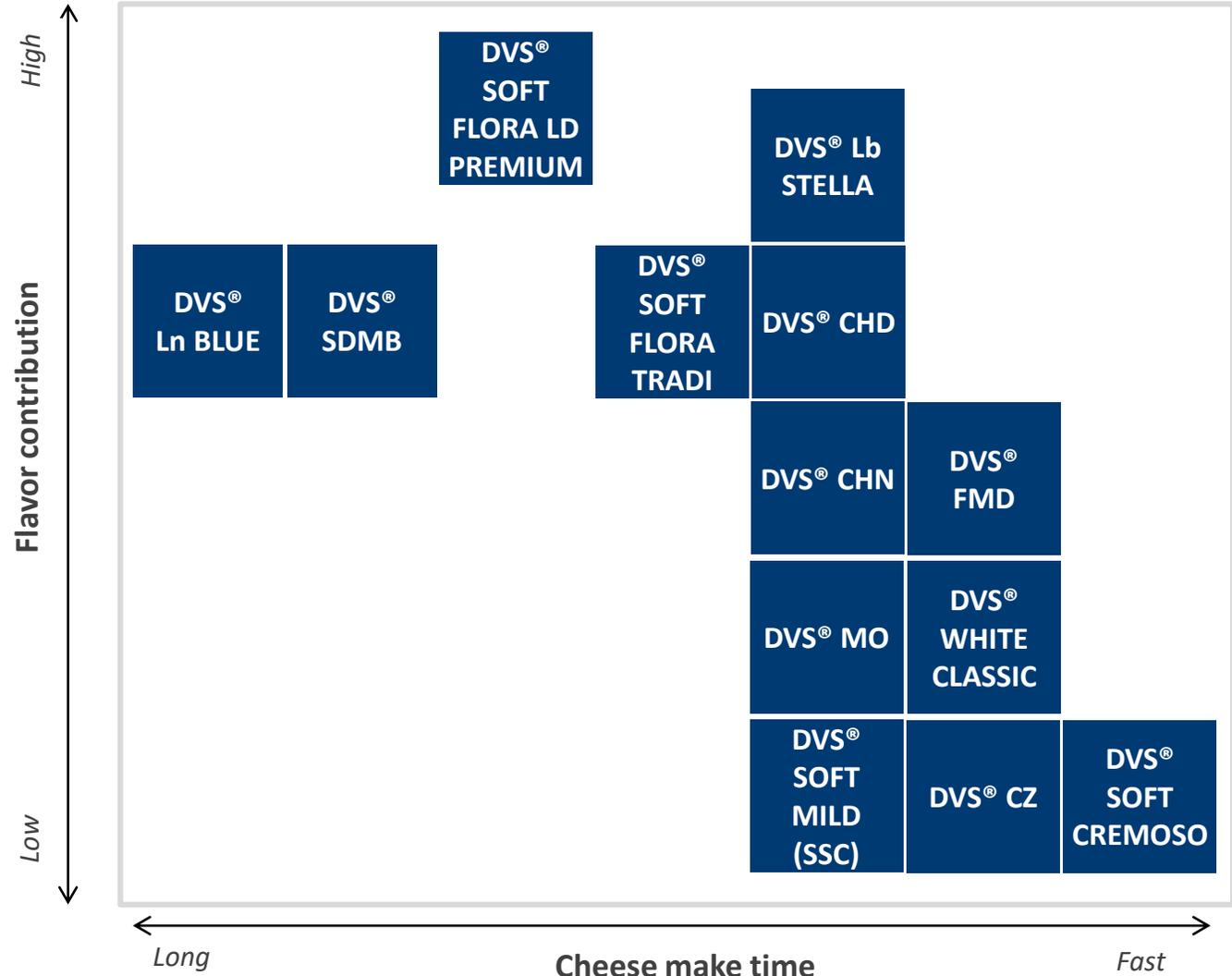
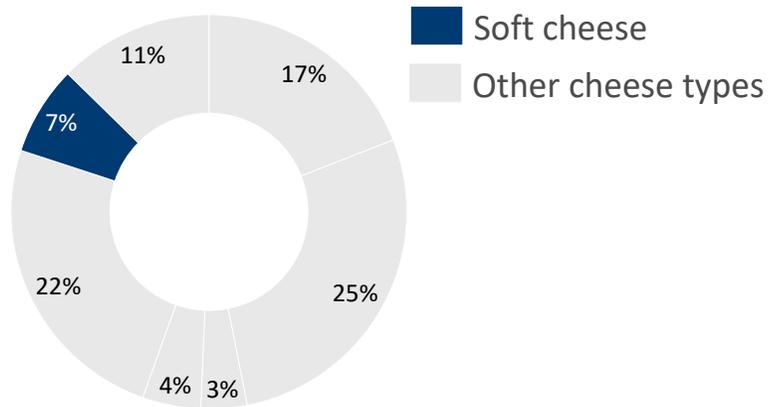


Soft cheese market and starter cultures overview

Market facts

- › Global production volume: 1.6 m tons
- › Expected growth: 1-2% towards 2025
- › 80% of global production is made in 5 countries: France, Germany, Italy, Canada and Argentina

Volume share of global cheese production



White cheese

Market trends

Middle class growth and convenience

- › Feta-style white brined cheese is one of the fastest growing cheese types worldwide
- › Increasing demand for convenient formats for salads and hot cooking

Tradition goes global

- › Traditional Mediterranean style white cheese is attractive globally due to healthy appeal in salads and as a meat alternative¹

Evolving technology for differentiation

- › Large developments in technologies for white cheese production
- › To stay ahead, deep knowledge of the interaction between milk base, cultures, enzymes and processing conditions is vital

