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van Vuuren, A. M.
de Koning, E.
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A. M. van Vuuren
DLO-Institute for Animal Science and Health
PO Box 65
8200 AB Lelystad, The Netherlands
(31) 320 237303
(31) 320 237320
a.m.vanvuuren@id.dlo.nl
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The effects of wet brewers grain on the net portal fluxes of ammonia, urea and amino acids in dairy cows. A. M. van Vuuren[1], A. Klop[1], G.A.L. Meijer[1], H. de Visser[1], and E. de Koning[2]*. [1]DLO-Institute for Animal Science and Health, Lelystad and [2]Bonda's Veevoederbureau, Hillegom, The Netherlands

Farmers obtain higher milk production when feeding wet brewers grain (WBG) than is predicted from feed analyses. It is possible that the absorbable protein (AP) value of WBG is larger than in situ estimates suggest. Therefore , an experiment was done to estimate the effect of WBG on the net flux of nitrogenous components across portal drained viscera (PDV) of dairy cows. Four dairy cows with a rumen cannula and catheters in the portal and hepatic vein and in a mesenteric artery received a TMR containing concentrates and either pre-wilted grass silage or corn silage. The basal diet was fed as such (14.2 kg DM) or supplemented with 4.1 kg DM from WBG or with 4.1 kg DM from a mixture (85:15) of WBG and citruspulp (WBG+). Due to catheter obstructions, blood sampling was incomplete and the effect of citruspulp could not be statistically analyzed. Supplementation with WBG or WBG+ led to a higher energy intake, more milk, and a higher portal blood flow. Supplementation increased net urea uptake and net AA-N release by the PDV. According to the tabulated value, supplementation with WBG should have increased the AP supply by approximately 0.4 kg/d. However, extrapolating the extra net portal AA-N flux to an AA-protein flux indicated an increase in actual AP of 0.7 to 1.2 kg/d. These results suggest that the AP value of WBG is higher than presently assumed.

	Grass silage			Corn silage			
	Contr	WBG	WBG+	Contr	WBG	WBG+	SED
AP intake, kg/d[a]	1.22	1.60	1.62	1.29	1.63	1.68	-
Urea-N flux, mol/h	-0.10	-0.39	-0.40	-0.20	-0.31	-0.39	0.10
NH_3-N flux, mol/h	0.36	0.47	0.46	0.32	0.50	0.43	0.15
AA-N flux, mol/h	0.44	0.80	0.90	0.45	1.11	0.97	0.30
AA-protein flux, kg/d	0.83	1.52	1.70	0.85	2.09	1.79	0.57

[a]Calculated as digestible protein in small intestine (DVE)

Dairy Cattle, Protein, Portal flux