TEXTURE IMPROVEMENTS IN FLATBREAD

TIA Munich I October 24th, 2023

AGENDA

Texture improvements in flatbread

The world of flatbreads grouped by technology

Tortilla

New High Protein Tortilla

Public

Yufka

“The thin challenge”

Lavash

“The daily bread”

Roti

“Need the right flour”

Thin bread

“Adding fiber keeping the moist and soft texture”

Public

FLATBREADS GROUPED BY TECHNOLOGY

Thin

	Product group type	Key aspects of process technology			Product criteria	pH correctIon Used / needed
		Dough forming	Baking	Dough rework		
	**Yufka, Lebanese/ Arabic bread,** **Chapati type**	single piece die cut lamination	Very short <9 s	NO YES	Used at the table to handle food during meals pastry component as filo	No
	**Wheat tortilla, Wraps**	Hot press	short 20-30 s	Typically, No (sometimes tortilla)	Foldability more important than softness Suitable to long life with MAP	Yes No, Frozen
	**Piadina, Roti, Pita types, Lavash, (packed, long life)**	single piece lamination die cut lamination	Short baking <60 s	NO YES	Traditionally baked on hot plate, can be baked in oven. Folding can be needed. pH correction possibly needed, but rework can be an issue!	Yes
	**Thins, Naan, Pide Greek-style pita (packed, long life) pinsa pizza bases**	single piece lamination	longer 60s – 1.5 min	Typically no	Traditional softness counts more than foldability, Goes into the direction of bread texture	No / Yes

Thicker

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EXAMPLES OF FLATBREAD

Around the world with flat bread, working on improving and understanding texture

On Wikipedia,

150+ different types of flatbreads are mentioned

So, there is a lot to work on ☺

YUFKA AND LAVASH

The Flatbread market in MEA is still dominated by the traditional crafted category

Very fragmented market: traditional flatbread like Yufka & Lavash is sold in small shops on the streets, baked all day long.

Crafted Yufka dominates the market but there are more and more developments of industrial packaged types of Yufka and Lavash.

YUFKA AND LAVASH

What is it?

Yufka is a traditional Turkish flatbread consisting of wheat flour, water, salt, relaxing agent. The unleavened dough is laminated down to a **paper-thin thickness without any crumb structure**. Baked at high temperature in **very short time**. Yufka is used as the wrap for many flat bread types and pastries found in the region. The product has short shelf-life, industrial products 7-10 days. And can be considered as a **Par-baked product**, because the final bake will be done at home, when the final preparations has been done.

Lavash, this is also the **common term for flatbread** in general, typically it is a **soft**, thin flatbread made with normal wheat flour and or high ash wheat flour, water, oil or shortening, salt, relaxing agent sometimes with yeast. The lavash has **crumb structure** it is also baked at high temperature and in very short time. Lavash is typically **eaten to hot food, and used as the bread for the typically kebab**. The product has short shelf-life, industrial products 7-10 days.

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PRODUCTION CHALLENGES

Obstacles that you might be facing

- **Handling** of paper thin dough carpet, especially for Yufka, is critical
- Up to 30 % **return dough**, that can recirculate 3-4 times
- Evaporation of water after baking, **difficult to control moistness** of baked product
- **Fast stalling rate**, due to large surface, and in some cases cold distribution coursing damage of product already after 3 days
- **Eating quality** over time is a challenge, chewiness and softness
- **Convenience** at final customer
- Typically, **short shelf-life** 3-7 days

GRINDSTED® FLATBREAD 105

Impact on the final product and the process

The Final Product:

- **Improved strength** of baked product in general, less risk of breaking during handling at the end user
- **Elimination of breaking in folds** up to 14 days after production, whereas normal is 3 days when stored at 4°C
- **Improved foldability** of baked product over time
- **Improved moistness** of baked product

The Process:

- **Large reduction** or elimination of chemical relaxing agents like Sodium metabisulfite
- Even with high amount of return dough, **the process runs optimal**
- **Improve elasticity** of dough

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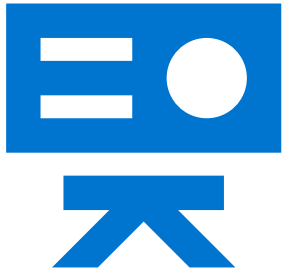
A PROVEN SOLUTION

GRINDSTED® FlatBread 105

Several tests have been conducted at industrial customers with good results!

- **Test done** in Lavash High ash flour 0,6 % GRINDSTED® FlatBread 105
- **Test done** in Yufka 0,4 % GRINDSTED® FlatBread 105



Two of the **tests are evaluated in the videos** on next slide on day 7 after production

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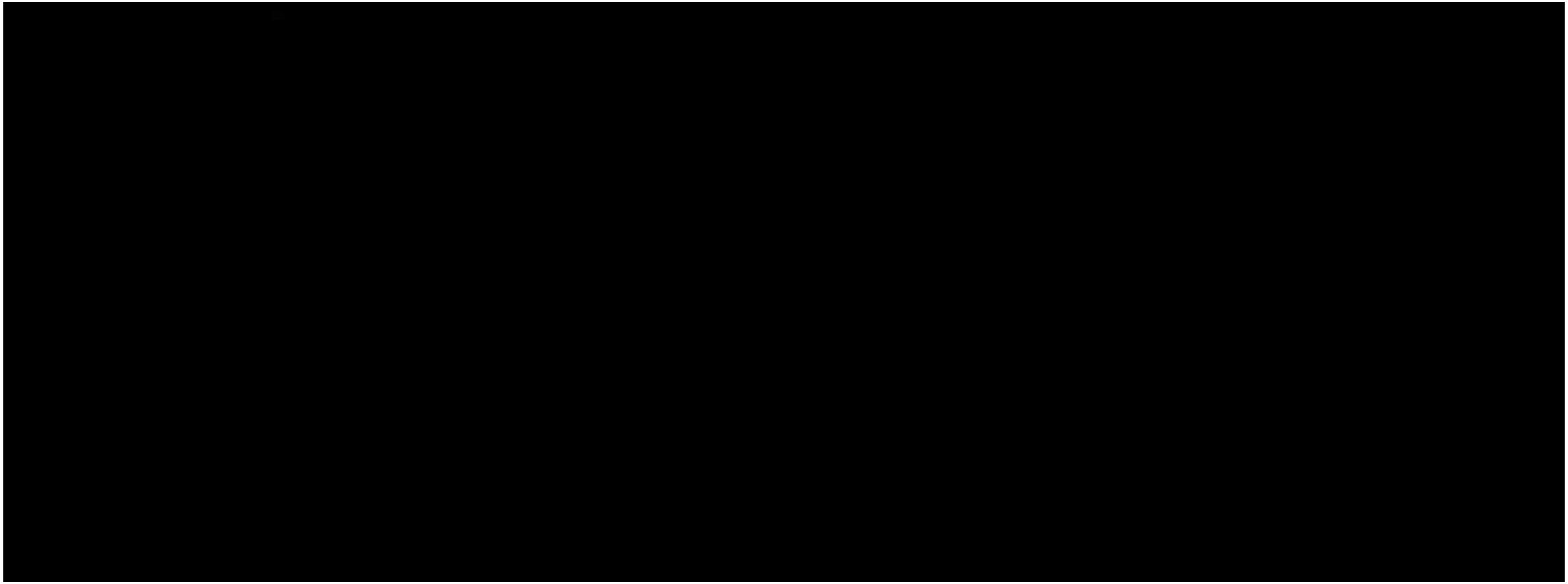
LAVASH VIDEO: EVALUATION



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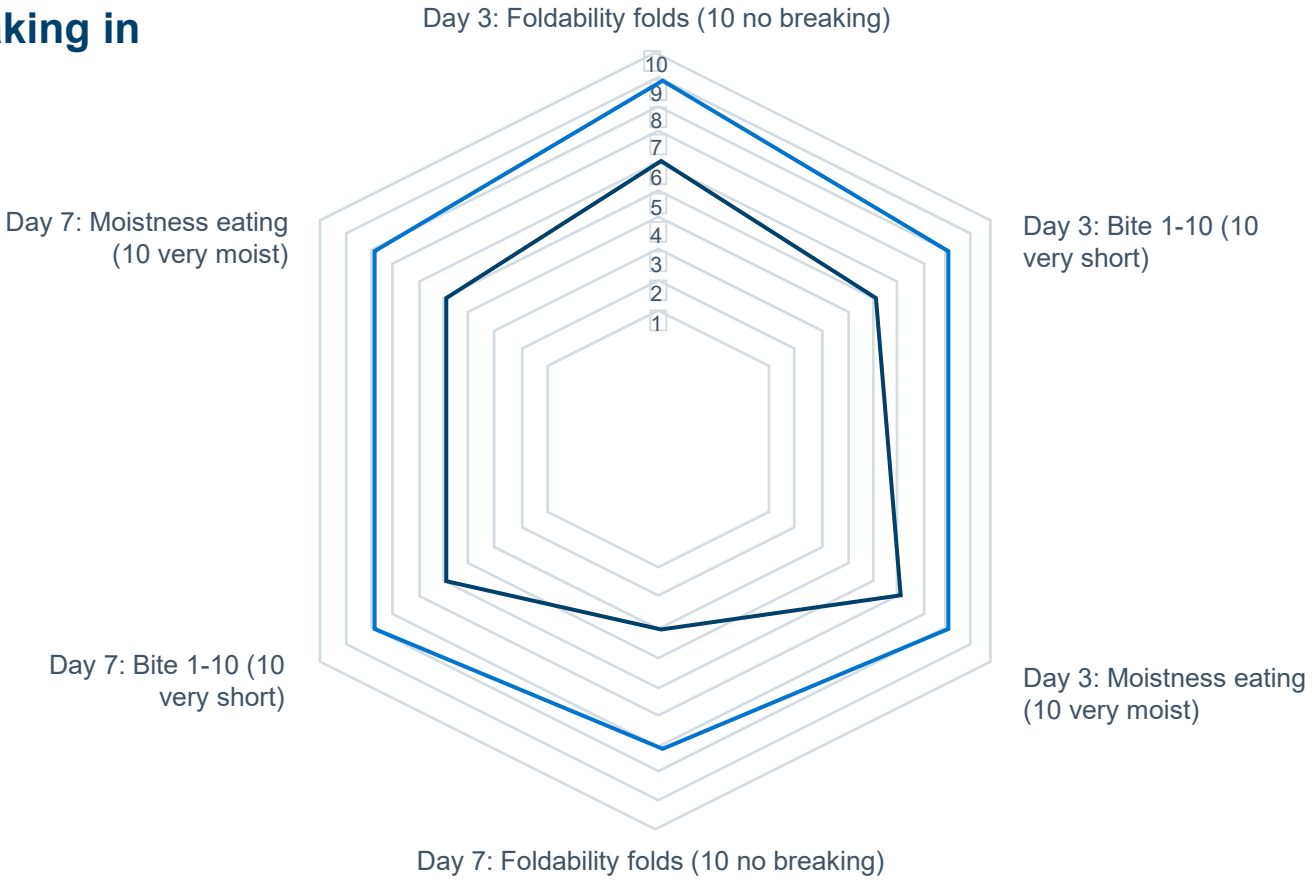
LAVASH, DAY 3 AND 7, DAY 3 VS. DAY 7