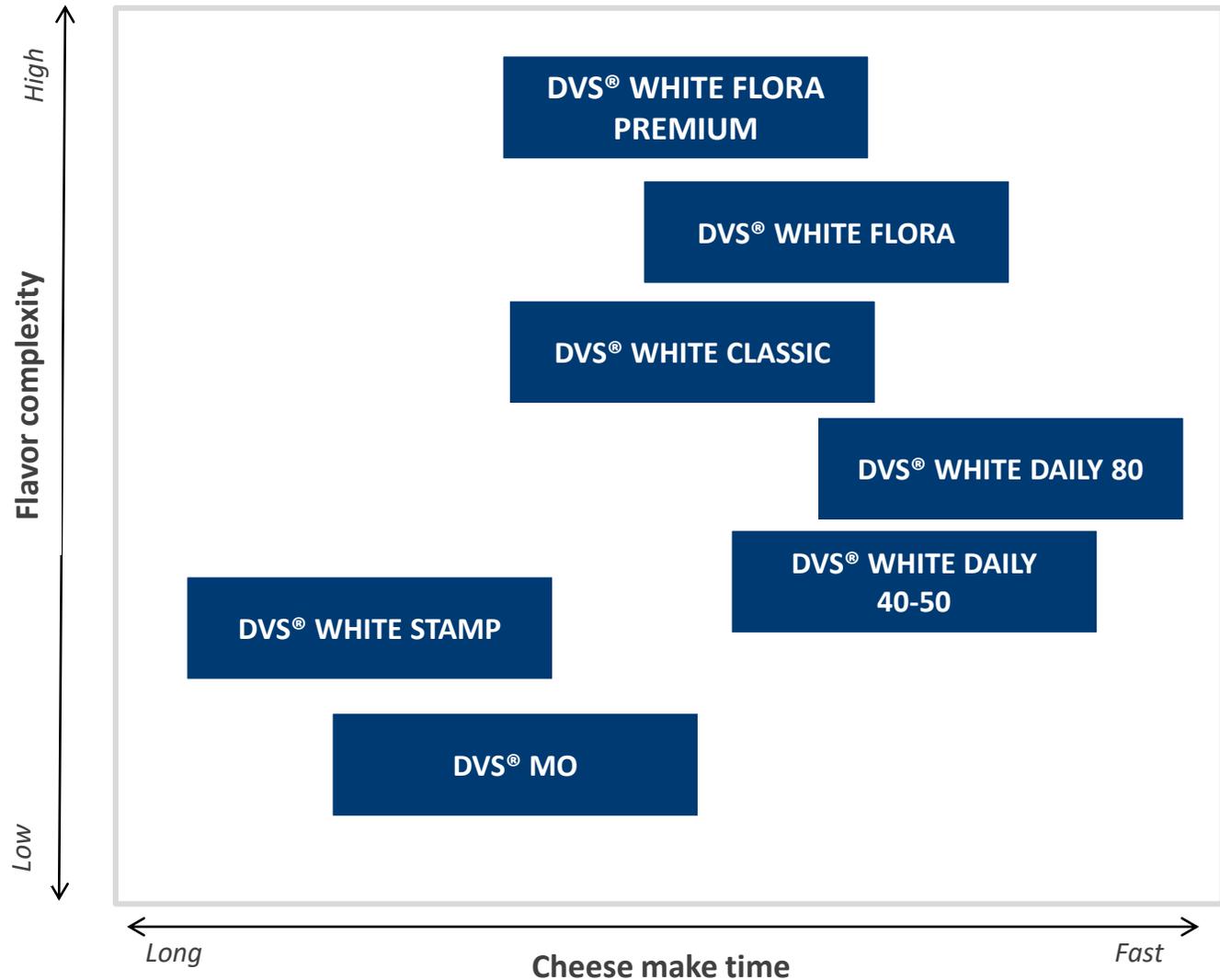
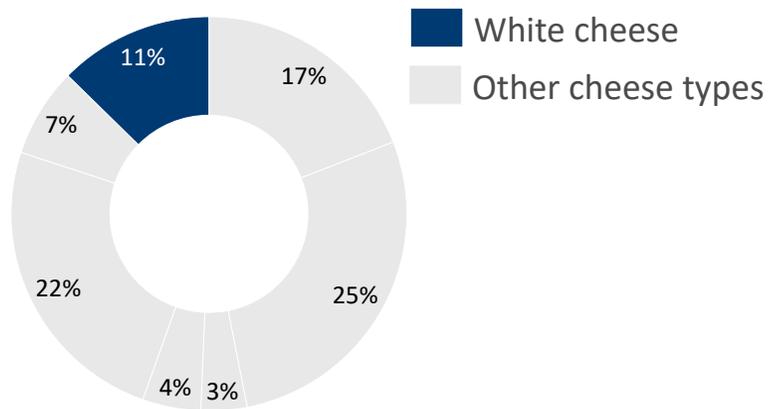


White cheese market and starter cultures overview

Market facts

- › Global production volume: 2.8m tons
- › Expected growth: 3-5% towards 2025
- › Over 80% of global volume is produced in the Greater Middle East, but a steady growth of production in Europe and North America.

Volume share of global cheese production



Ripening cultures and enzymes

Market trends

Premiumization as growth enabler

- › Growing demand for authenticity opens opportunity for industrialization of crafted cheese that drive profitable business.
- › 25% of all continental cheese product launches in Europe promote premium price positioning.¹

Taste as key purchase driver

- › Consumers are curious to discover new flavors and cheese types. Flavored cheese accounted for 25% of cheese launch activity in North America.¹
- › 36% of consumer find taste as the most important motive when purchasing non-processed cheese, before they look at price and brand.⁴



Our ripening solutions cover three distinct areas of differentiation

Flavor perfection



3 flavor segments for new as well as traditional flavor:

- › **Core** - for everyone: clean, creamy, buttery and fresh
- › **Character** - for explorers: fruity, nutty, savory and roasted
- › **Connoisseur** - for experienced: farmhouse, sulfur, piquant and earthy

Improved surface and appearance



Customized solutions for diverse texture, surface and appearance needs:

- › **Surface coating:** White mold, yeast and aerobic bacteria
- › **Veins formation:** Blue mold
- › **Eye formation:** Propionic bacteria

Controlled ripening speed



Solutions to optimize the cheese life cycle:

- › **Accelerated ripening:** Take products faster to market by reducing ripening time and saving costs
- › **Extension of shelf-life:** Reduce waste by increasing the sales window Increase export opportunities

Overview of ripening solution ranges



DVS®CR

Lactobacillus
Lactococcus lactis & cremoris

Flavor perfection

- › Create clean and fresh flavor and reduce bitterness.
- › Achieve broad range of exotic flavors by combining CR and LH strains- buttery, sulfur, cheesy and fruity flavor

DVS®LH

Lactobacillus helveticus

Flavor perfection

- › Experience sweetness and roasted notes along with reduced ripening time.
- › Increase the quality of low-fat cheese
- › Aid in the formation of crystals on long ripening cheeses.

DVS®PS

Propionic acid bacteria

Flavorful perfection

- › Create different flavor possibilities from mild buttery to sharp and pungent.

Improved appearance

- › Master the eye formation via different gas production potential.

SWING®

Yeast and mold

Improved surface and appearance

- › Create unique appearance and flavor with different propositions of yeast, mold and bacteria.

Controlled ripening speed

- › Prolong time to market using different SWING® solutions.

SPICEIT®

Animal and microbial lipase

Flavor perfection

Explore the diversity of flavors from animal and microbial lipases. SpiceIT® is the range of lipases that break down lipids and creates piquant flavor.



