

Table 4. Interaction effects between feeding DDGS and with or without supplemented SW on dry Matter (DM) intake, digestion coefficients and feeding value of experimental rations.

Items	R1	R2	R3	R4	R5	R6	R7	R8	R9	± SEM	P
DDGS (%)	0.0	10.0	20.0	0.0	10.0	20.0	0.0	10.0	20.0		
SW (%)	0.0				0.5			1.0			
DM intake (g/h/d)	107.39	114.56	119.36	115.97	118.37	126.67	119.70	128.91	117.02	3.415	0.047
<i>Nutrient digestibility (%):</i>											
DM	71.92	72.35	72.33	72.24	72.03	71.00	72.02	71.44	71.82	0.546	0.515
OM	74.20	75.20	74.42	74.34	74.96	74.28	75.04	74.30	73.73	0.493	0.407
CP	63.63	66.00	63.63	67.73	66.60	63.33	64.68	66.28	65.83	0.725	0.007
EE	65.13	66.37	72.75	75.01	76.08	74.06	78.93	83.35	79.70	2.376	0.212
CF	30.32	36.16	44.48	30.38	35.67	38.38	31.38	31.38	31.85	1.491	0.002
NFE	91.86	91.74	88.86	91.36	90.57	90.40	91.44	90.25	89.83	0.554	0.129
NDF	37.74	43.24	47.40	38.31	42.19	43.15	39.35	39.56	42.65	1.196	0.071
ADF	21.06	30.10	37.60	22.56	29.37	32.56	23.77	27.47	28.81	1.535	0.019
Hemicellulose	57.66	59.59	59.37	55.89	58.37	56.43	58.41	55.93	60.05	1.008	0.041
Cellulose	24.55	36.71	45.10	25.18	33.76	37.79	27.44	32.67	33.97	2.044	0.038
ADL	11.06	10.44	10.55	11.45	10.59	10.72	10.79	10.70	11.13	0.423	0.755
<i>Feeding value as DM (%):</i>											
TDN (%)	67.98	70.42	70.84	68.66	70.84	71.19	70.11	70.97	70.44	0.498	0.131
TDNI (g/h/d)	72.96	80.65	84.55	79.62	83.85	90.18	83.93	91.40	82.41	2.242	0.010
DCP (%)	12.32	12.47	11.92	12.86	12.85	12.54	12.19	12.80	12.77	0.139	0.012
DCPI (g/h/d)	13.21	14.29	14.23	14.91	15.21	15.89	14.60	16.51	14.94	0.431	0.145
DE* (kcal/kgDM)	2989.39	3094.14	3106.79	3024.10	3116.08	3127.94	3077.81	3121.31	3098.81	22.104	0.253
DEI (kcal/h/d)	320.82	354.36	370.79	350.70	368.84	396.24	368.46	402.02	362.54	9.874	0.012
ME** (kcal/Kg)	2765.37	2827.60	2863.58	2733.49	2829.79	2891.55	2796.61	2846.28	2855.94	--	--
MEI (kcal/d)	296.98	323.94	341.80	317.01	334.95	366.28	334.76	366.92	334.19	9.673	0.020
DCPI / DEI (g/Mcal)	41.19	40.32	38.38	42.51	41.25	40.10	39.61	41.01	41.21	0.293	<.0001

SEM = Standard error of means,

P = Probability.

* DE (kcal/kgDM) = (5.28 × DCP) + (9.51 × DEE) + (4.20 × DCF) + (4.20 × DNFE), (Schiemann *et al.* (1972).

** ME (kcal/Kg) = (37 × CP) + (81 × EE) + (35.5 × NFE), (Pauzenga, 1985).

Table 3. Main effects of supplemented SW or feeding DDGS on dry matter(DM) intake, nutrient digestibility and feeding value of experimental rations.