Foldability, Moistness and Bite significant improved

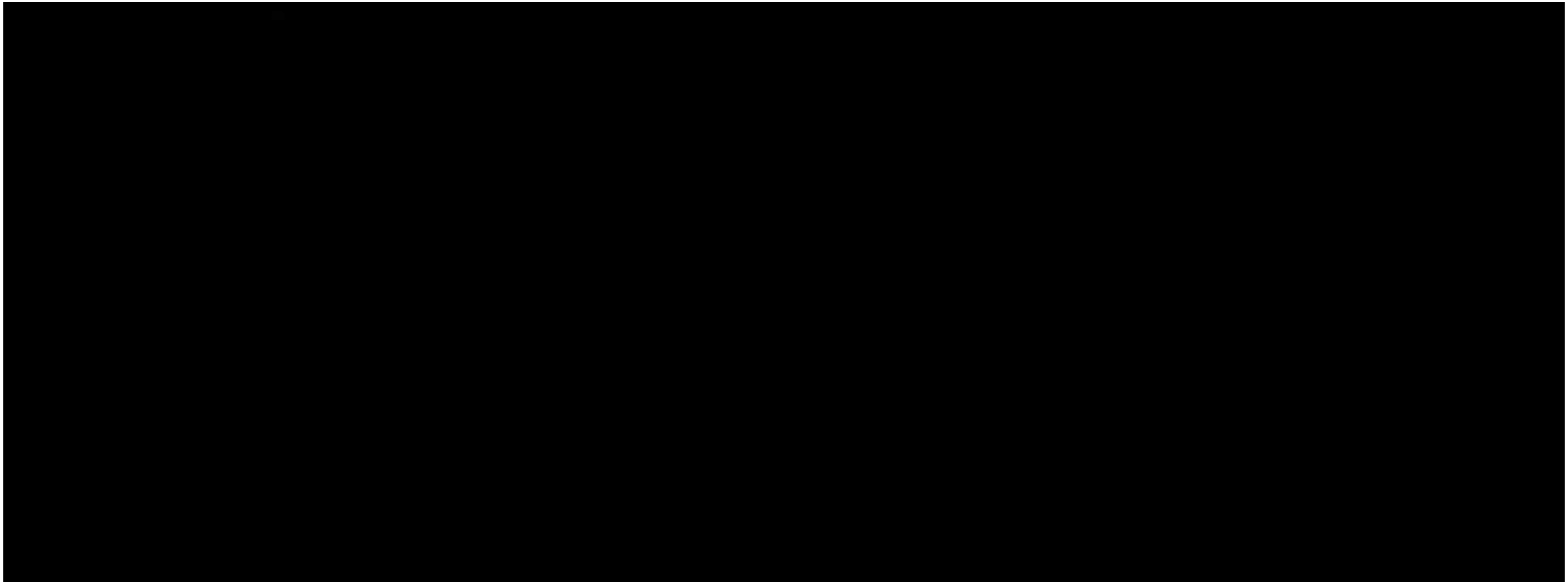
Yufka Industrial trials Breaking in folds Day 3 and 7

0,6% Flatbread 105 + Normal dosage of Sodium Metabisulfite

Control, Customer



YUFKA VIDEO: EVALUATION



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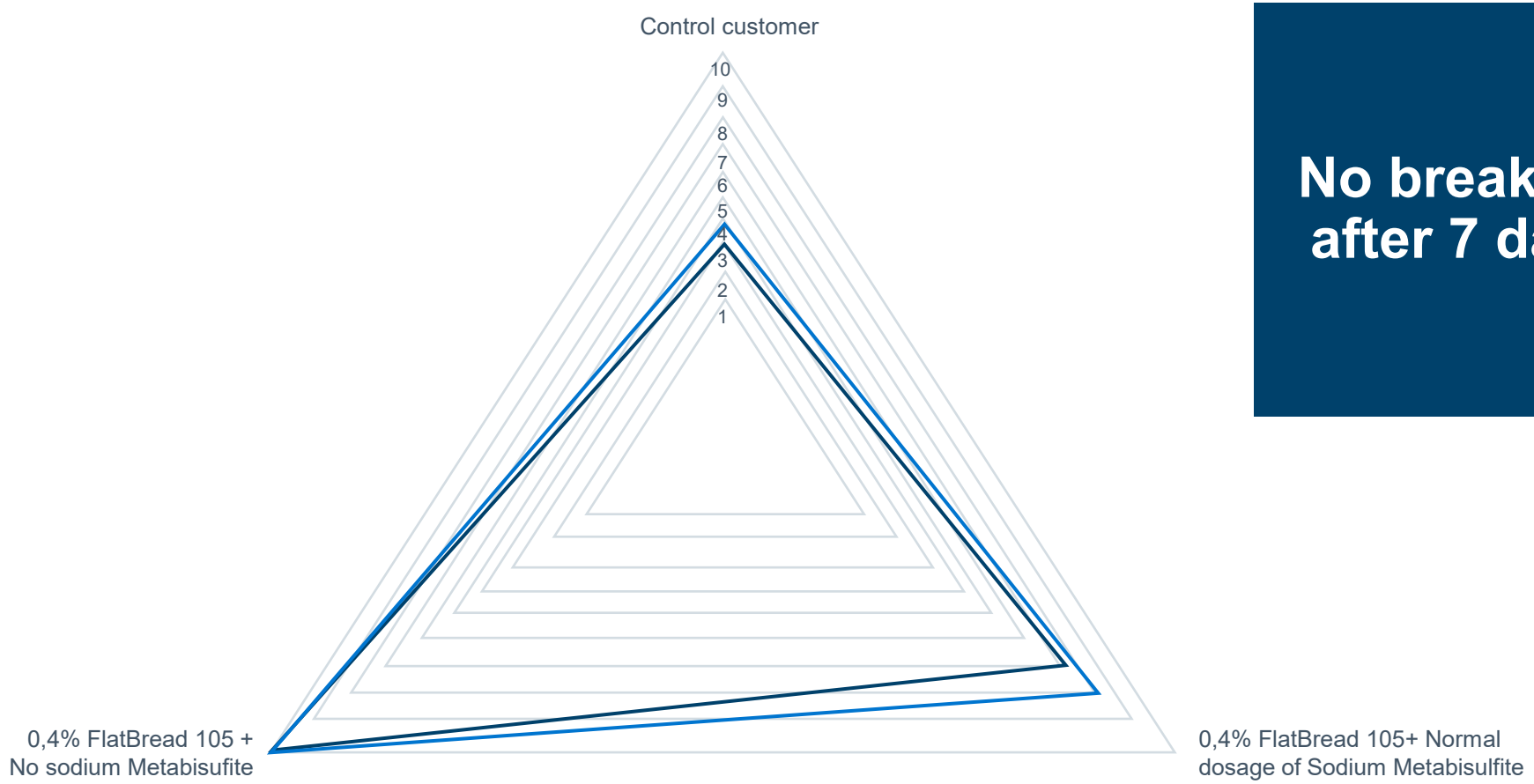
YUFKA INDUSTRIAL TRIALS
Breaking in folds Day 3 and 7

Day 3: Breaking in folds (10 No breaking)

Day 7: Breaking in folds (10 No breaking)



No breakage after 7 days

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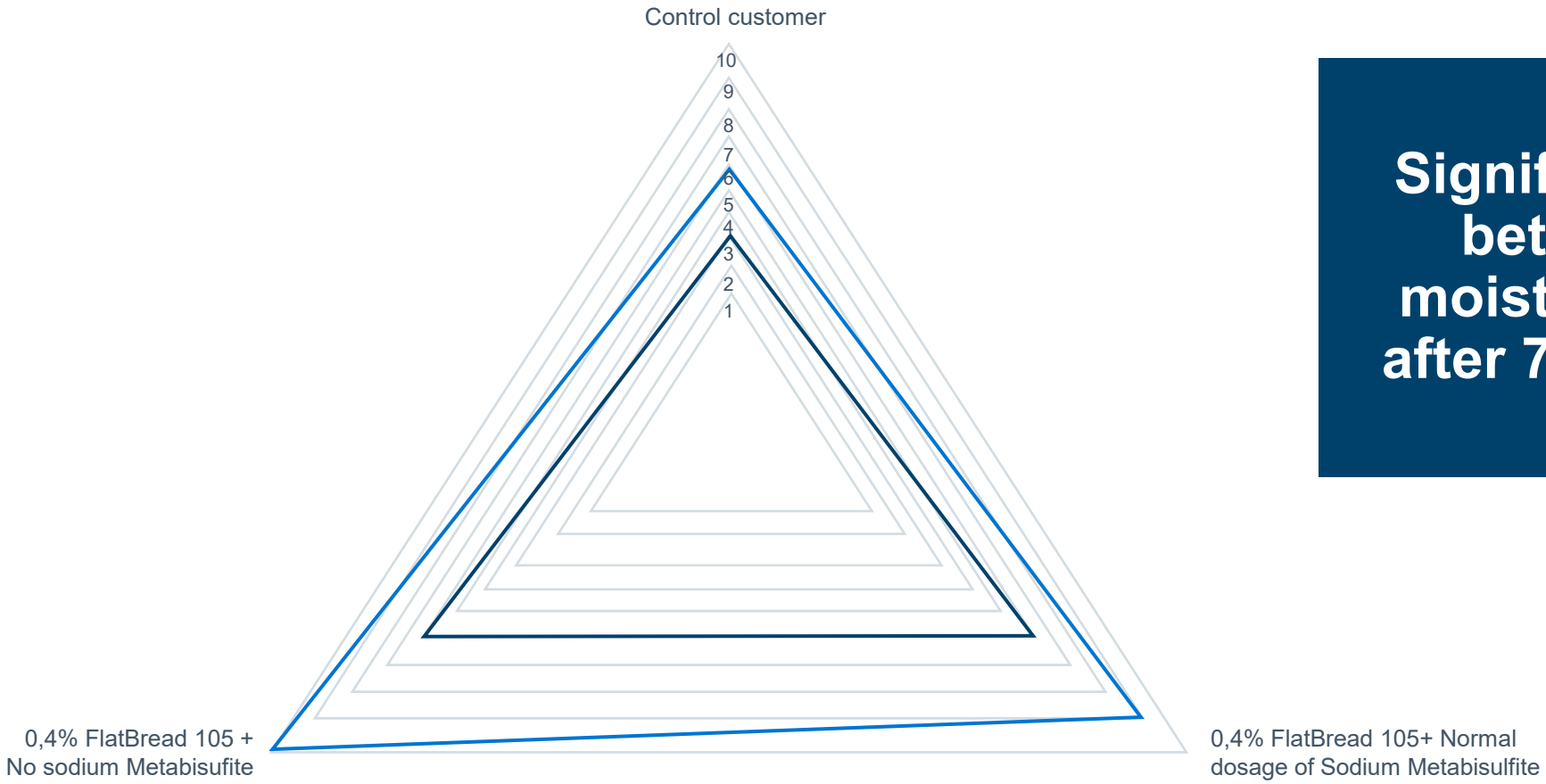
YUFKA INDUSTRIAL TRIALS
Moistness Day 3 and 7

