Rovabio®

Scientific Report

Effect of Rovabio Excel LC on the degradability of corn DDGS from different sources

Trial CA07-1

1. Summary

The effect of Rovabio Excel LC on corn DDGS was evaluated *in-vitro* by testing the degradability of the dry matter of 13 samples from different qualities and origin. The degradability of the control samples was quite variable, ranging from 10 to 49% with an average of 24.5 %. The addition of Rovabio Excel LC increased the degradability of all samples, with an average of 31.2%, i.e. 6.8 points or 32% relative improvement, demonstrating the potential of Rovabio Excel to work on this type of substrate.

2. Experimental protocol

The effect of Rovabio Excel LC on the degradability of the dry matter of 13 corn DDGS from different sources was evaluated according to the following design:

2 x 13 treatments x 8 replicates per treatement

This *in-vitro* test was performed at the Carat laboratory of Adisseo in Commentry, France using corn DDGS samples collected from different countries and supplemented or not with Rovabio Excel LC (batch 4860784588). The methodology is an adaptation of the method developped by McNiven *et al.,* 2002 using and measuring dry matter degradability.

Table 1. Description of test conditions

Preparation	Nylon bag	Linen Bultex 50µm, piece of nylon 14 x 12 fold
	Raw materail	1 g
	Flask	Square- shaped bottle with stopper , 150 mL -
	Buffer	67 mL pH 5.2 acetic acid / sodium acetate (0.26 mmol)
	Rovabio Excel	None / 1 mL
Test	Bath temperature	40°C
	Agitation	Frequency = 100 (back and forth), with maximum amplitude
	Duration	2 h
Washing	Draining	5 min. layed on a funnel with heavy slope
	Washing	Taking the bag with clip and washings first on a face with 30 mL water then the other face
Drying	Draining	Suspending bag with clip
	Drying	Drying in oven at 60°C overnight

3. Results and discussion

The dry matter degradability of corn DDGS was quite variable, ranging from 10 to 49% with an average of 24.5 %. The addition of Rovabio Excel LC increased the degradability of all samples, with an average of 31.2, i.e. 6.8 points or 32% relative improvement with no significant chages in variability, demonstrating the potential of Rovabio Excel to work on this type of substrate.

Table 2. Comparison of dry matter degradability of several samples of corn DDGS with or without Rovabio Excel LC

Sample id.	Dry matter	Control		+ Excel LC		Difference	
	%	Mean	Std	Mean	std	As is	%
Std USA	91.8	26.7	1.4	37.1	1.7	10.4	39.0
Hi-Pro USA	94.0	21.5	0.7	29.2	1.8	7.7	35.8
Hi-Pro USA	93.7	17.9	0.6	26.9	1.9	9.0	50.3
Spain	92.6	28.1	0.5	33.6	0.5	5.5	19.6
Costa Rica	91.5	24.6	0.4	29.8	1.6	5.2	21.1
Malaysia	94.0	12.1	0.5	18.1	0.3	6.0	49.6
Finland	93.2	49.2	1.4	57.4	1.4	8.2	16.7
Guatemala	91.8	23.5	0.4	28.3	0.9	4.8	20.4
Indonesia	91.3	26.3	0.5	30.7	0.8	4.4	16.7
China	92.8	10.3	0.4	16.7	0.8	6.4	62.1
Korea	89.5	31.5	1.0	39.9	1.2	8.4	26.7
Philippines	90.1	25.6	1.0	32.3	1.2	6.7	26.2
Colombia	91.2	21.0	1.2	26.1	5.1	5.1	24.3
Mean	92.1	24.5		31.2		6.8	31.4

Reference:

McNiven, M.A., Prestløkken, E., Mydland, L.T. and A.W. Mitchell, 2002. Laboratory procedure to determine protein digestibility of heat-treated feedstuffs for dairy cattle. Animal Feed Science and Technology 96: 1–13