Items	SW (%)					DDGS (%)				
	0.0	0.5	1.0	± SEM	P	0.0	10.0	20.0	± SEM	P
DM intake (g/h/d)	113.77 ^b	120.34 ^a	121.88 ^a	1.972	0.017	114.36 ^b	120.61 ^a	121.02 ^a	1.972	0.042
Nutrient digestibility (%):										
DM	72.20	71.76	71.76	0.315	0.524	72.06	71.94	71.72	0.315	0.738
OM	74.60	74.53	74.36	0.285	0.825	74.53	74.82	74.14	0.285	0.259
CP	64.42 ^b	65.89 ^a	65.60 ^{ab}	0.419	0.047	65.35 ^{ab}	66.30 ^a	64.27 ^b	0.419	0.008
EE	68.08 ^c	75.05 ^b	80.66 ^a	1.372	<.0001	73.02	75.27	75.50	1.372	0.383
CF	36.99 ^a	34.81 ^a	31.54 ^b	0.861	0.001	30.69 ^c	34.40 ^b	38.24 ^a	0.861	<.0001
NFE	90.82	90.78	90.51	0.320	0.759	91.55 ^a	90.85 ^a	89.69 ^b	0.320	0.001
NDF	42.79	41.22	40.52	0.691	0.076	38.47 ^c	41.67 ^b	44.40 ^a	0.691	<.0001
ADF	29.59	28.16	26.68	0.886	0.086	22.46 ^c	28.98 ^b	32.99 ^a	0.886	<.0001
Hemicellulose	58.87	56.90	58.13	0.582	0.069	57.32	57.97	58.62	0.582	0.303
Cellulose	35.45	32.24	31.36	1.180	0.051	25.72 ^c	34.38 ^b	38.95 ^a	1.180	<.0001
ADL	10.68	10.92	10.87	0.244	0.766	11.10	10.58	10.80	0.244	0.330
Feeding value as DM (%):										
TDN (%)	69.75	70.23	70.50	0.288	0.189	68.92 ^b	70.74 ^a	70.82 ^a	0.288	<.0001
TDNI (g/h/d)	79.39 ^b	84.55 ^a	85.91 ^a	1.294	0.003	78.84 ^b	85.30 ^a	85.71 ^a	1.294	0.001
DCP (%)	12.24 ^b	12.75 ^a	12.59 ^a	0.080	0.0004	12.46 ^b	12.71 ^a	12.41 ^b	0.080	0.031
DCPI (g/h/d)	13.91 ^b	15.34 ^a	15.35 ^a	0.249	0.0003	14.24 ^b	15.34 ^a	15.02 ^a	0.249	0.013
DE* (kcal/kg DM)	3063.44	3089.37	3099.31	12.762	0.141	3030.43 ^b	3110.51 ^a	3111.18 ^a	12.762	<.0001
DEI (kcal/h/d)	348.65 ^b	371.93 ^a	377.67 ^a	5.701	0.003	346.66 ^b	375.07 ^a	376.52 ^a	5.701	0.001
ME** (kcal/Kg)	2818.85	2818.28	2832.94	--	--	2765.16	2834.56	2870.36	--	--
MEI (kcal/h/d)	320.91 ^b	339.41 ^a	345.29 ^a	5.585	0.012	316.25 ^b	341.94 ^a	347.42 ^a	5.585	0.001
DCPI / DEI (g/M cal)	39.96 ^c	41.29 ^a	40.61 ^b	0.169	<.0001	41.11 ^a	40.86 ^a	39.90 ^b	0.169	<.0001

a, b, c : Means within the same raw with different superscripts are significantly different (P < 0.05).

SEM = Standard error of means.

P = Probability.

* DE (kcal/kgDM) = (5.28 ×DCP) + (9.51 ×DEE) + (4.20 ×DCF) + (4.20 ×DNFE), (Schiemann *et al.* (1972).

** ME (kcal/Kg) = (37 ×CP) + (81 ×EE) + (35.5 ×NFE), (Pauzenga, 1985).

Table 6. Interaction effects between feeding DDGS and with or without supplemented SW on digestible (%) of CP, CF, EE and NFE. and relationship to digestible energy intake (kcal) of the experimental rations.