Day 3: Breaking in folds (10 No breaking)

Day 7: Breaking in folds (10 No breaking)



Significant better moistness after 7 days

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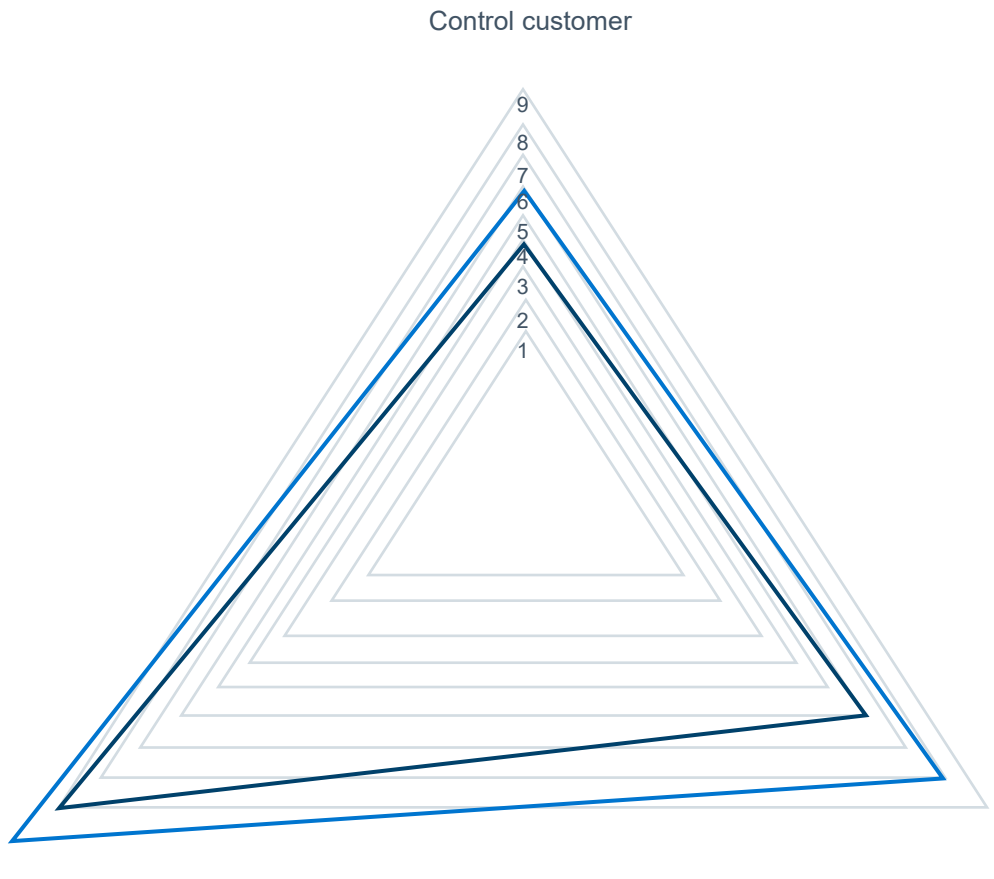
YUFKA INDUSTRIAL TRIALS
Shortness of bite Day 3 and 7

Day 3: Breaking in folds (10 No breaking)

Day 7: Breaking in folds (10 No breaking)



Bite is clearly shorter compared to control after

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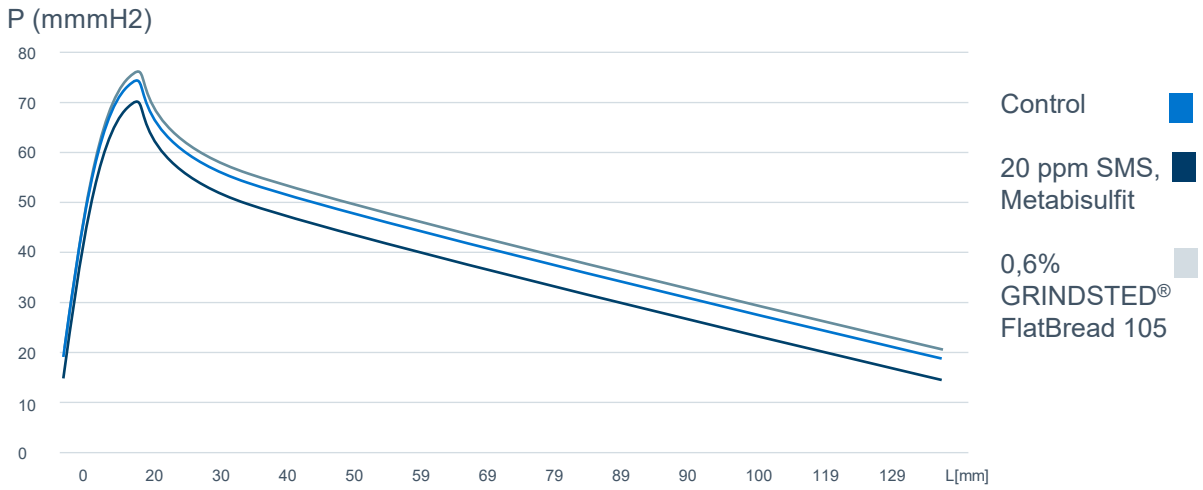
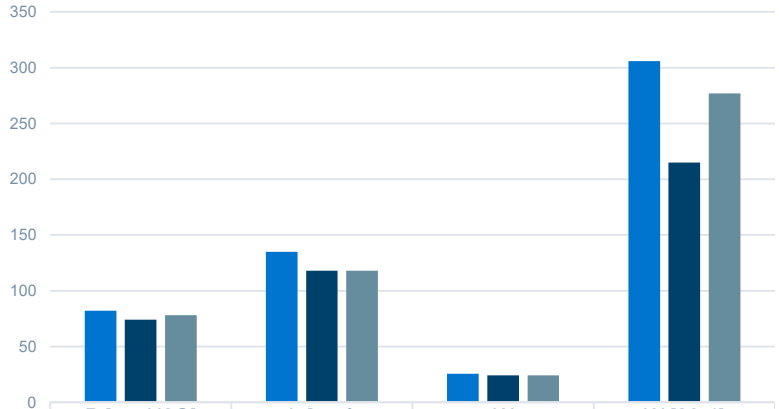
REDUCTION OR ELIMINATION OF SMS

- SMS are often used for relaxing the dough on the process line
- Use of SMS is reducing the strength of the end product
- GRINDSTED® Flatbread 105, can reduce or limit the use of SMS, this resulting in better general quality of the end product

Avleograph Curves



Alveograph Columns



	P [mmH2O]	L [mm}	W	W [20-4]
2020-000x9- 1 Control	82	135	25,5	306
2020-000x9- 2 + 20 ppm SMS	74	118	24,1	215
2020-000x9-3 0.6% GRINDSTED® FlatBread 105	78	118	24,1	277

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ROTI

The flatbread challenge in India

ROTI is traditional produced by the housewife or at corner shop bakeries, and consumed on the same day, so traditional the demand for longer shelf-life is limited

But the growing trend towards convenience is applying pressure on the packed bread market to produce flatbread with a longer shelf-life

IFF has taken up the challenge for the Indian market

TESTING GRINDSTED® FLATBREAD 105 IN ROTI

Formulation	Bakers %	gram
ATTA whole wheat flour	100.00	3000.00
Salt	2.000	60.00
Rapeseed oil	8.000	240.00
Water	60.00	1800.00
GRINDSTED® Flatbread 105	1.000	30.00
Calcium propionate*	0.150	4.50
Potassium sorbate*	0.150	4.50
Total		5124.00

*) Addition of the preservatives calcium propionate and potassium sorbate is optional. The preservatives are added for a mold-free shelf-life.

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Process and Flour in Roti

ATTA FLOUR TO OBTAIN THE ORIGINAL TEXTURE

PROCESS:
Traditional, Roti is baked on a hot plate with big puffing but can also be baked on a normal Tortilla line

FLOUR:

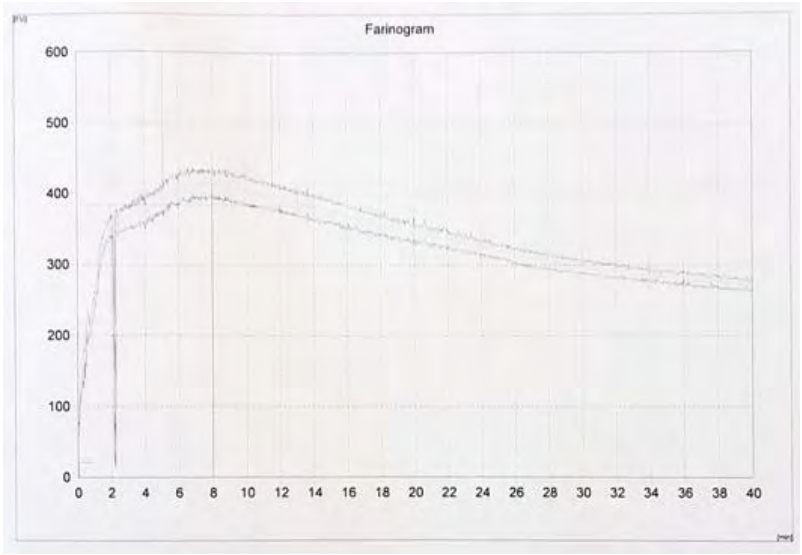
- Typically Wholemeal flour, very fine milled 100% extraction rate (traditional stone milled)
- The whole grain is running through the mill without separation
- Higher damaged starch (±12% compared to typically European flour (±4%)
- The damaged starch provide sweeter flavor, provide enhanced baking spots “Browning”
- Flour is important in Roti!
- Normal European wholemeal flour will not provide the traditional texture and look of a Roti

