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The following one-page abstracts summarise papers presented at Animal Production 2018 in addition to those published as peer-reviewed research papers or reviews in the special issue of *Animal Production Science* Volume 58, Issue 8. Their sequence is grouped into 12 major topic areas. These abstracts were independently reviewed by at least one reviewer for merit and clarity before final acceptance by the guest editors.

Large variability in individual animal's intake of lick-block supplements is correlated with individual liveweight and growth rate in cattle

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Supplementation with molasses and mineral blocks offered as free choice have been less studied than traditional dry loose supplements (Bowman and Sowell 1997) with a major challenge being to measure individual supplement intake and feeding behaviour. Nowadays, this is possible using novel in-paddock technologies such as electronic feeders (EF). This study investigated the correlation between lick block supplement intake and cattle liveweight and growth.

Twenty-seven Charolais x Angus steers and heifers (initial weight 192 ± 37 kg) were rotationally grazed on 15 ha of temperate pastures and oat crops (10 paddocks) during 219 days from May to December (John Pye Farm, The University of Sydney, NSW). Lucerne, wheat and oat hay was offered for the last 74 days of the trial because of low rainfall. A yard was built enclosing the only water point where an EF (Smartfeed) was installed. A single cooked molasses lick block (40 kg; 4 Season Co. Pty Ltd, Creastmead, QLD) was available inside the EF throughout the experiment. Additionally, a walk-over-weighing scale (WoW, Precision Pastoral) was placed at the entry of the enclosure to measure cattle liveweight (LW) regularly. The EF records the electronic ID tag, date and time, feed consumed and duration of all visits. Animals were also mustered to central yard facilities and weighed at the start (Initial LW) and end (Final LW) of the trial to calculate ADG. A Pearson's correlational matrix was calculated to identify relationships between supplement intake, liveweight and growth rate.

Supplement intake was positively correlated with AGD, Initial and Final LW, visit frequency, total feeding duration and eating rate ($P < 0.05$). Supplement consumption showed a large variability among animals with minimum, average and maximum values of 0, 80 and 198 g/hd/day, respectively. Time spent licking the blocks was 0.0, 3.0 and 8.2 minutes/hd/day for minimum, average and maximum, respectively.

The large variability amongst animals in lick block intake, which affects growth rate, indicates that there is a need to study animal response to supplements at the individual level rather than at the group level. It is also important to ensure high lick block intake across all animals in group-fed conditions to achieve a high response to supplementation. Further research is needed to understand the reasons for such high variability in supplement intake amongst animals in a group.

Table 1. Pearson's correlation matrix among Supplement intake (g/hd/day), ADG (g/hd/day), Final LW (kg), Initial LW (kg), Visit Frequency (No/hd), Total duration (min), Visit Duration (min/visit) and Eating rate (g/min). Values below the diagonal show p-values and above it are correlation values

	Supplement intake	ADG	Final LW	Initial LW	Visit frequency	Total duration	Visit duration	Eating rate
Supplement intake	1	0.4079	0.6190	0.4743	0.9323	0.9491	0.3541	0.4843
ADG	0.0386	1	0.3869	-0.0625	0.5044	0.5072	0.2108	0.1141
Final LW	0.0007	0.0509	1	0.8958	0.5462	0.5507	-0.0432	0.2818
Initial LW	0.0144	0.7615	<.0001	1	0.3500	0.3532	-0.1475	0.2447
Visit frequency	<.0001	0.0086	0.0039	0.0797	1	0.9707	0.2856	0.3438
Total duration	<.0001	0.0082	0.0036	0.0767	<.0001	1	0.3769	0.2920
Visit duration	0.0760	0.3013	0.8342	0.4721	0.1573	0.0577	1	0.5158
Eating rate	0.0142	0.5871	0.1724	0.2385	0.0924	0.1568	0.0083	1

Reference

Bowman JGP, Sowell BF (1997) *Journal of Animal Science* **75**, 543–550.