Tap into the growing premiumization trend with our ripening expertise

- › Target diverse consumer niches through a rainbow of 12 flavor profiles
- › Create authentic appearance and even new visual signature

Three flavor areas for diverse consumer needs in cheese

CORE



CLEAN



CREAMY



BUTTERY



FRESH

CHARACTER



FRUITY



NUTTY



SAVORY



ROASTED

CONNOISSEUR



FARMHOUSE



SULFUR



PIQUANT



EARTHY

Our ripening solutions to enable you to cater to diverse flavor needs

CORE

DVS® CR-213
DVS® CR-319

CLEAN

DVS® CR-Buttery
DVS® SDMB-4
DVS® SDMB-8

BUTTERY

DVS® Delight™

CREAMY

SWING® LAF-3
SWING® B. CASEI BC

FRESH

CHARACTER

DVS® CR-540 ***
Bouquet 01 *
SWING® LAF-5
SWING® LAF-7

FRUITY

DVS® CR-Savory 01
DVS® CR-Savory 02
DVS® CR-550

SAVORY

DVS® PS-1 **
DVS® PS-40 ****
DVS® PS-50 **
DVS® PS-60 *****
DVS® PS-80 *****

NUTTY

DVS® LH-B02 ***
DVS® LH EMFOUR®**
DVS® LH-32 **
DVS® LH-B01 **
DVS® CR-520 *

ROASTED

CONNOISSEUR

SWING® MIC SALSA-1
DVS® CR-Mature 01
SWING® FD GEO-CH
SWING® GEO CA
SWING® GEO-CB
SWING® GEO-CD-1

FARMHOUSE

SpiceIT® AG
SpiceIT® AL
SpiceIT® AM
SpiceIT® AC
SpiceIT® MR
SpiceIT® MPlus

PIQUANT

SWING® B. LINENS BL-1
SWING® B. LINENS BL-2

SULFUR

SWING® P.R. PR-1
SWING® P.R. PR-3
SWING® P.R. PR-4
SWING® P.R. PRG-3
SWING® PC TT-033
SWING® FD PCA-1
SWING® FD PCA-3

EARTHY

* = Level of sweetness

Pink = Eye formation

Blue = Affects surface or appearance

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Rennet and coagulants

Market trends

Yield and functionality

- › Continuous focus on maximizing value of milk through higher cheese yield and better whey quality
- › Increasing demand for cheese as an ingredient and convenient formats call for functionality improvements during production³

Preservative-free and organic

- › Big surge towards preservative-free coagulants globally
- › Increasing consumer interest for organic and more natural foods with fewer ingredients¹

Sustainability

- › UN global goals as a proactive tool to measure business impact. E.g. ensure sustainable consumption and production patterns



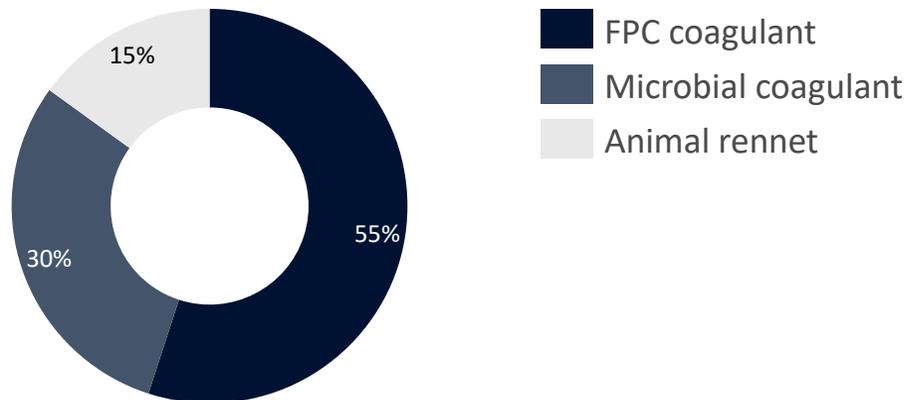
Rennet and coagulants market and solutions overview

Chymosin produced by fermentation (FPC) - Most used cheese coagulant. Delivers consistency and high cheese quality, higher cheese yield and improved whey quality

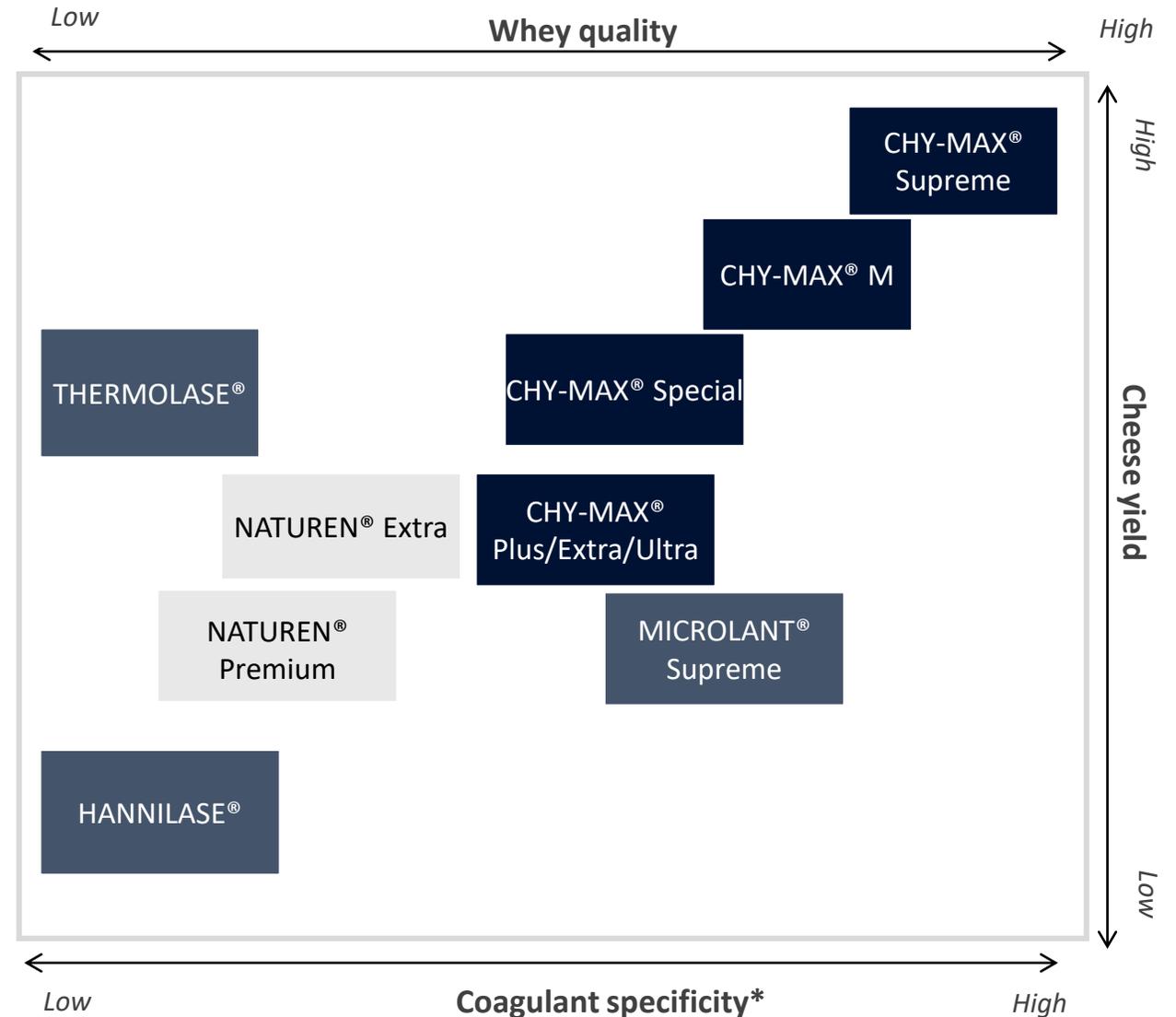
Microbial coagulants - Introduced in the 1960s. The ideal alternative, when there is a need to combine the demands for organic and vegetarian in one and same production

Animal Rennet - Traditional cheese coagulant. Great choice for high quality cheese with flavor intensity

Volume share of global coagulant use



See overview of rennets and coagulants at pp. 58-59



* Coagulant specificity is the ratio between desired and undesired protein breakdown. High specificity leads to firmer texture and reduced bitterness and vice versa.