ATTA FLOUR IS ESSENTIAL FOR ROTI

ITC Aashirvaad Atta

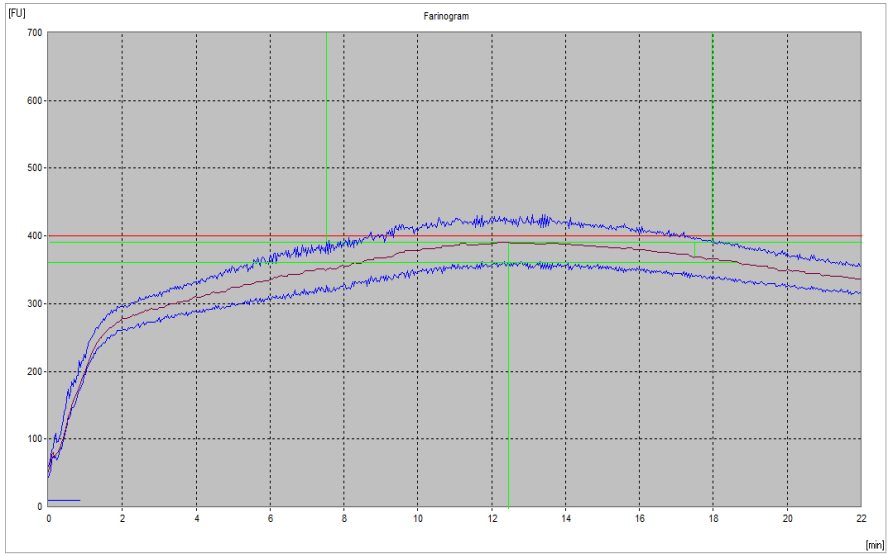
	Atta flour /100 g	EU Whole meal flour
Protein	10,7 g	14,0 g
Carbohydrate	76,0 g	60,3
Dietary fiber	10,4 g	11,6
Total Fat	1,3 g	1,8 g
Sodium	1,5 mg	-

Atta flour



Type	Salt %	Water %	Arrival time (min.)	Dough dev. Time (min)	Dough Stability (min.)	Softening (BU)
400 BU 2% salt	2,00	85,00	5,00	8,0	6,40	68,00

European whole meal flour



Type	Salt %	Water %	Arrival time (min.)	Dough dev. Time (min)	Dough Stability (min.)	Softening (BU)
400 BU 2% salt	2,00	71,50	7,32	12,5	10,40	40,00

Higher damaged starch (±12%) in the Atta flour, compared to typically European flour (±4%)

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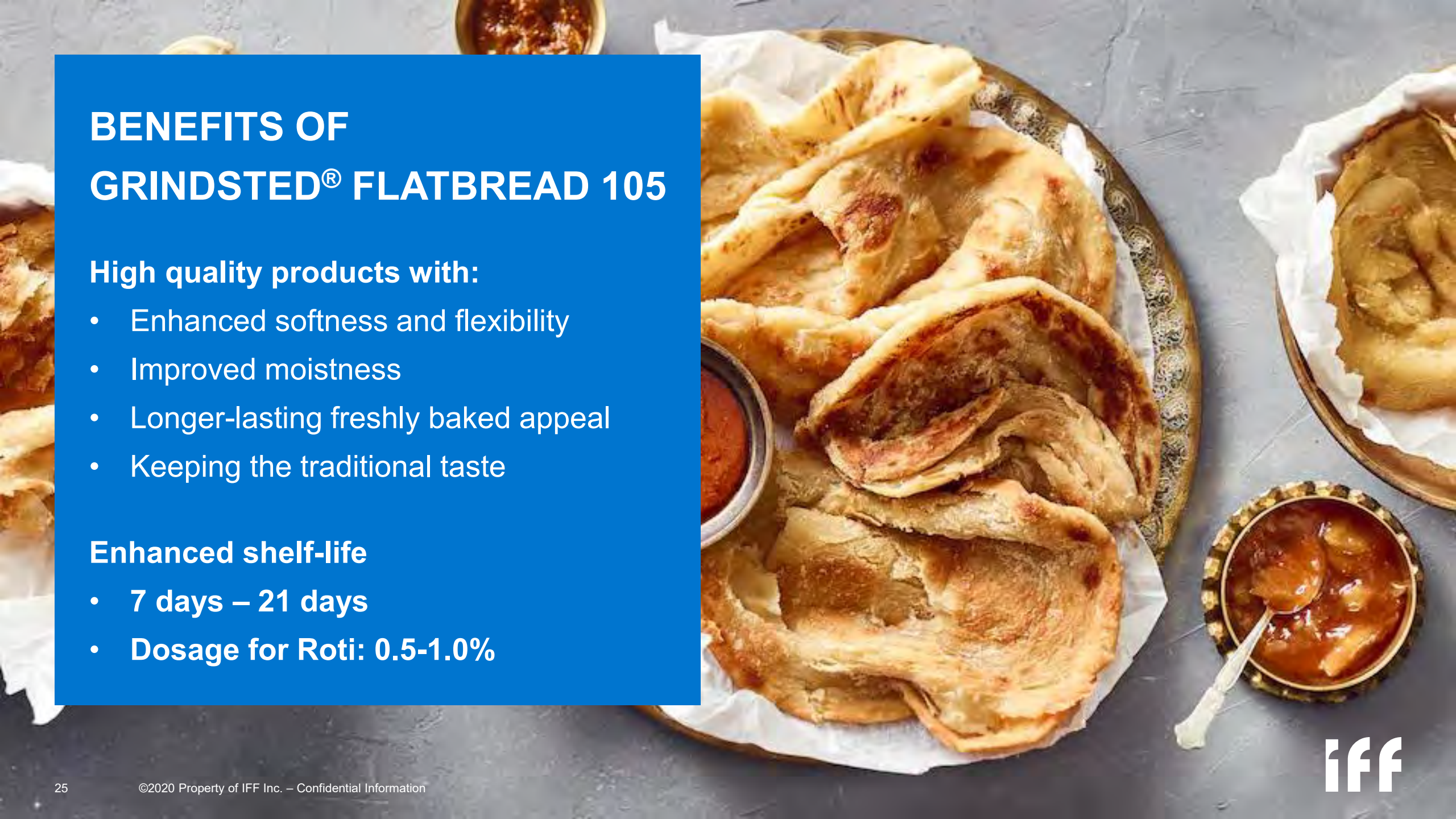
BENEFITS OF GRINDSTED® FLATBREAD 105

High quality products with:

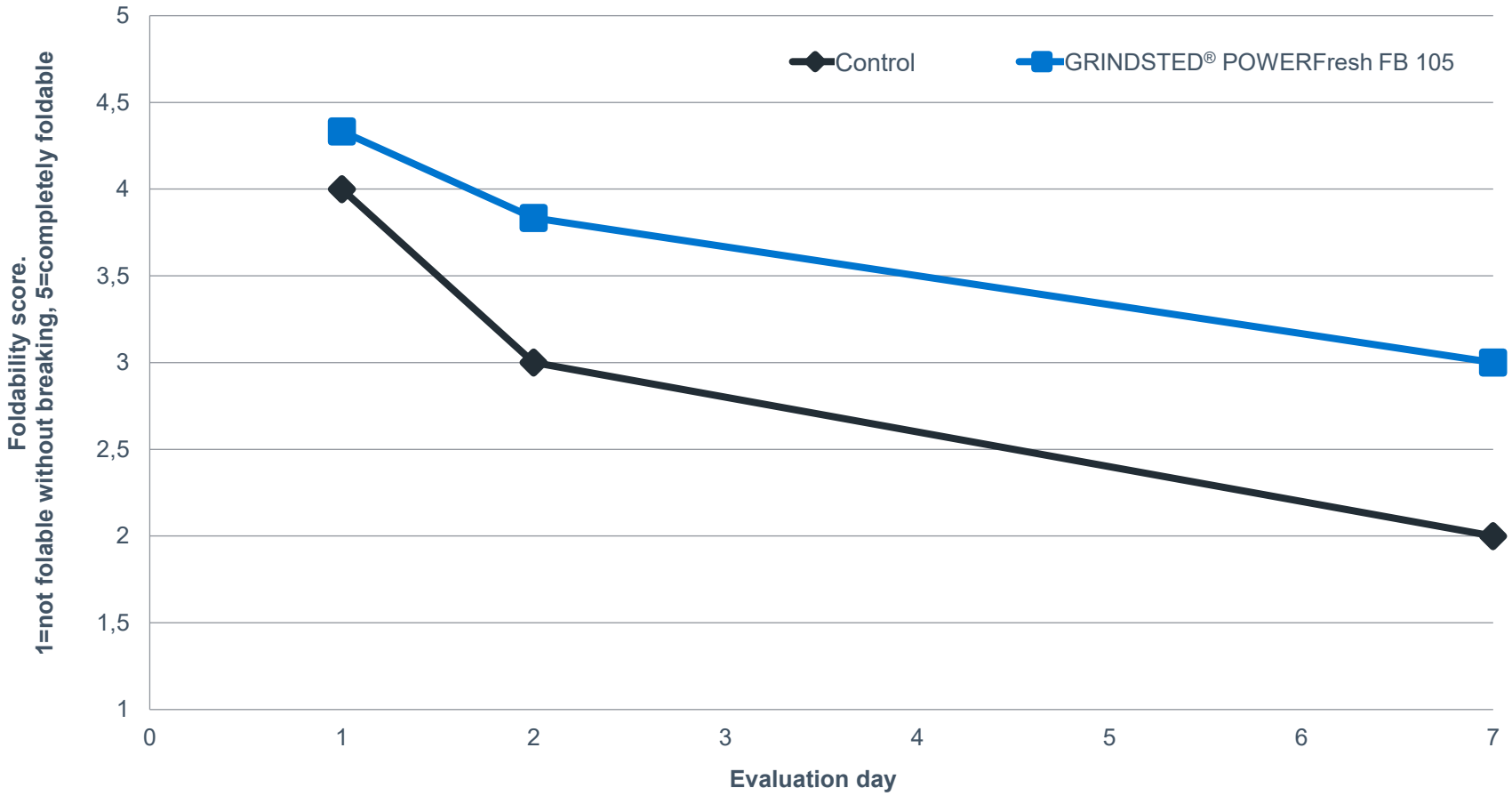
- Enhanced softness and flexibility
- Improved moistness
- Longer-lasting freshly baked appeal
- Keeping the traditional taste

