



Sustainability Sheet

Replace imported soybean meal with rapeseed meal and protected lysine supplementation

Results: Maintain production with regional proteins



A PROTECOW trial demonstrated that replacing imported soybean meal by rapeseed meal with protected lysine supplementation can reduce the urea content in milk. Following this result, a simulation was made to assess the reduction in ammonia emissions on the farm.

FARM TRIAL

What has been done:

- Replace 2.4 kg of imported soybean meals (protected and non-protected) by 1.8 kg of protected rapeseed and 1.2 kg of conventional rapeseed meal.
- Supplement with 45 g of protected lysine.
- Balance the OEB level (rumen nitrogen balance) by adding 45 g of urea and the UFL (energy) level by increasing the proportion of barley and corn flour.

What we observed:

Dry matter intake remains similar with the rapeseed ration at 22.8 kg DM with a slightly lower energy intake, a slightly more negative OEB intake, but with the same consumption of digestible proteins.

				100
Ration	Soybean	Rapeseed + protected lysine	Impact	120 con 10 000 L/cow/v
Forages kg DM/cow/day				y
Grass silage	5,4	5,2	\downarrow	
Corn silage	8,9	8,6	\downarrow	
Barley straw	0,4	0,4	=	
Wet pressed beet pulp	2,3	2,3	=	
DDGS	1,3	1,3	=	
Concentrates (kg/cow/day)				
Barley	0,8	0,9	\uparrow	
Corn meal	1,5	1,7	\uparrow	
Soybean meal	1,3	0		
Protected soybean meal	0,9	0		
Rapeseed meal	0	1,2		
Protected rapeseed meal	0	1,8		7
Rumen protected lysine*	0	45 g	+	7
Urea	0	45 g	+	

* Lysine molecules are protected from rumen degradation. Lysine becomes available for the cow when it reaches intestine.

Impact on ammonia emissions and carbon footprint*



Impact of the feeding strategy

Milk production + 0.8 kg / cow/ d.
Milk protein yield + 25 g / LV / d.
Urea -3.6 mg / 100 g.

Zootechnical impact

• Increase concentrates usage /100 kg milk by + 24%.

• The economic impact is especially favourable when milk price and soybean meal price are high.

Limits

Opportunities

• Reduction in ammonia emission /kg milk by -4%.

-17% due to cessation of soybean imports.

• Less dependency on global markets.

Maintain production without imported soybeans.

Reduction of carbon footprint (in kg eqCO2 /kg milk) by

Environmental impact

* Impact on emissions was calculated from a simulation with the KringloopWijzer tool and should therefore be interpreted with caution.



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