Small change, big difference

CHY-MAX[®] Supreme

Groundbreaking coagulant CHY-MAX[®] Supreme is raising the industry standard



Higher yield

Gain up to 1% more cheese yield through higher fat and protein recovery*



Superior functionality

Less waste during slicing, grating or shredding through improvement in texture and shelf-life prolongation



Faster and more precise production

Higher vats production (up to 10% increase increase) Efficient cheese production through faster and more precise coagulation in cheese vats



Better whey quality

Additional value creation through reduction of fat, fines and sediments in whey

**Moisture adjusted*



CoaguSens™: Empowering data-driven optimization of coagulation

- › Map coagulation process to enable cutting at same firmness
- › Access to real-time data to help identify issues and to maximize yield

Functionality enzymes

Market trends

Yield as an industry driver

- › Cheesemakers are constantly seeking to produce considerably more cheese out of the same amount of milk

Growing demand for lactose free

- › An estimated 65% of the global population to experience some kind of lactose intolerance¹
- › Industry analysts forecast the global lactose free cheese market to grow 10% annually leading up to 2023³

Waste reduction on the rise

- › In Europe alone, 29m tons of dairy products are lost or wasted every year. Producers are looking for natural options to extend the shelf life of cheese



Functionality enzymes



AFILACT®

Lysozyme

Protection

Natural and safe option to avoid spoilage of cheese (late blowing & off flavor) caused by clostridia in milk. Preferred option to avoid nitrate addition that is unwanted for certain whey qualities. Ideal for all cheese types.

CHRISIN

Nisin

Protection

A natural antimicrobial compound that inhibits the growth of a wide range of Gram-positive bacteria including spore-forming bacteria. Results in improvement of cheese quality and shelf life extension.

NOLA®Fit / Ha-Lactase™

Lactase

Lactose-Free

Unique and valuable opportunities to build your brand and address market needs for 'lactose free' products, while maintaining an authentic cheese flavor.

LactoYIELD®

Cellulose oxidase

Yield boost

A novel enzyme that converts lactose to lactobionic acid. Used in cheese processes where an extra step is applied, like in pasta filata and cheddar cheeses. Significantly increases yield in cheese production with a limited effect on cheese functionality.

YieldMAX®

Phospholipase

Yield boost

An enzyme that primarily contributes to 1.8% yield improvement in pasta filata cheese. Helps improved functionality in aged/mature and fresh cheeses.

Bioprotection **Keep it great!**

Market trends

Sustainability

- › As the environmental impact of dairy production gains more media attention, brands need to continue to reassure consumers that they are striving to mitigate the climate impact of dairy farming and production, e.g. through improved production efficiency or lower waste

Real food

- › Staying in tune with consumer interest in cleaner labels, more cheese brands are adopting a natural positioning with less artificial ingredients

Consistent quality

- › 77-94% consumers in main cheese markets of Europe say they enjoy shopping for cheese.¹ Consumers expect their favorite cheese brand to have the same great look and taste that they like, each and every time