Enhanced shelf-life

- **7 days – 21 days**
- **Dosage for Roti: 0.5-1.0%**



ROTI FOLDABILITY DURING SHELF-LIFE



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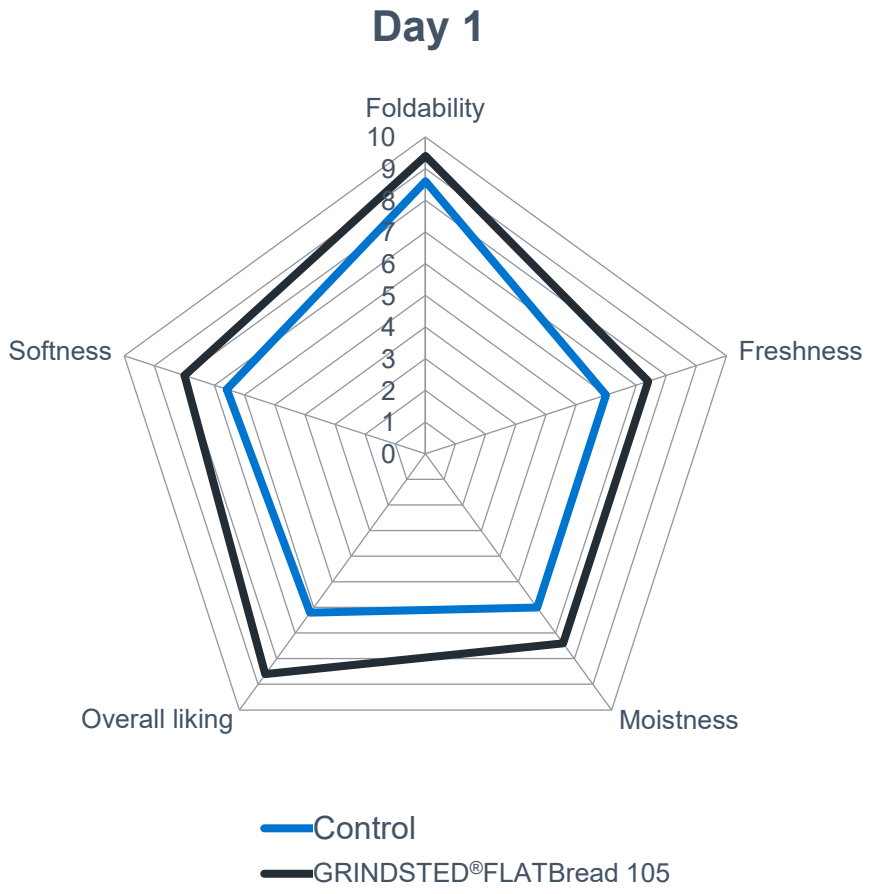
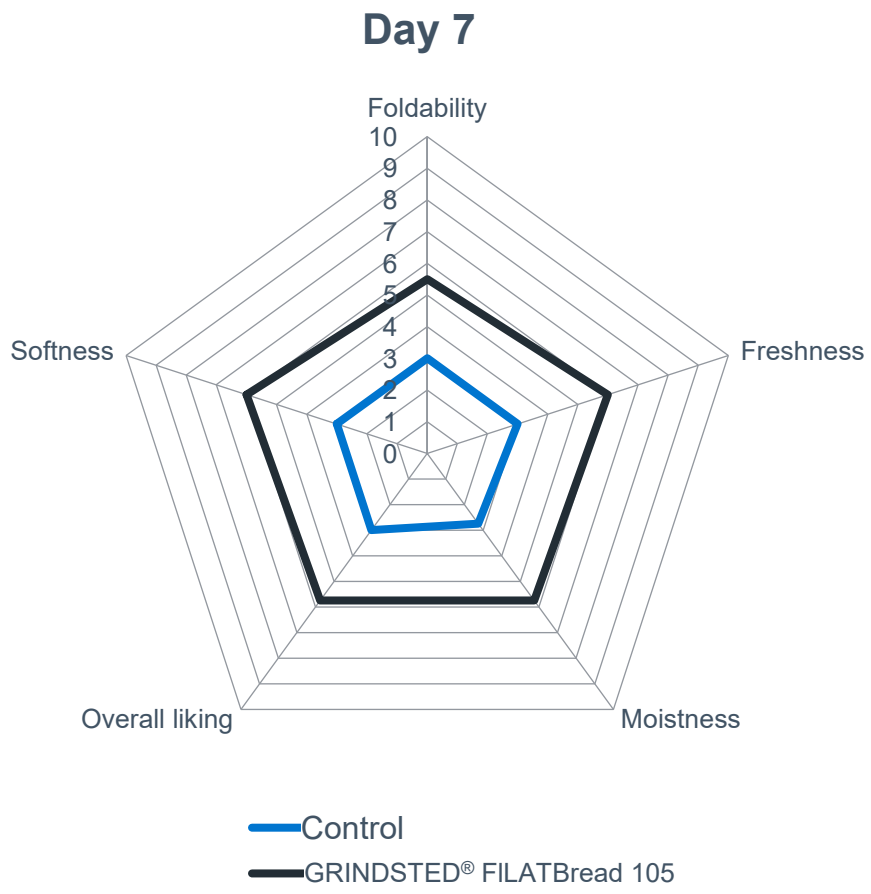
SENSORY EVALUATION OF ROTI





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CONCLUSIONS

IFF has developed a cost-effective solution for flatbread

GRINDSTED® FLATBREAD 105

- Improves softness and flexibility
- Improves the sensory characteristics like freshness and moistness
- Enhances shelf-life
- Is tailored to function in different types of flatbread
- Original flour will provide the desired texture

THINS

Soft & flexible throughout shelf life

POWERBAKE® Thin and GRINDSTED® Xanthan 200

Create a unique texture on your existing thin bread line with a tortilla like touch

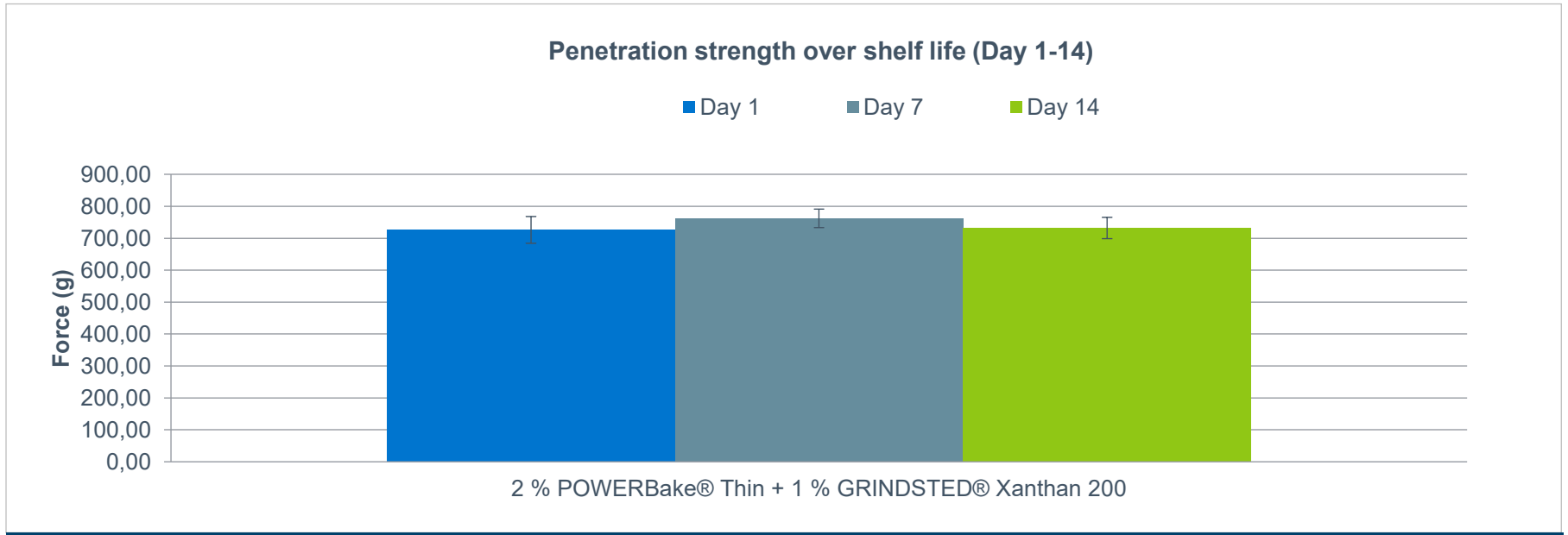
Add POWERBAKE® Thin and GRINDSTED® Xanthan 200 to keep your **hybrid tortilla soft and flexible throughout shelf life.**

The **enzyme-emulsifier combination** in POWERBAKE® Thin improve the eating quality and keeping the thin bread **soft and flexible during ambient storage.**

GRINDSTED® Xanthan 200 promotes an **efficient production process.**

Adding POWERBake® Thin in combination with GRINDSTED® Xanthan

NO CHANGE IN EATING QUALITY OVER TIME



POWERBake® Thin added in combination with GRINDSTED® Xanthan, securing both a stable processing with uniform cutting and less waste during production.

It also provides a product that will not break during preparation by the end consumer throughout the shelf-life, illustrated by measuring the Pressure Strength over time.

The Pressure Strength (eating quality) doesn't change over 14 days

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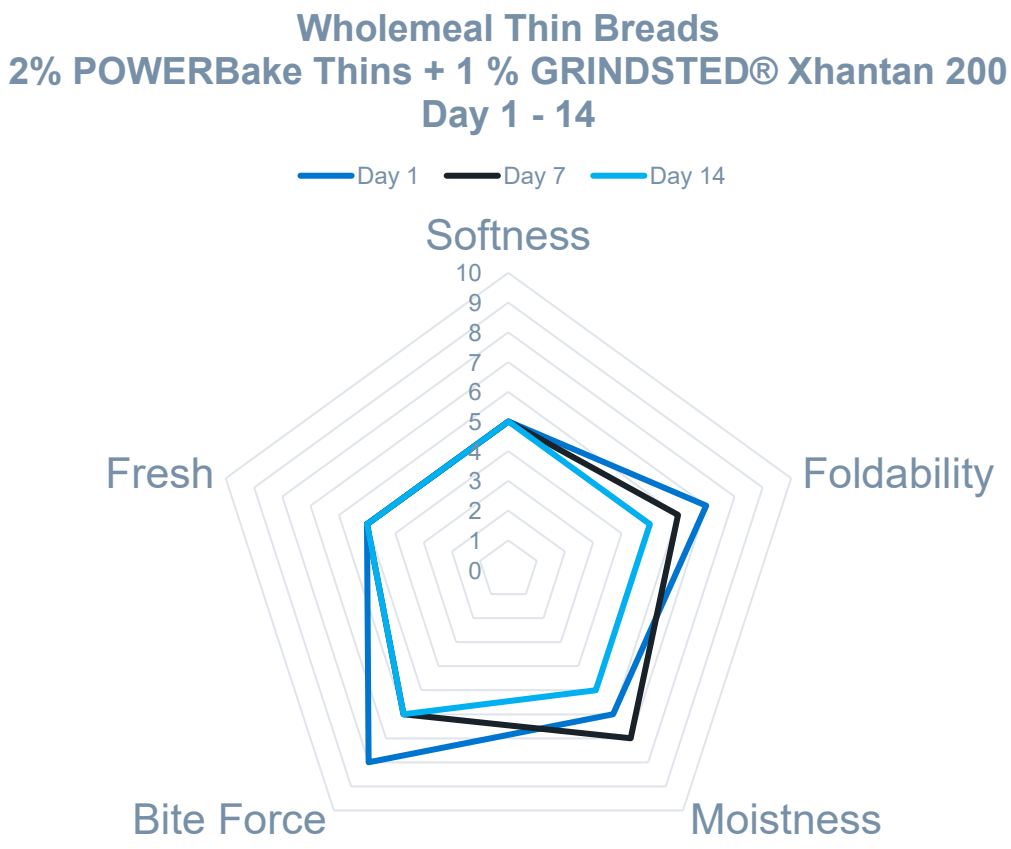
POWERBAKE® THINS

Softness over time



Wholemeal Thins were produced with **2% POWERBAKE® Thin** to **secure the same softness and freshness** perception over the **14 days** shelf-life period.