Items	R1	R2	R3	R4	R5	R6	R7	R8	R9	± SEM	P
DDGS (%)	0.0	10.0	20.0	0.0	10.0	20.0	0.0	10.0	20.0		
SW (%)	0.0			0.5			1.0				
DEI (kcal/h/d)	320.82	354.36	370.79	350.70	368.84	396.24	368.46	402.02	362.54	9.874	0.012
<i>Digestible nutrients (%):</i>											
DCP	12.32	12.47	11.92	12.86	12.85	12.54	12.19	12.80	12.77	0.139	0.012
DCF	4.58	5.64	6.98	4.93	5.59	5.92	4.81	4.88	4.94	0.231	0.001
DEE	2.01	2.98	4.44	2.66	3.38	4.20	2.45	4.14	4.31	0.104	<.0001
DNFE	46.57	45.60	41.96	44.89	44.78	43.29	47.59	43.98	43.03	0.272	<.0001
<i>Digestible nutrients intake (g/h/d):</i>											
DCPI (g/h/d)	13.21	14.29	14.23	14.91	15.21	15.89	14.60	16.51	14.94	0.431	0.145
DCFI (g/h/d)	4.89	6.45	8.33	5.72	6.61	7.50	5.77	6.27	5.78	0.274	<.0001
DEEI (g/h/d)	2.14	3.41	5.29	3.08	4.02	5.32	2.93	5.33	5.03	0.161	<.0001
DNFEI (g/h/d)	50.04	52.23	50.10	52.06	52.99	54.83	56.97	56.63	50.36	1.484	0.031
<i>Digestible nutrients (g) to digestible energy intake (Kcal):</i>											
DCPI / DEI	41.19	40.32	38.38	42.51	41.25	40.10	39.61	41.01	41.21	0.293	<.0001
DCFI / DEI	15.30	18.21	22.46	16.30	17.91	18.92	15.63	15.63	15.94	0.653	0.0004
DEEI / DEI	6.70	9.62	14.28	8.78	10.86	13.41	7.96	13.25	13.89	0.298	<.0001
DNFEI / DEI	155.84	147.41	135.06	148.46	143.74	138.39	154.65	140.90	138.89	1.238	0.0002

SEM = Standard error of means;

P = Probability.

Table 5. Main effects of supplemented SW or feeding DDGS on digestible (%) of CP, CF, EE and NFE and relationship to digestible energy intake (kcal) of the experimental rations.

Items	SW (%)					DDGS (%)				
	0.0	0.5	1.0	± SEM	P	0.0	10.0	20.0	± SEM	P
DEI (kcal/h/d)	348.65 ^b	371.93 ^a	377.67 ^a	5.701	0.003	346.66 ^b	375.07 ^a	376.52 ^a	5.701	0.001
<i>Digestible nutrients (%):</i>										
DCP	12.24 ^b	12.75 ^a	12.59 ^a	0.080	0.0004	12.46 ^b	12.71 ^a	12.41 ^b	0.080	0.031
DCF	5.73 ^a	5.48 ^a	4.88 ^b	0.133	0.0004	4.78 ^c	5.37 ^b	5.95 ^a	0.133	<.0001
DEE	3.14 ^c	3.41 ^b	3.63 ^a	0.060	<.0001	2.37 ^c	3.50 ^b	4.31 ^a	0.060	<.0001
DNFE	44.71	44.32	44.87	0.157	0.056	46.35 ^a	44.79 ^b	42.76 ^c	0.157	<.0001
<i>Digestible nutrients intake (g/h/d):</i>										
DCPI (g/h/d)	13.91 ^b	15.34 ^a	15.35 ^a	0.249	0.0003	14.24 ^b	15.34 ^a	15.02 ^a	0.249	0.013
DCFI (g/h/d)	6.56 ^a	6.61 ^a	5.94 ^b	0.158	0.010	5.46 ^c	6.44 ^b	7.20 ^a	0.158	<.0001
DEEI (g/h/d)	3.61 ^c	4.14 ^b	4.43 ^a	0.093	<.0001	2.72 ^c	4.25 ^b	5.21 ^a	0.093	<.0001
DNFEI (g/h/d)	50.79 ^b	53.29 ^a	54.65 ^a	0.857	0.012	53.02	53.95	51.76	0.857	0.212
<i>Digestible nutrients (g) to digestible energy intake (Kcal):</i>										
DCPI / DEI	39.96 ^c	41.29 ^a	40.61 ^b	0.169	<.0001	41.11 ^a	40.86 ^a	39.90 ^b	0.169	<.0001
DCFI / DEI	18.66 ^a	17.71 ^a	15.73 ^b	0.377	<.0001	15.74 ^c	17.25 ^b	19.11 ^a	0.377	<.0001
DEEI / DEI	10.20 ^c	11.02 ^b	11.70 ^a	0.172	<.0001	7.81 ^c	11.24 ^b	13.86 ^a	0.172	<.0001
DNFEI / DEI	146.10	143.53	144.81	0.715	0.055	152.98 ^a	144.02 ^b	137.45 ^c	0.715	<.0001

a, b, c : Means within the same raw with different superscripts are significantly different (P < 0.05).

SEM = Standard error of means.

P = Probability.