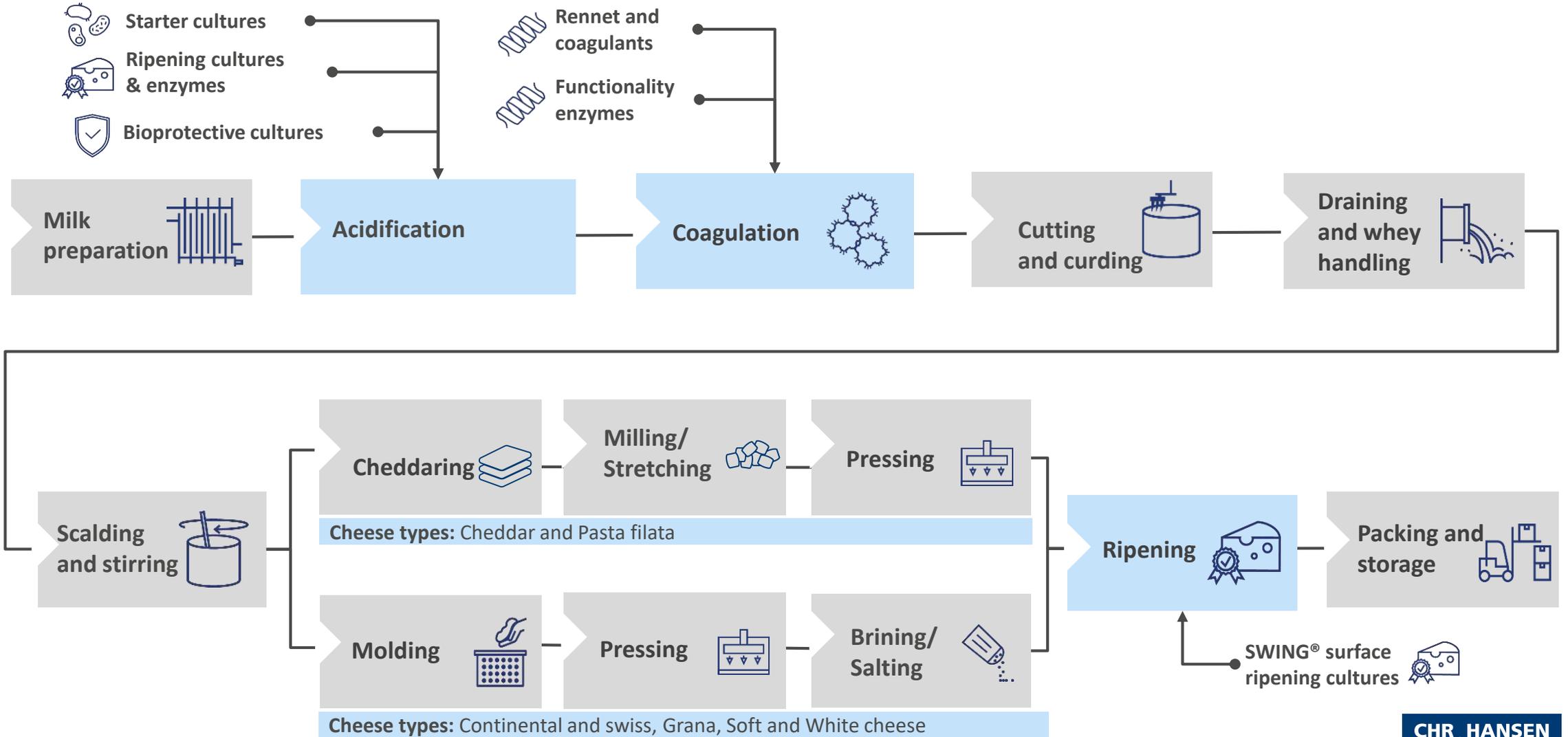




BioSafe™: Natural bioprotective solutions for your sustainability initiatives

- › Deliver consistent cheese quality by preventing late blowing and off-flavor development
- › Enhance the naturalness of cheese and whey by avoiding addition of nitrate and lysozyme

Specialized ingredients create value throughout the production process





Solution overview of Chr. Hansen ingredients for cheesemaking

Cheddar cheese cultures

Culture name	Product range	Culture type				Culture performance			Product form					
						Acidification speed	Phage robustness	Flavor contribution	Freeze-dried			Frozen		
		O	ST	LbH	LD				30X50U	25X200U	20X500U	10X500U		
DVS® R	603	•				4	3	3				704633		
	604											704634		
	607											704635		
	608											704636		
	609	•				4	3	3				716403		
	KFP 604											704659		
	KFP 608											704657		
	703											•		
704	713477	100123	100157											
707	713487	100124	100158											
708	713581	100125	100159											
DVS® RST	630	•				4	4	2				704643		
	632											704648		
	633											704649		
	634											704655		
	635											704654		
	643											704637		
	676	704638												
	743	•	•			4	4	2	713592	100242				
	744												100410	100409
	776												701877	100247
	1010	•	•			4	4	4					717727	
1020	717728													
1030	717730													
1040	717731													
1050	717732													
DVS® RSF	636	•	•			4	4	5				704645		
	637											704646		
	638											704647		
	639											704652		
	640											704651		
	641											704653		
	651											705251		
	653	705254												
	621	•	•	•	•	4	4	5				704641		
	736	•	•	•		4	4	5	713619		703082			
	742								713618		703063			
	925	•	•			5	5	5					704670	
	940												704671	
	945												704672	
950	714352													
960	714353													

Performance rating on a scale from 1 to 5, where 1 is low and 5 is high

Cheddar cheese cultures

Culture name	Product range	Culture type		Culture performance			Product form
		O	ST	Acidification speed	Phage robustness	Flavor contribution	Frozen
							6X1000U
EASY-SET® A3000	3010	•	•	4	5	4	712117
	3020						712123
	3030						712124
	3040						712125
	3050						712127
	3060						715183
EASY-SET® A2000	2010	•	•	4	4	2	683734
	2020						683735
	2021						705284
	2026						704416
	2040						683736
	2041						705362
	2045						694905
	2055						683737
	2065						698298
	2070						704057
	2076						704418
	2090						691294
	2120						702560
	2130						702562
EASY-SET® A900	910	•	•	5	4	1	666120
	920						666123
	925						698301
	926						706886
	940						666284
	945						668824
	955						673781
	965						699023
	980						689545
	986						707656
	47 990						691292

Performance rating on a scale from 1 to 5, where 1 is low and 5 is high

Continental cheese cultures

Culture name	Product range	Culture type							Culture performance				Product form														
									Acidification speed	Phage robustness	Flavor contribution	Gas production	Freeze-dried					Frozen									
		LD	D	L	O	ST	LbH	LbP					30x10U	30X50U	25X200U	20x350U	20X500U	350g	250U	10X350U	12x375U	10X500U	6X700U	5X750U	7X750U		
DVS® CHN	11													713490	100126		100160							704679			
	19	•							2	4	5	3		713582	100127		100161							704694			
	12																							704697			
DVS® FLORA DANICA		•							1	4	5	4	713630	713493	100129		100163							704685			
EASY-SET® FLORA C100	150																							708649		710588	
	160				•				4	5	2	0												708650		710589	
	170																							714083		714084	
EASY-SET® FLORA C500	501																							710342			692798
	502	•							3	5	4	4												708597			692780
	503																							708599			703153
EASY-SET® FLORA C900	950																							708651		708652	
	960				•	•			4	5	3	2												708653		708654	
	970																							716244		716245	
EASY-SET® FLORA C1000	1050																										
	1060		•	•	•				4	5	5	4										712227	708655			708656	
	1070																					712228	708657			708658	
DVS® DCC	230	•			•				4	4	4	3														704683	
	232	•	•		•				4	4	5	4														704690	
	240	•							4	4	5	3														704682	
	260																668195							704687			
	270																							704689			
	265																					707701					
	275	•			•	•	•	•	4	5	5	3										707702				712229	
	280																									712230	
	290																702933							704691			
DVS® STEM	02					•			5	4	1	0														674715	
	03																									674716	

Performance rating on a scale from 1 to 5, where 1 is low and 5 is high

Cottage cheese cultures

Culture name	Product range	Culture type		Culture performance					Product form			
				Acidification speed	Phage robustness	Flavor contribution	Moisture	Risk of floating curd	Freeze-dried		Frozen	
		O	ST						20X500U	10X500U	5X1000U	6X1000U
DVS® FRESCO® 1000NG	10	●	●	5	5	2	4	0			713390	
	20										713391	
	30										713843	
	40										713844	
	50										717562	
DVS® FRESCO® 3000	10	●	●	5	5	2	5	0				697941
	20											697942
	40											697944
	60											713943
	70											715773
DVS® CC	2	●		4	4	2	4	1				704710
	4											704711
	6											704712
	8											704713
DVS® R	604	●		4	4	2	4	1				704634
	608											704636
	704	●		4	4	2	4	1	100157			
	708											
DVS® KFP CHEESE	1	●	●	5	5	2	4	1				697228
	3											699643
	4											699646
	5											703376

Performance rating on a scale from 1 to 5, where 1 is low and 5 is high

Grana cheese cultures

Culture name	Product range	Culture type					Culture performance				Product form				
		ST	LbB	LbH	LbL	LbP	Acidification speed	Phage robustness	Flavor contribution	Thermo tolerance	Freeze-dried				Frozen
											20X50U	25X50U	25X200U	20X500U	10X500U
DVS® SGD	Premium	●	●	●	●	●	3	5	4	5	713361				
DVS® GRANA	102														704798
	105	●	●	●			4	4	5	4					710781
	106														710782
DVS® SA	500	●	●	●			3	4	4	4	710466			711574	
DVS® CO	03	●	●	●			4	4	3	4		706263		706520	
DVS® MLC	300	●			●	●	4	4	3	4			681239		
DVS® TH	4	●					4	4	1	4					704872