Foldability, Moistness and Bite force only see very small difference from day 7 to 14.

Overall, a good quality is secured in the whole shelf-life period of the product.

FUNCTIONALITY OF POWERBAKE® THINS AND GRINDSTED® XANTHAN 200

Ingredient	Function
POWERBake® Thins	A complete blend designed for sandwich thin bread application. Improves dough extensibility and enhances controlled oven spring, volume, shape and crust color. Use at 1.75% to 2.25%, based on the total flour. **Composition:** monoglyceride, DATEM, SSL, enzymes and ascorbic acid
GRINDSTED® Xanthan 200	Xanthan can also be added as it helps with the lamination process and gives the final product a sharper cut and shape.

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WE HAVE STATE-OF-THE-ART EQUIPMENT TO HELP YOU IN THE PROCESS

Equipment for flatbread application in our lab in Denmark, eg our Wheat tortilla pilot oven:

Micro Combo 3 from Lawrence Equipment (US)

- A leading manufacturer of wheat tortilla equipment
- All common processing variables can be altered, similar to an industrial line
- Standard recipes established
- Several customer recipes have also been tested with good quality results

Tunnel oven for flatbread

- Up to 450ºC and baking down to 45 sec
- Normal Deck oven with stone

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IMPROVE FIBER CONTENT AND MOISTNESS IN THIN BREAD

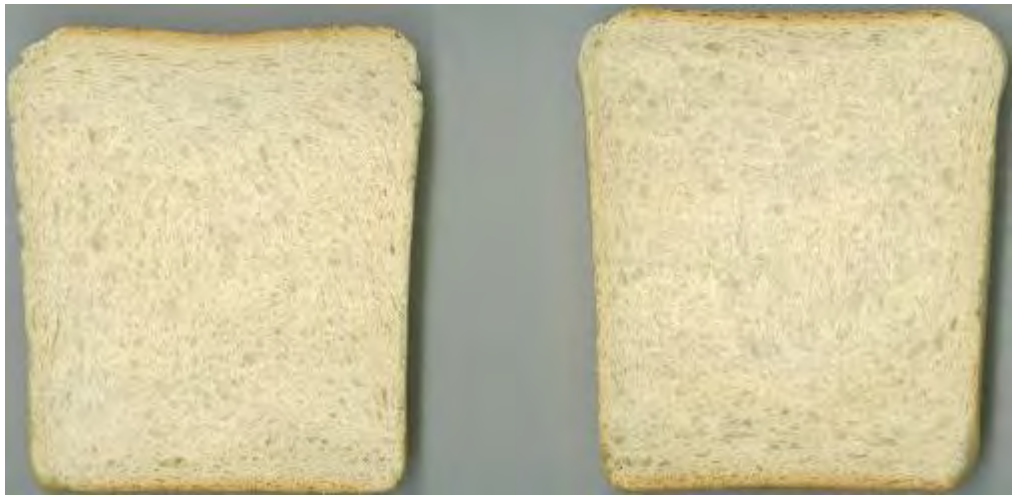
Case study

INTRODUCTION TO LITESSE®TWO

Improving texture in thin bread

- Litesse® is a polydextrose containing 80% fibre with only 1kcal/g, and has white colour.
- Litesse® is typically used for bulking agent as a sugar replacer or fat replacement in cake and biscuit applications.
- Litesse® is also used as fibre enrichment in a range of products.
- In bread, Litesse® is used as fibre enrichment, were the addition of Litesse® TWO in 8% on flour, will provide a high fiber claim.

We tested the effect of the Litesse® TWO in thin bread bakery applications:



Control High Fiber

High fibre 6g/100g
8% Litesse® Two on flour

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SOFTNESS AND SHELF LIFE

Most fibres used in high dosages have a negative impact on the softness and the organoleptic evaluation.

Litesse® is used in high dosages - typically 8% or more - on flour

Litesse® has a positive effect on the moistness of the bread product.

High addition of fibres can give:

- crumbly and dry crumb structure
- fragile texture in general
- faster microbiology damages due to higher water content
- flavor loss over time

LITESSE® IN THINS

Use of polydextrose as fiber in thin bread, providing softness and fiber

With Litesse® Two it is possible to improve softness, moistness and elevate the fibre content significantly

We have tested Litesse® Two in 0%, 4% and 8% addition in white- and multigrain / Integral* Thin Bread

The Thin Breads were evaluated by our sensory panel, making a profile analysis of the products

The sensory panel consists of 8 persons, who have all passed the basic sensory screening test before they are accepted in the panel.

Before taking part in the descriptive analysis of this test, the panelists are trained in recognizing and intensity scaling of the product attributes.

* Integral is an 88% wheat flour + 9% wheat bran + 3% wheat germ (recombined wholegrain flour)

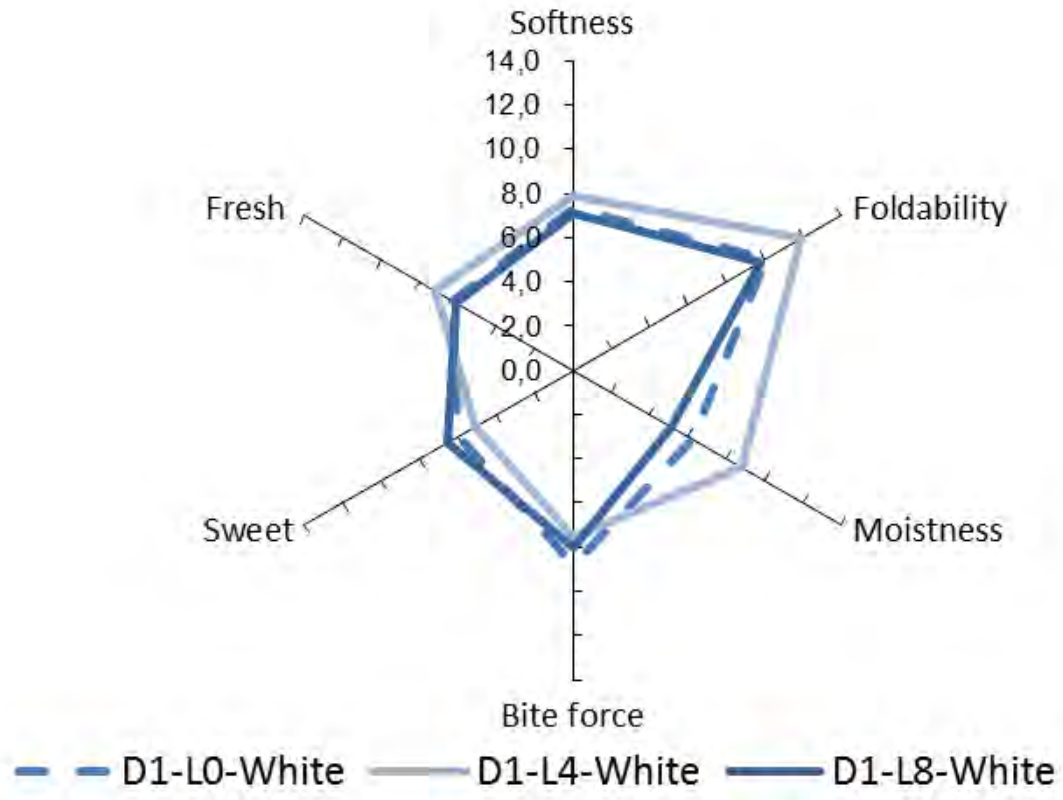
WHITE THINS WITH LITESSE® *TWO*

Ingredients in Bakers %

Ingredient Name	Unit Bakers %	Trial 1 0% Litesse® *Two*	Trial 2 4% Litesse® *Two*	Trial 3 8% Litesse® *Two*
Wheat flour	%	100.00	100.00	100.00
Litesse® *Two* Powder	%	0.0	4.000	8.000
Wheat Gluten	%	5.000	5.000	5.000
Vegetable oil	%	4.500	4.500	4.500
Compressed yeast	%	2.250	2.250	2.250
Sugar	%	2.000	2.000	2.000
POWERBake® Thin	%	2.000	2.000	2.000
Salt	%	1.600	1.600	1.600
GRINDSTED® Xanthan 200	%	1.000	1.000	1.000
Calcium Propionate	%	0.300	0.300	0.300
Water ±	%	60.500	60.000	59.000

SENSORY EVALUATION - WHITE THIN BREAD

DAY 1 - 0%, 4% AND 8% LITESSE® TWO



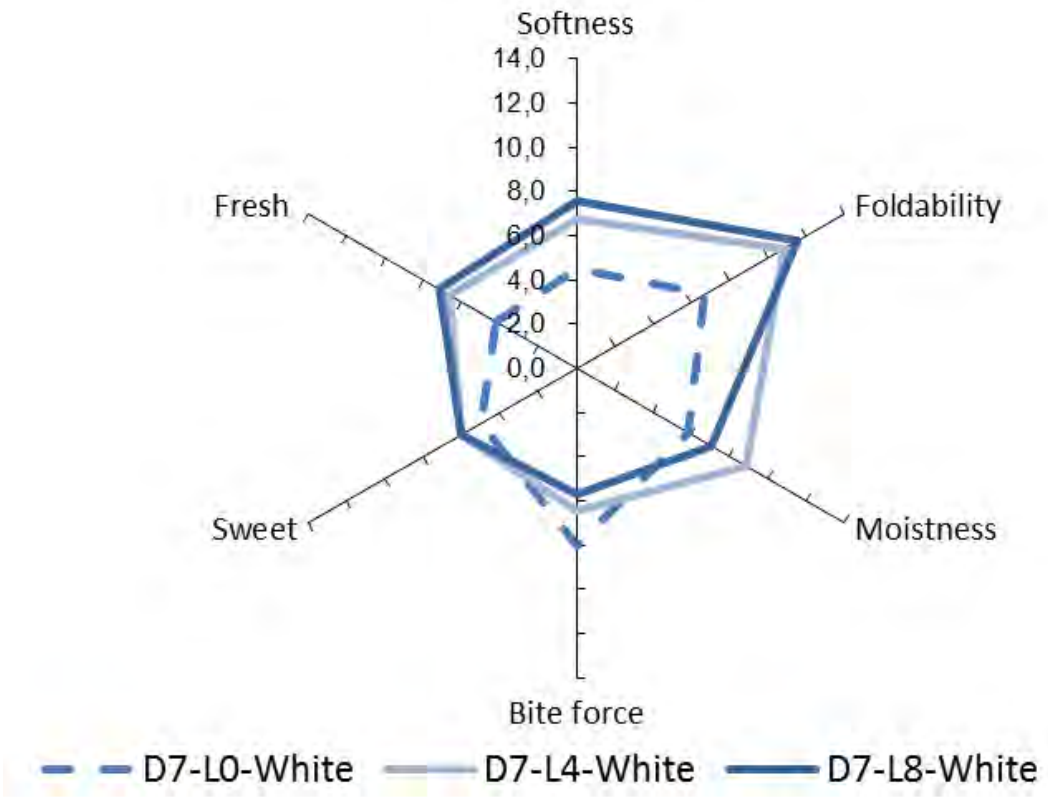
Day 1

0% and 8% Litesse® Two are very similar,
whereas 4% Litesse® Two is better in freshness, foldability and moistness

