

Oat as a Major Bakery Ingredient

Markku Mikola, PhD, Food Science

Research and Development Manager

Fazer Mill & Mixes

Contents

- Introduction
- Oat production and use in home market
- Food uses of Oat
- Bread market – change of an era
- Bread market change – opportunity for Oats
- Current use of Oat in Bakery ingredients
- Our approach to Oats ingredients

Introduction

- Fazer Group is considerable food player in Scandinavia, Baltics, St Petersburg and Moscow
- Bakery, Food services and Confectionery (Chocolate/Candies)
- Turnover 1.5 billion€,
- 8 countries, personnel 15,000
- Mill & Mixes Unit
 - Flour
 - Bakery Mixes and Premixes
 - Bread Improvers
 - Grain based natural fibres



Oat in Our Home Market around Baltic Sea

- Finland where Mill & Mixes situated
 - high per capita oat production
 - high per capita oat food use.
 - net exporter
- In Baltic Sea area it is estimated that human use of Oats will be growing quite fast in coming years.



Food uses of oat are mostly traditional

- Porridge flakes/meal,
- Ready-to-eat breakfast cereals, mueslis
- Convenience food sector muesli/grain bars
- Exotics such as Oat yoghurt and Oat Milk
- Baking, often more like spice than ingredient



Bread market – change of an era

Fazer

- Bread market has changed in many areas
- White wheat bread dominated earlier
 - Toasts
 - Hamburger/Hot dog buns
 - Rolls
- Today majority of breads displayed
 - Whole grain
 - Mixed grain
 - Flax seed for Omegas
 - Hemp for differentiation to whom
- This is major opportunity for Oat



Bread market change – Opportunity for Oats

- In Finland we estimate 20% of oats for human consumption to be used in bakery sector.
- In the market different types of breads including oats as major ingredient.
- **Including Oat based crisp bread.**
- Bread made of Gluten Free ingredients and Oat for Celiacs



Our approach to oats ingredients

- Where Oat is considered for human use
 - mixed breads are underestimated area
 - Wheat breads including high amounts of oats.
- Major target
- Fast moving bakery industry tries to attract the consumer
- New product launches are needed for sales
- New messages are needed for marketing
- New taste sensations are needed by consumers

Our approach to oats ingredients

- Variability in the bread calls for high amounts of Oats
 - Whole Grain Flour
 - Flakes/rolled oat
 - Bran
 - Endosperm flour
- This means that bread structure changes
- Does the consumer accept this?
- Some cases Yes → portion breads →



- **Our approach to oats ingredients**

-
- Consumer **accepts** major difference in structure
 - Typical flat piece bread/ sandwich thin
 - High amounts of oat flour/flakes can be used
 - Use of improvers, monoglycerides etc.
 - Use premixes including oat ingredients and improver
 - Consumer **does not accept** the difference
 - Compensate lower gluten
 - Use concentrated ingredients
 - Add vital gluten
 - Use premixes including oat ingredients and improver



**Use Concentrated Ingredients: example from
rye Fazer Ryefibre with almost 50% Dietary
Fibre**

Fazer

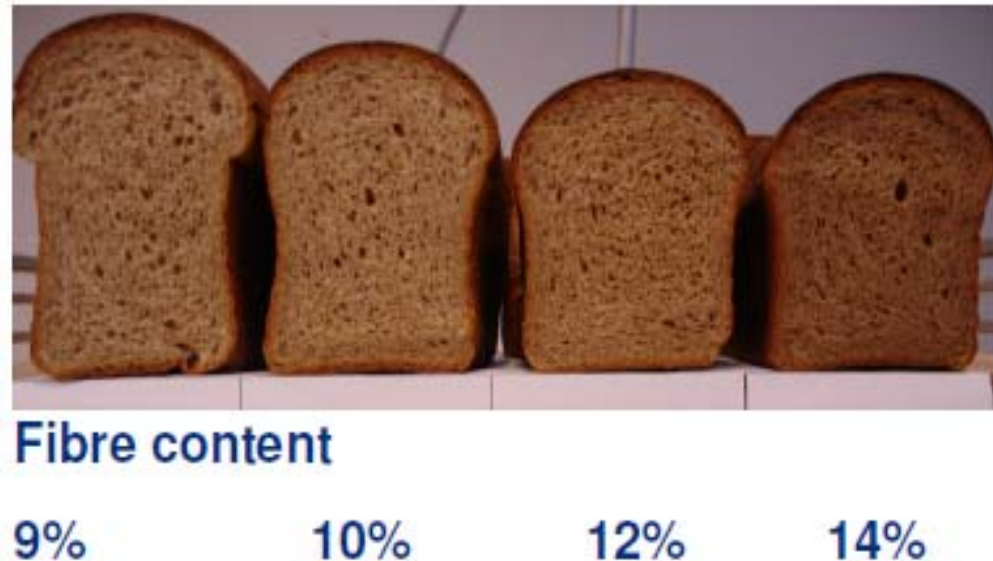
Easy to bake ingredient

- R³ Fazer Ryefibre ingredient
- Make a rye bread with high Dietary Fibre
- Product properties, except for colour, like standard Toast or Roll
- Wheat a major ingredient



Adding R³ Fazer Rye Fibre

- Adding fibre (bran or whole grain)
- Lowers volume
- More dense bread
- Lowering particle size →
- Lowering volume



Our approach to oats ingredients

- Developing breads comparable to wheat bread
 - Bread improvers, essential part of industrial baking today
 - Improvers to be optimized for oat baking.
 - Vital gluten often needed
 - Not to be overdosed
 - Price issue
 - Negative impact on eating quality



Our approach to oats ingredients

- Developing breads comparable to wheat bread
- For craft bakeries
 - Use a premix where extra ingredients included
 - Just add wheat flour, water, yeast and salt.
- In example product, 15% oats
- 20% can be easily reached

BASIC RECIPE

	g	%
Wheat flour V 600	2 090	41,8
OTTO-Mix	895	17,9
Dry yeast	50,5	1,0
Salt	55	1,1
Water	1 823	36,5
Rape seed oil	86,5	1,7
Total	5 000	100,0
MIXING TIME	2 min slow and 6 min fast speed	
DOUGH RESTING	15 min	
PROOFING PERIOD	37 °C, 67 %, 55 min	
BAKING TEMPERATURE	210 - 200 °C	
BAKING TIME	25 - 30 min	

Conclusion

- Oats could and should be used as standard ingredient in addition to being functional ingredient



CREATE YOUR OWN SOLUTIONS

THANK YOU

markku.mikola@fazer.com

See you at Table top



CREATE YOUR OWN SOLUTIONS