Performance rating on a scale from 1 to 5, where 1 is low and 5 is high

Pasta filata cultures

Culture name	Product range	Culture type				Culture performance					Product form								
						Acidification speed	Phage robustness	Flavor contribution	Moisture	Browning control	Freeze-dried			Frozen					
		ST	LbH	LbB							30X50U	25X200U	20X500U	8X500U	10X500U	5X1000U			
DVS® Pure Appeal™	01	●			●	1	5	1	1	5				720986					
EASY-SET® i400 High moisture	405	●				5	5	2	5	1				690870		689846			
	410													690871		690807			
	415													693645		693646			
	450													691479		668365			
EASY-SET® i400 Standard moisture	420	●				5	4	2	4	1				694687		694688			
	455													688871		668366			
	460													688872		670167			
	475													688873		677238			
DVS® STC	KFP 8	●				3	4	1	4	1				716455					
	KFP 9													720332					
DVS® STi	6	●				5	5	2	4	1						704889			
	7															705901			
	8															707752			
	9															707753			
	10	715693																	
	12	●				5	5	2	4	1							713516		
	13																713612	697994	705355
	14																713610	698000	705357
15	714890																714891	713821	
DVS® TCC	3	●				4	4	4	4	1						713497			
	4															713590	100144		
	5																601695		
	6																601697		
DVS® TCC	20	●	●			3	3	5	4	3	713498		100227		704873				
	50	●	●			4	4	4	4	3						711469			
	51															715426			

Performance rating on a scale from 1 to 5, where 1 is low and 5 is high

Soft cheese cultures

Culture name	Product range	Culture type		Culture performance					Product form							
		ST	LbB	Acidification speed	Phage robustness	Flavor contribution	Gas formation	Smooth texture	Freeze-dried		Frozen					
									30X50U	25X200U	20X250U	10X500U	9X500U (CLIPPER)	2X3000U (CLIPPER)	5X1000U	
DVS® SOFT MILD (SSC)	17	•		2	3	1	0	5				704912				
	100											704927				
	102	•		3	4	1	0	4				708622				
	103		708211													
	104		716198													
	1-01	•		3	5	1	0	4							718422	
	1-02		713423													
	1-03		718424													
	1-04		718425													
DVS® ST-B	01	•		3	4	1	0	4	713494	100183						
DVS® CZ	100	•		4	4	1	0	4			712568	707070				
	101		715513						712198							
DVS® SOFT CREMOSO	1-01	•		5	4	1	0	4			719702					
	1-02		719703													
	1-03		719704													
	1-04		719705													
DVS® SOFT FAST	06	•		5	5	1	0	3					712221	720455		
	07		712222						720456							
	08								720457							
	09		713206													
DVS® WHITE CLASSIC	1-01	•	•	4	5	3	0	2	719710	719708						
	1-02								719711	719709						
	1-03									720011						
	1-04								720014							
	200	•	•	4	5	3	0	2			712191					
	201								713842							
221	•	•	5	3	3	0	3								720887	
DVS® Lb Stella			•	3	3	5	0	2				709943				

Performance rating on a scale from 1 to 5, where 1 is low and 5 is high

Soft cheese cultures

Culture name	Product range	Culture type				Culture performance					Product form					
		Ln	LD	D	O	Acidification speed	Phage robustness	Flavor contribution	Gas formation	Smooth texture	Freeze-dried			Frozen		
											30X50U	25X200U	20X500U	20X250U	10X500U	2x3000U (CLIPPER)
DVS® SOFT FLORA LD PREMIUM	1-01		•			2	4	5	3	2					720803	
	1-02					2	4	5	3	2					720804	
DVS® FLORA	FRESH		•			3	4	4	2	2					704925	
	TRADI		•			3	4	4	5	2					704707	
DVS® SOFT FLORA LD	1-01		•			4	4	4	2	1						719696
	1-02															720697
DVS® FMD	0046		•			4	4	4	3	2					704919	
	0114														704920	
DVS® CHN	14		•			1	4	5	4	3					704905	
	15														704906	
DVS® CHD	1			•	•	3	4	4	3	2					704918	
	2														705412	
DVS® SDMB	4														704913	
	6			•		1	4	5	3	3					704916	
	8														712566	
DVS® SOFT FLORA D	1-01			•		1	4	5	3	3						718540
DVS® MO	10										713625		706428			
	20				•	3	4	3	0	1	713517		706429			
	30										713626		706430			
DVS® Ln BLUE	1-01	•				0	5	4	5	1				709241		

Performance rating on a scale from 1 to 5, where 1 is low and 5 is high

White cheese cultures

Culture name	Product range	Culture type				Culture performance				Product form										
						Acidification speed	Phage robustness	Flavor contribution	Moisture retention	Freeze-dried			Frozen							
		O	ST	LbB	LbH					30X50U	25X200U	20X500U	20X50U	20X200U	20X250U	10X500U	5X1000U			
DVS® WHITE CLASSIC	1-01					3	5	4	4	719710	719708									
	1-02		•	•									719711	719709						
	1-03													720011						
	1-04													720014						
	200					3	5	3	4							712191				
	201		•	•															713842	
		221		•	•		5	3	3	4								720887		
DVS® WHITE DAILY 40-50	40									713474										
	41									713591										
	42	•	•	•		4	4	4	2	713616										
	50									713595										
	51									713596										
DVS® WHITE DAILY 80	80									713620										
	81	•	•	•	•	5	5	5	3	713621										
	82									713622										
DVS® WHITE STAMP	1000		•			1	4	3	4				713705							
	1001																713706			
DVS® WHITE FLORA	1																713475			
	2	•				3-4	5	4	4								717657			
	3																718384			
DVS® WHITE FLORA PREMIUM	1-01													720228						
	1-02	•	•			3	5	5	5					720229						
	1-03													720230						
DVS® MO	10									713625		706428								
	20	•				2	4	2	4	713517		706429								
	30										713626		706430							

Performance rating on a scale from 1 to 5, where 1 is low and 5 is high

Ripening cultures and enzymes

Culture name	Product range	Culture type										Culture performance			Freeze-dried	Product form								
												Flavor contribution	Gas production	Faster ripening	Frozen									
		LbH	LbL	LbP	Lb-cu	Lb-jo	Lb-pl	Lb-rh	O	P ac	Lb-ac				25X200U	20X150U	10X200U	16X250U	10X475U	10X500U	6X1000U	3X2000U		
DVS® CR	213											●			3	0	1			704714				
	312											●			3	0	1						704716	
	319											●			3	0	1		713117				704717	
	520	●		●								●			5	0	3					704718		
	540	●	●									●			5	0	4					704719		
	550			●								●			5	0	2					704721		
	501	●		●								●			4	0	3						711064	
	Bouquet01		●				●					●			4	0	2						710317	
	Buttery01			●					●			●			4	0	2						710314	
	Mature01				●		●			●	●	●			4	0	2						710315	
	Savory01	●						●		●		●		●	4	0	3						714131	
Savory02	●						●			●	●		●	4	0	3						714132		
DVS®	Delight 01	●												5	0	3							714130	
DVS® LH	32	●												5	0	4			704806					
	B01	●												3	0	2						704803		
	B02	●												5	0	5	100185					704804		
	B03	●												4	0	3						705257		
	EMFOUR®	●												5	0	NA						704802		