D1 = Day 1, L0 = 0% Litesse® Two, L4 = 4% Litesse® Two, L8 = 8% Litesse® Two

SENSORY EVALUATION - WHITE THIN BREAD

DAY 7 - 0%, 4% AND 8% LITESSE® TWO



Day 7

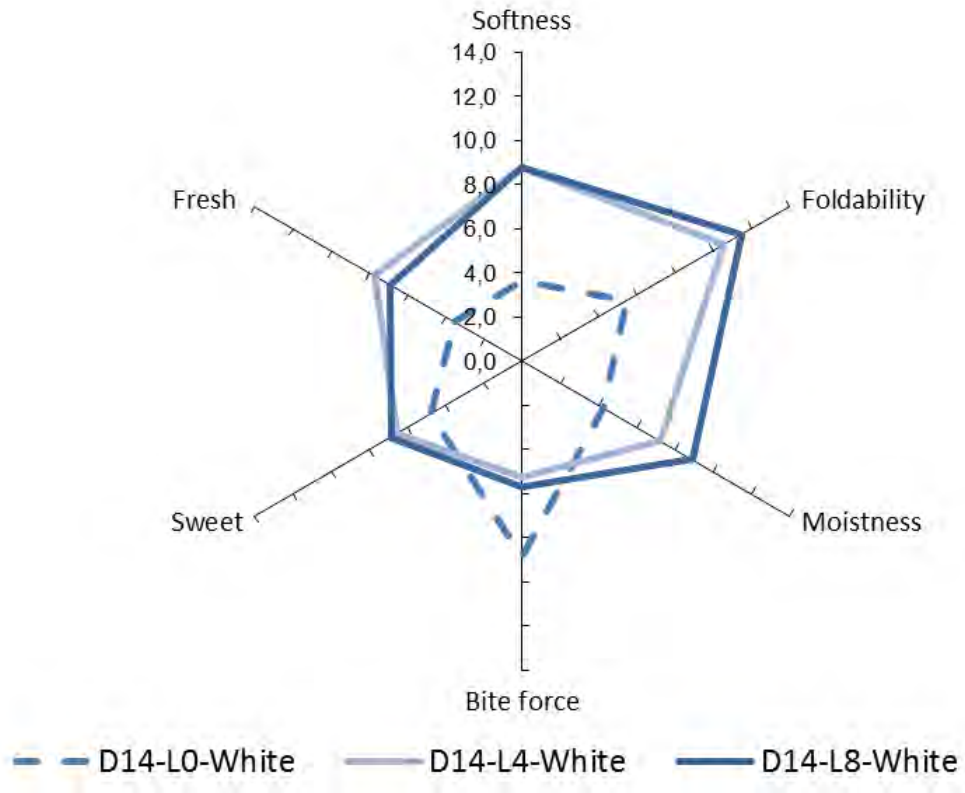
0% Litesse® *Two* is clearly losing quality in softness, foldability, moistness and bite force.

4% and 8% Litesse® *Two* are very similar, however 4% Litesse® *Two* is better in moistness

D7 = Day 7, L0 = 0% Litesse® *Two*, L4 = 4% Litesse® *Two*, L8 = 8% Litesse® *Two*

SENSORY EVALUATION - WHITE THIN BREAD

DAY 14 - 0%, 4% AND 8% LITESSE® TWO



Day 14

0% Litesse® *Two* is clearly losing quality in softness, foldability, moistness and bite force.

4% and 8% Litesse® *Two* are very similar in softness and freshness, however 4% Litesse® *Two* is better in moistness.

D14 = Day 14, L0 = 0% Litesse® *Two*, L4 = 4% Litesse® *Two*, L8 = 8% Litesse® *Two*

WATER % AND WATER ACTIVITY IN THE WHITE THIN BREAD

White Thin DK 23751-6 Bakers %	Water addition on flour	Water % Baked product Day 1	Water activity aW Baked product Day 1
Trial 1: 0% Litesse® *Two*	60.5 %	32.64 %	0.95
Trial 2: 4% Litesse® *Two*	60.0 %	31.65 %	0.95
Trial 3: 8% Litesse® *Two*	59.0 %	29.76 %	0.94

It is possible to add 8% Litesse® Two on flour, with a small reduction in the water.

Litesse® Two contains 80% soluble fiber.

CONCLUSION
WHITE THIN BREAD

The control and the **Litesse® Two** trials all have the same addition of functional ingredients - Emulsifiers, Hydrocolloids and Bakery Enzymes.

Addition of 4 or 8% **Litesse® Two** will improve the softness, foldability, moistness, bite force and freshness over time.

Therefore, we conclude that the improved quality is coming from the addition of the **Litesse® Two** alone.

4% **Litesse® Two** is working as well as 8% **Litesse® Two** in White Thins regarding to softness, foldability, moistness, bite force and freshness over time.

Litesse® Two improves the softness of the products, even when adding less water than the control.

Adding 8% **Litesse® Two** will increase the added fibre calculated on Bakers % with 3.2% and still have the same improvement in quality as for the 4% **Litesse® Two** addition.

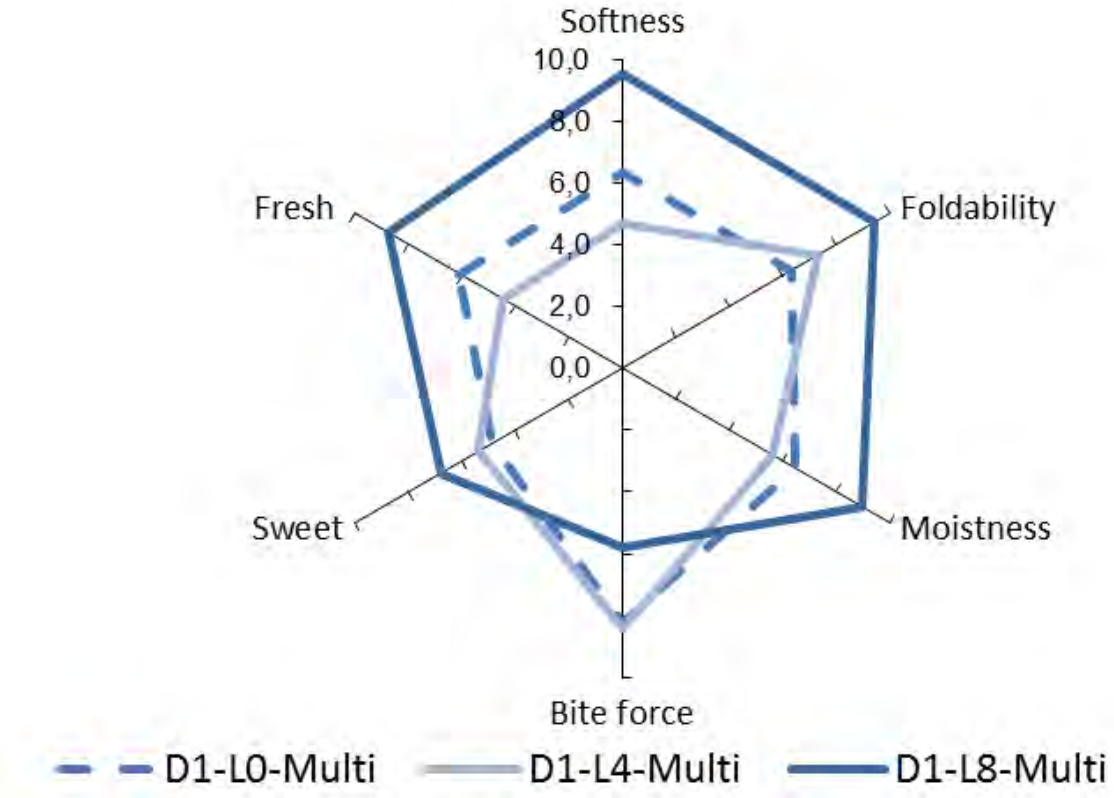
Recipe Formulation

MULTIGRAIN / INTEGRAL THINS WITH LITESSE® *TWO*

Ingredients in Bakers %				
Ingredient Name	Unit Bakers %	Trial 1 0% Litesse® *Two*	Trial 2 4% Litesse® *Two*	Trial 3 8% Litesse® *Two*
Wheat flour (flour)	%	88.0	88.00	88.00
Wheat bran (flour)	%	9.00	9.00	9.00
Wheat germ (flour)	%	3.00	3.00	3.00
Litesse® *Two* Powder	%	0.00	4.00	8.00
Corn flour	%	10.00	10.00	10.00
Wheat gluten	%	10.00	10.00	10.00
Sugar	%	10.00	10.00	10.00
Compressed yeast	%	6.00	6.00	6.00
Salt	%	2.00	2.00	2.00
Vegetable oil	%	1.50	1.50	1.50
Calcium propionate	%	0.40	0.40	0.40
Vinegar	%	0.80	0.80	0.80
POWERBake® Thin	%	2.00	2.00	2.00
GRINDSTED® Xanthan 200	%	1.00	1.00	1.00
GRINDSTED® CMC 1250	%	3.00	3.00	3.00
Water ±	%	81.25	80.25	80.25

SENSORY EVALUATION MULTIGRAIN / INTEGRAL BREAD

DAY 1 - 0%, 4% AND 8% LITESSE® TWO



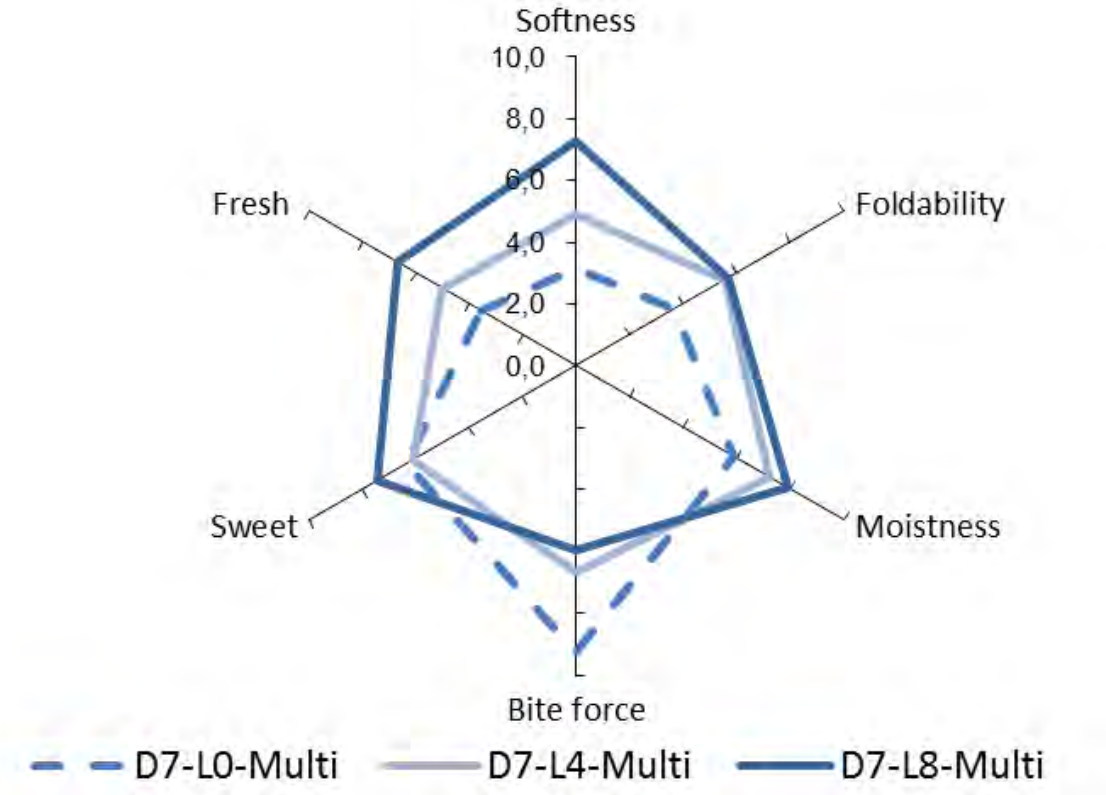
Day 1

In Multigrian / Integral the 8% Litesse® *Two* is significantly better on all parameters compared to 4% Litesse® *Two* and Control with 0% Litesse® *Two*.

