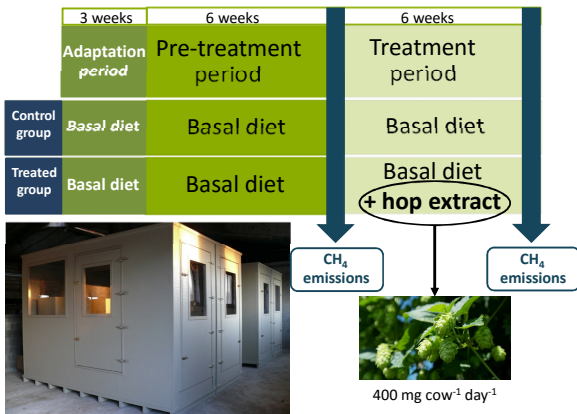


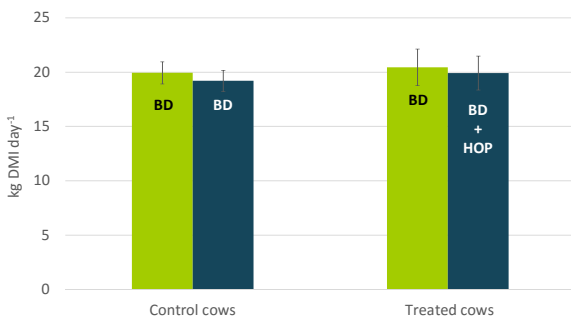
Materials and Methods



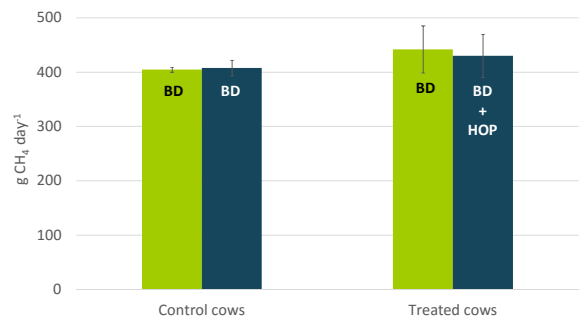
Results



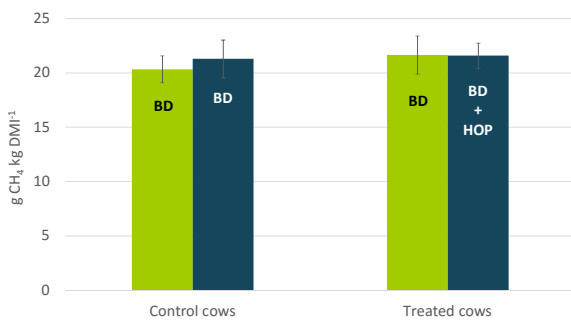
Results - DMI



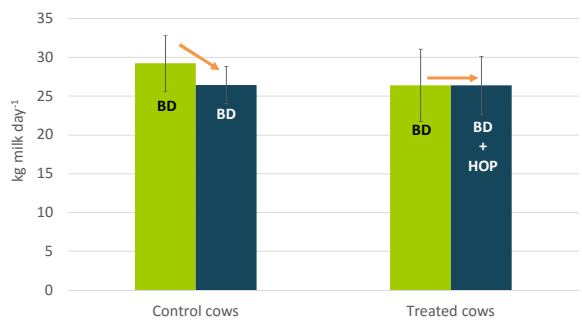
Results – g CH₄ day⁻¹



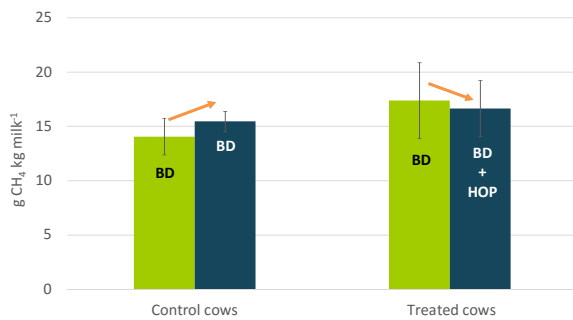
Results – g CH₄ kg DMI⁻¹



Results – milk production



Results – g CH₄ kg milk⁻¹



Discussion

- *In vitro* research showed CH₄ production could be reduced by the addition of whole hops or hop extracts (Narvaez et al., 2011, 2013a, 2013b)
- In this *in vivo* study there was no direct methane mitigating effect caused by the daily addition of 400 mg hop extract for each cow, but ...

Discussion

- ... This *in vivo* study did show positive effects of the hop extract on milk production
 - Reason for this?
 - Presence of phytoestrogens in the hop extract?
 - Most of the time phytoestrogens have negative effects on fertility of ruminants (Adams, 2014)
 - not much known about the influence on milk production
 - Ionophore-like working mechanism of the bitter acids?
 - Cornelison et al. (2006): broiler diets supplemented with whole hops gave improved growth and feed utilization

Conclusion and perspectives

- Only influence was on milk production, not on methane emissions
 - Still, further investigation of this additive and its working mechanism is needed
 - Trial with more animals to confirm the persistency in milk production (in progress)
 - Higher concentrations needed to overcome losses in biological activity due to the rumen metabolism?

Thank you



Dorien Van Wesemael
 Flanders research institute for agriculture,
 fisheries and food
 Scheldeweg 68
 9090 Melle – Belgium
 T + 32 (0)9 272 26 64
dorien.vanwesemael@ilvo.vlaanderen.be
www.ilvo.vlaanderen.be