Performance rating on a scale from 1 to 5, where 1 is low and 5 is high

Ripening cultures and enzymes

Culture name	Product range	Type		Culture performance			Product form			
		D	PAB	Flavor contribution	Gas production	Faster ripening	Freeze-dried	Frozen		
							30X5U	20X250U	10X500U	20X500U
DVS® PS	1		●	3	2	3	713585		704891	
	4			5	4	4	713586	704894	704893	
	40			5	4	4			704896	
	50			3	3	4			718377	
	60			4	5	4				704898
	80			4	5	4				708144
				4	3	1				704913
DVS® SDMB	8	●		4	3	1			712566	

Enzyme name	Product range	Type		Enzyme performance			Product form		
		Enzyme	Flavor contribution	Gas production	Faster ripening	Powder			
						0.5kg	1kg	5L	
SpiceIT®	SpiceIT® AC, Calf Lipase	●	NA	NA	NA		712149		
	SpiceIT® AG, Goat Lipase						712150		
	SpiceIT® AL, Lamb Lipase						712151		
	SpiceIT® AM, Mixed Animal Lipase						712152		
	SpiceIT® MR, Microbial Lipase							710600	
	SpiceIT® MPlus, Microbial Lipase						719181		

Performance rating on a scale from 1 to 5, where 1 is low and 5 is high

Ripening cultures and enzymes

Culture name	Product range	Culture performance					Product form				
		Aroma	Taste	Deacidification	Texture impact	Appearance	Freeze-dried				Liquid
							5x10U	10U	40U	50U	10U
SWING® BL/BC	SWING® B. CASEI BC	3	5	2	3	Neutral		200702			
	SWING® B. LINENS BL-1	4	5	2	2	Orange		200699			
	SWING® B. LINENS BL-2	5	5	2	2	Very orange		200701			
SWING® GEO	SWING® FD GEO –CH	4	5	5	3	Very white		683643			
	SWING® GEO CA	4	5	5	2	Beige				200691	
	SWING® GEO CB	4	5	5	2	Beige				200692	
	SWING® GEO CD-1	3	5	3	2	White				200693	
SWING® LAF	SWING® LAF -3	2	5	5	2	Neutral		200941	674031		
	SWING® LAF -4	4	5	4	2	Neutral		200865			
	SWING® LAF -5	4	5	4	2	Neutral		201016			
	SWING® LAF -7	5	5	4	2	Neutral		610590	674032		
	SWING® LAF TRIO	4	5	4	2	Neutral		201189			
SWING® PC	SWING® FD PCA-1	3	4	4	4	Very white		660413		660416	
	SWING® FD PCA-3	5	5	4	5	Very white		660450		660451	
	SWING® PC TT-033	5	5	4	4	Very white		670630			
SWING® PR	SWING® P.R. PR-1	3	4	3	3	Blue green	720860				
	SWING® P.R. PR-3	5	4	4	5	Dark green		200681			
	SWING® P.R. PR-4	4	4	4	5	Dark green		200977			
	SWING® P.R. PRG-3	4	4	4	5	Pale green		600740			
SWING® SALSA	SWING® MIC SALSA-1	5	4	2	4	Yellow/orange		201026	674033		
	SWING® MIC SALSA-2	2	3	2	2	Neutral			674035		

Coagulants

Coagulant name	Product	Coagulant performance				Product form													
		Cheese yield	Cheese firmness	Bitterness propensity	Whey quality	Liquid					Liquid (No benzoate added)			Granulate (No benzoate added)					
						12x0.1L	6x1L	5L	20L	1000L	5L	20L	1000L	100x20 tablets	20x0.05K G	20x0.5 KG	5 KG		
NATUREN®	NATUREN® Extra 1000	3	3	2	3						115304								
	NATUREN® Extra 220					115203		115205	115210		111205								
	NATUREN® Extra 220 Halal									115604									
	NATUREN® Extra 1000 NB Halal									111604									
	NATUREN® Extra 1115 NB																140714	140722	
	NATUREN® Premium 225	3	2	3	2				113105										
	NATUREN® Premium 195							112805		111805									
	NATUREN® Premium 145					113502	113504	113505		111504	111505								
	NATUREN® Premium 145 Halal							112505	112510		112405								
	NATUREN® Premium 1400 NB*													141214					
	NATUREN® Stamix 160	2	1	4	2								114205						
	NATUREN® Stamix 1150 NB*														145314				
	NATUREN® Stabo 230	1	1	5	2				118205										
NATUREN® Cordero	2	2	3	2			112304												
BioRen®	BioRen® Classic 80L150	3	2	3	2	401021	401002	401004	401005										
	BioRen® Classic 80LHA150							401205	401210		401105	401110							
	BioRen® Premium 95L230							411105			411205								
	BioRen® Premium 95LHA230	3	3	2	3							411405							
	BioRen® Premium 97PHA100												410129	410111	410114	410122			
	BioRen® Paste Dolce	3	2	1	2		421002												
	BioRen® Paste Semiccante	3	2	1	2		422002	422004											
	BioRen® Paste Piccante	3	2	1	2		423002	423004											
THERMOLASE®	THERMOLASE®625	3	3	3	2							115705							
MICROLANT® Supreme	MICROLANT® Supreme 750	2	4	2	3				206705			206905	206910						
	MICROLANT® Supreme 200							206105		206204	206205	206210							
HANNILASE®	HANNILASE® XP 750	1	2	4	2				115905	115910	118904	118905	118910						
	HANNILASE® XP 200						115804	115805	115810		118805	118810							
	HANNILASE® L 2000					116804	116805												
	HANNILASE® L 205	1	2	5	1				116505										
	HANNILASE® L 2200 Powder														146014				
	HANNILASE® L 3000 Powder														146314				

