



GREEN PELLETS
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When a more expensive binder becomes cheaper in operation

Glufoss in practise

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This is what we will be talking about



Hour 0

Hour 1

Hour 5

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Glufoss – a taylor made natural additive for pellet production

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- Glufoss is a cold water soluble starch produced by Kröner Stärke that starts working already in room temperature
- Using Glufoss improves the whole spectra of pellet production
- It is a totally natural product, no chemicals added
- Glufoss is specially tailored for pellet production
- Improvements are immediate
- Glufoss is more expensive than other options, but also more profitable for the pellet production in the end
- If native or off-spec starch is used, random positive results will occur in an uncontrolled pattern

Kröner Stärke



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Family owned since
1900

100% sustainable
production

+100 000 mt
production capacity
per year

Reliable delivery
times

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Features that Glufoss has impact on

- Bulk density *
- Moist content *
- Durability *
- Productivity
- Even out production sensitivity
- Energy consumption
- Temperature build up in storage

* verified by Eurofins

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Why use Glufoss in pellet production?

- Glufoss is designed to deliver higher pellet quality, more stable production, and a lower total cost per tonne of finished pellets

1. Stronger pellet – less fines

- Glufoss binds fibres significantly more effectively than native starch.
- Improves mechanical strength and a reduced level of fines.
- Outcome: Less dust, cleaner logistics, and higher customer satisfaction.

2. Stable production and reliable operation

- The modified structure makes Glufoss more predictable in the pelletising process.
- Provides more even feed, reduced fluctuations in the presses and less wearage on the equipment.
- Contributes to extended lifetime of matrixes and presses.

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Why use Glufoss in pellet production?

3. Higher moist content

- Glufoss as a cold-water soluble starch binds up to 2-3% more moist in the pellet.

4. Lower energy consumption

- Glufoss functions as an internal process lubricant
- Less energy is required to press pellets.
- Not untypical that between 2-8% less energy is needed per tonne produced.

5. Improved control of pellet quality

- Performance remains stable despite natural variations in raw material (e.g moisture content and fibre composition)
- Consistent quality throughout the year -> fewer claims.

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Why use Glufoss in pellet production?

6. Higher production tempo with fewer shutdowns

- Glufoss allows of higher tempo without higher temperature and wearage
- Quality is always the same, full reliability and no adjustments needed throughout production

7. Temperature in storage stacks

- Due to binding more, and less fines, there is almost no build up of temperature in storage stacks. Temperatures remains at controlled levels, even with raw material dominated by pine.

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Examples from "real life"

- Swedish production plant
 - 65 000 mt annually
 - Glufoss dosing 0,5%
- Cost
 - 325 mt Glufoss per year = 419 000 € = 6,45 €/mt ex works (ca 6,85 €/mt ink works)
- Outcome and gain
 - Increased moist: 1,1% (6,6 -> 7,7%)
 - Bulk density increase: 6,3% (630 ->670 kg/m³)
 - Productivity: 10,5% (10,5 -> 11,6 t/h)
 - Durability: 3,2% (95,6 -> 98,7)
 - Fines: -70,2% (4,4 -> 1,3%)
 - Storage temperature: room temperature stable
 - About 30% less maintenance



Examples from "real life"

	From	To	%	Value/ton	Comment	Yerly savings	Share
Increased moist	6%	8%	2,0%	3,71 €		241 411 €	33%
Bulk density increase	620	650	4,8%		Easy to reach target	N/A	
Productivity	82%	92%	12,2%	See below			
Durability	95%	99%	4,0%			N/A	
Fines (after production)	5%	2%	3,0%	2,09 €	From 4,4% to 1,3%= 3,1% less	136 156 €	19%
Storage temperatuere, less fines production in storage			3,0%	2,09 €	Less fines in storage	136 156 €	19%
Pellets €/ton NMP				185,70 €			
Raw material				115,88 €			
Productions cost				58,82 €			
Overhead				6,00 €			
Profit				5,00 €			
Yearly production Ton			65 000				
With Glufoss extra production			7 927	27,93 €		221 391,9 €	30%
Total						735 115 €	100%
Glufoss			72 927	6,45 €		470 378 €	64%
Net saveings						264 737 €	36%



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When, or why reaching out to Green Pellets?

- We realize the knowledge among the pellet producers in this conference is on top levels and that high quality pellets in general are produced.
- But, if you run into challenges that affects quality and productivity depending on different reasons, Glufoss might be the key.
- There are always improvements to reach, and a cold water soluble starch like Glufoss has many positive features.
- The slight shift in raw material, from spruce against pine can be evened out with support from Glufoss.
- Glufoss is one more tool in your toolbox to build a better pellet.

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Summary

- Glufoss quality is always the same, no adjustments needed due to difference in starch quality
- When contract is written, deliveries will always come as planned. Contracts are written for annual volumes.
- Glufoss supports in evening out differences in incoming raw material, decreases costs and increases quality.
- Reaching two out of the seven mentioned feature improvements means the cost for Glufoss is covered. Reaching three or more improvements is money on the bottom row...



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Thank you for your attention!



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