D1 = Day 1, L0 = 0% Litesse® *Two*, L4 = 4% Litesse® *Two*, L8 = 8% Litesse® *Two*

SENSORY EVALUATION MULTIGRAIN / INTEGRAL BREAD

DAY 7 - 0%, 4% AND 8% LITESSE® TWO



Day 7

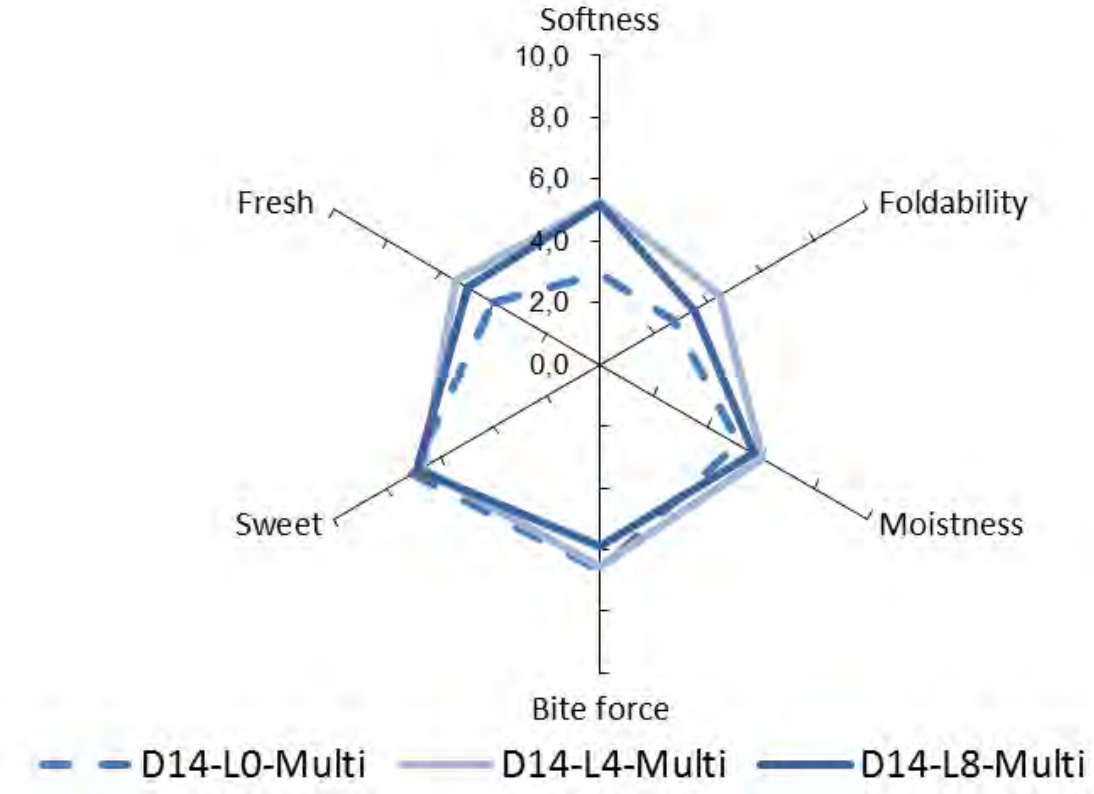
After 7 days, the addition of 8% Litesse® *Two* is still performing very well especially on softness and freshness.

The 4% addition of Litesse® *Two* is now performing better than the control, on all parameters.

D1 = Day 1, L0 = 0% Litesse® *Two*, L4 = 4% Litesse® *Two*, L8 = 8% Litesse® *Two*

SENSORY EVALUATION MULTIGRAIN / INTEGRAL BREAD

DAY 147 - 0%, 4% AND 8% LITESSE® TWO



Day 14

After 14 days, 4% and 8 % Litesse® *Two* are performing on the same level, and better than control in moistness, foldability, softness and freshness.

D1 = Day 1, L0 = 0% Litesse® *Two*, L4 = 4% Litesse® *Two*, L8 = 8% Litesse® *Two*

Water % and water activity in the Multigrain / Integral Thin Bread

White Thin DK 23751-7 Bakers %	Water addition on flour	Water % Baked product Day 1	Water activity aW Baked product Day 1
Trial 1: 0% Litesse® *Two*	81.25 %	34.85 %	0.94
Trial 2: 4% Litesse® *Two*	80.25 %	33.89 %	0.94
Trial 3: 8% Litesse® *Two*	80.25 %	32.67 %	0.94

It is possible to add 8% Litesse® *Two*, with a small reduction in the water.
Litesse® *Two* contains 80% soluble fibers.

CONCLUSION

MULTIGRAIN / INTEGRAL THIN BREAD

Addition of 8% **Litesse® *Two*** improves the softness, foldability, moistness, bite force and freshness over time.

Control and the **Litesse® *Two*** trials all have the same addition of functional ingredients - Emulsifiers, Hydrocolloids and Bakery Enzymes.

In Multigrain / Integral products we recommend to use 8% **Litesse® *Two***, due to the big effect from day 1 to day 7.

Litesse® *Two* improves the softness of the products, even when adding less water than the control.

The possibility of having a high fibre content, by adding 8% **Litesse® *Two***, will provide 6.4% more added fiber calculated on Bakers % without any problems.

Therefore, we conclude that the improved quality is coming from the addition of the **Litesse® *Two*** alone.

SOLUTIONS FOR A WORLD OF FLATBREADS

Thin

Thicker

Product group type	Key aspects of process technology			Products	Benefits
	Dough forming	Baking	Dough rework		
 **Yufka, Lebanese/ Arabic bread,** **Chapati type**	single piece die cut lamination	Very short <9 s	NO YES	GRINDSTED® FlatBread 105	• Improved shelf life • Better foldability and less cracking
 **Wheat tortilla, Wraps**	Hot press	short 20-30 s	Typically, No (sometimes tortilla)	• GRINDSTED®POWER Flex 2000,3000 Range POWERFlex® 1100 NP • GRINDSTED® FlatBread® 103 • POWERFlex® 6000 series Relax PL 98032	• Improved Processability, Shelf life, • Foldability, moistness • Improved flexibility, • pH control without burning dots • Tortilla enzyme solutions
 **Piadina, Roti, Pita types, Lavash, (packed, long life)**	single piece lamination die cut lamination	Short baking <60 s	NO YES	• POWERBake Thins • GRINDSTED® FlatBread 102 (MEA) • Grindsted FlatBread 103 (EU)	• Improved freshness and softness on product with crumb structure • Improved flexibility, and pH control without burning dots
 **Thins, Naan, Pide Greek-style pita (packed, long life) pinsa pizza bases**	single piece lamination	longer 60s – 1.5 min	Typically no	GRINDSTED® FlatBread 105	• Improved shelf life • Better foldability and less cracking

Public

TORTILLA

New High Protein Tortilla

Public

HIGH PROTEIN TORTILLA

Visit us at our Tabletop

Introducing

POWERFLEX® FIT Pro

High protein

Plant based

HIGH PROTEIN TORTILLA

High Protein Tortilla combines the original tortilla experience with vegetable protein goodness for all who strive to increase plant-based foods in their life without compromising on taste.

WHY?

- Proteins support balanced nutrition.
- Protein enriched to reduce carbohydrates intake and prolong the feeling of satiety for longer.
- High-quality of pea protein allows good receptivity.
- For all types of meals or snacks and equally suitable for all ages.

WHAT'S IN IT FOR BUSINESS?

- Product portfolio diversification & differentiation
- High in protein claim
- Meeting consumer's needs on more protein & plant-based ingredients
- Answering consumer's willingness to explore healthier tortillas
- Improved palability, nice texture and eating quality
- Easy to handle in production
- Yield increase comparing to standard formulation

.

HIGH PROTEIN TORTILLA

Technical information

IFF PRODUCT DESIGN™
as used in High Protein Tortilla

New Powerflex® range:
POWERFLEX® FIT Pro

The optimal combination of product functionalities and know-how to meet market demand

- Protein content allow the claim of high in protein on pack
- Without compromising texture
- Improved palability, nice texture and eating quality
- Great taste
- Easy to handle in production
- Yield increase comparing to standard formulation

CLAIMS & INGREDIENTS:

EU NUTRITION CLAIMS (EC/1924/2006)
- High protein

EU HEALTH CLAIMS ((EU) No. 432/2012)
- Protein contributes to a growth in muscle mass
- Protein contributes to the maintenance of muscle mass
- Protein contributes to the maintenance of normal bones

INGREDIENT DECLARATION:
Wheat flour, water, plant-based protein, glycerol, vegetable oil, citric acid (E330), salt, emulsifier (E471), preservatives, flavors

Contains: Wheat

NUTRITION PROFILE

	High in protein claim	Even higher in protein level
KEY NUTRIENTS	**per 100g**	**Per 100g**
Energy	284Kcal	278Kcal
Energy	1200kJ	1172kJ
Fat	5.7g	5.9g
Saturated Fatty Acids	1.2g	1.6g
Mono-unsaturated fatty acids	2.5g	2.4g
Poly unsaturated fatty acids	1.7g	1.7g
Carbohydrates	42g	35g
Sugars	1.2g	1g
Fiber	2.5g	2.3g
Protein	**15g**	**20g**
Salt	1.6g	1.7g

Technical information for information only & based on concept samples of IFF High Protein Tortilla

THANK YOU

Jan Charles Hansen
Principal Designer I, Bakery
Creation and Design
IFF