Performance rating on a scale from 1 to 5, where 1 is low and 5 is high

Coagulants

Coagulant name	Product range	Coagulant performance				Product form												
		Cheese yield	Cheese firmness	Bitterness propensity	Whey quality	Liquid				Liquid (No benzoate added)		Granulate (No benzoate added)						
						6x1L	5L	20L	1000L	20L	1000L	10x100 Sticks	80X0.075K G	20X0.5KG	5KG			
CHY-MAX® Supreme	CHY-MAX® Supreme 1000	5	5	1	5	178602	178604	178605		178705								
	CHY-MAX® Supreme 200							178205		178305								
	CHY-MAX® Supreme 2500 Powder NB*															177214		
CHY-MAX® M	CHY-MAX® M 1000	4	4	1	4	127202	127204	127205	127210	129205	129210							
	CHY-MAX® M 600 KFP									128205								
	CHY-MAX® M 200									127502	127504	127505	127510	127405	127410			
	CHY-MAX® M 2500 Powder NB*																147214	
	FAR-M® Sticks														147028			
CHY-MAX® Special	CHY-MAX® Special 200	4	3	2	4					127305	127310							
CHY-MAX®	CHY-MAX® Ultra	3	3	2	3			117905	117910									
	CHY-MAX® Extra						117504	117505	117510	119505	119510							
	CHY-MAX® Plus						117404	117405	117410	119405	119410							
	CHY-MAX® Extra Powder NB*															142515	142514	142522
	CHY-MAX® Plus Powder NB*																142414	
	Hansen® Sticks															142425		

Performance rating on a scale from 1 to 5, where 1 is low and 5 is high

Functional enzymes

Enzyme name	Product range	Enzyme performance					Product form												
		Yield	Firmness	Flavor	Whey	Lactose-free	Liquid						Powder						
							1L	6X1L	5L	20L	1000L	25KG	10X0,5KG	1KG	5KG				
AFILACT®	Instant	NA	NA	NA	NA	NA							201063						
	Fluid																		200989
								200722											
										200724									
Chrisin	Chrisin C	NA	NA	NA	NA	NA								671535					
	Chrisin															502095			
YieldMAX®	YieldMAX®	5	2	3	4	NA			191204	191205									
LactoYIELD®	LactoYIELD®	5	2	1	NA	NA						191306							
NOLA® Fit	NOLA® Fit 5500	NA	NA	5	NA	5		350502	350504	350505	350510								
Ha-Lactase™	Ha-Lactase™ 5200	NA	NA	4	NA	4		450802	450804	450805	450810								
	Ha-Lactase™ Plus 5500	NA	NA	5	NA	4			451904	451905	451910								

Performance rating on a scale from 1 to 5, where 1 is low and 5 is high

Bioprotection **Keep it great!**

Culture performance	Product name		Culture type			Cheese type				Product form				
			O	Lb-rh	LbP	Continental & swiss	Pasta filata	Cottage cheese	White cheese	Freeze-dried		Frozen		
										25X100U	20X500U	10X65U	10X500U	
Clostridia Inhibition	DVS® BioSafe™	10	•			•						704642		
		20				•						712976		
		30				•							712977	
		40				•							712978	
Yeast & Mold Inhibition	DVS® FreshQ® Cheese	1		•	•			•	•				711617	
		3		•				•	•	717513	717512			
		4		•	•			•	•				717514	
	DVS® Pure Appeal™	01					•						720986	

Performance rating on a scale from 1 to 5, where 1 is low and 5 is high

Acronyms for Chr. Hansen cultures

Culture type	Culture characteristics	
O	<i>Lactococcus lactis</i> subsp. <i>cremoris</i> , <i>Lactococcus lactis</i> subsp. <i>lactis</i>	Mesophilic, Homofermentative, Flavor contribution
L	<i>Leuconostoc</i> spp.	Mesophilic, Heterofermentative, Gas production
D	<i>Lactococcus lactis</i> subsp. <i>lactis</i> biovar. <i>diacetylactis</i>	Mesophilic, Homofermentative, Flavor contribution, Gas production
LD	<i>Lactococcus lactis</i> subsp. <i>cremoris</i> , <i>Lactococcus lactis</i> subsp. <i>lactis</i> , <i>Lactococcus lactis</i> subsp. <i>lactis</i> biovar. <i>diacetylactis</i> , <i>Leuconostoc</i> spp.	Mesophilic, Heterofermentative, Flavor contribution, Gas production
ST	<i>Streptococcus thermophilus</i>	Thermophilic, Homofermentative
LbH	<i>Lactobacillus helveticus</i>	Thermophilic, Homofermentative, Flavor contribution
LbB	<i>Lactobacillus delbrueckii</i> subsp. <i>bulgaricus</i>	Thermophilic, Homofermentative, Flavor contribution
LbP	<i>Lactobacillus paracasei</i>	Mesophilic, Facultative heterofermentative, Flavor contribution
LbL	<i>Lactobacillus delbrueckii</i> subsp. <i>lactis</i>	Thermophilic, Homofermentative, Flavor contribution
Lb-cu	<i>Lactobacillus curvatus</i>	Mesophilic, Facultative heterofermentative, Flavor contribution
Lb-rh	<i>Lactobacillus rhamnosus</i>	Thermophilic, Facultative heterofermentative, Flavor contribution
Lb-pl	<i>Lactobacillus plantarum</i>	Mesophilic, Facultative heterofermentative, Flavor contribution
Lb-jo	<i>Lactobacillus johnsonii</i>	Thermophilic, Homofermentative, Flavor contribution
Lb-ac	<i>Lactobacillus acidophilus</i>	Thermophilic, Homofermentative, Flavor contribution
P ac	<i>Pediococcus acidilactiti</i>	Thermophilic, Homofermentative, Flavor contribution
PAB	<i>Propionibacterium</i>	Thermophilic, Heterofermentative, High gas production

A trial is all that it takes to get started

If you would like to experience what our cheese teams can do for you, we can arrange a trial.

When you choose to work with Chr. Hansen, we offer you full support. For instance, we supply application support that is focused on optimizing process parameters, to ensure best production outcomes. You will be assigned a dedicated Application Manager to help you on-site.

Whether you are already a customer or thinking about becoming one, providing us with just a few pieces of information about your current operations will enable us to identify how we can help you maximize value and secure leadership through our fully fledged solutions and competencies. Our teams of dairy experts is available to meet at your request.

With Chr. Hansen you get a partner with a range of ingredients that offer superior value supported by best-in-class application capabilities.

Every year, our customers engage in more than 1,000 development projects with us. Our customers have access to individually adjusted solutions. To support them we have located our application centres close to them. These 19 application centres are placed around the world and are complementing our 3 major development centres in Denmark, France and USA.

In total we spend around 7% of turnover on R&D. 14% of our employees work in R&D. We engage in +300 scientific partnerships with universities, research institutions, PhD students, etc. every year.

We are represented in +30 international scientific associations, advisory boards, etc. We have written over 125 publications in scientific journals and text books since 1989. We often serve as referees on scientific articles, examiners on PhD committees and speakers at scientific conferences.





Chr. Hansen Experts for the dairy industry

Chr. Hansen believes in improving the quality of food and health. We believe the best results are achieved when working closely with you.

Our experienced application and industry specialists provide you with the knowledge, inspiration, support and customized solutions you need to be successful.

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Market insight sources: 1= Mintel GNPD 2017 – 2020, 2= Chr. Hansen market insights 2020, 3=Euromonitor 2017 – 2020, 4= Chr. Hansen consumer study 2016

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