

PSVII-5: Drinking device can reduce apparent water consumption and improve device cleanliness without impairing calf performance

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Introduction



Water is a scarce resource and essential nutrient

Drinking device affects:

1. water spillage
2. Water intake and therefore performance
3. Water quality

Objective

The aim of this study was to evaluate the effect of drinker device on concentrate and water intake, performance and water spillage during the winter months.

Materials and Methods

- 118 Holstein male calves (311 ± 1.4 kg and 228 ± 0.6 d of age) during the winter months were used
- Calves were allocated in 6 pens (3 pens/treatment; 19 to 20 calves/pen)
- Treatments:
 1. **TRO**: one water trough (35 cm x 35 cm, no pressure was required)- Figure 1
 2. **BO**: one bowl with nipple facing up (bowl with a 20 cm diameter and 5-cm nipple, bite-style that was activated then animals pressed the nipple)- Figure 2
- Concentrate and water intake was recorded daily, body weight (BW), drinker device cleanliness, and water spillage (DM of bedding under the drinker) fortnightly, and water quality monthly.
- Data were analyzed using a mixed-effects model.



Figure 1. TRO Drinker



Figure 2. BO Drinker



Water spillage:
 TRO (70.3 ± 1.67 %) vs BO (75.6 ± 1.67 %
 DM of bedding under the drinker)

Results

Table 1. Performance, feed and water intake and carcass data of Hostein bulls with a water trough (TRO) or a bowl with a nipple facing up (BO) per

	TRO	BO	SEM	T	Time	T x Time
Initial BW, kg	310	312	1.4	0.36		
Slaughter BW, kg	469	471	3.1	0.69		
ADG, kg/d	1.35	1.36	0.061	0.93	< 0.001	0.001
Water intake, L/d	26.5	25.5	0.39	0.10	0.42	0.85
Concentrate intake, kg/d as fed	7.4	7.3	0.20	0.81	< 0.001	0.91
Carcass weight, kg	245	249	1.8	0.12		
Dressing, %	52.3	52.9	0.19	0.02		



No differences in water quality parameters were observed despite cleanliness of TRO was lesser compared with BO devices (83.3 % vs 2.0% had presence of feed, respectively, $P < 0.001$).

Conclusions

Data of the present study are promising; the bowl nipple device reduces 4% apparent water consumption and water spillage with no impairment in animal performance and improving device cleanliness. A replicate trial will be run during summer months to contrast and complete the present study results.