

Feeding strategies to mitigate enteric methane emission from ruminants in grasslands system

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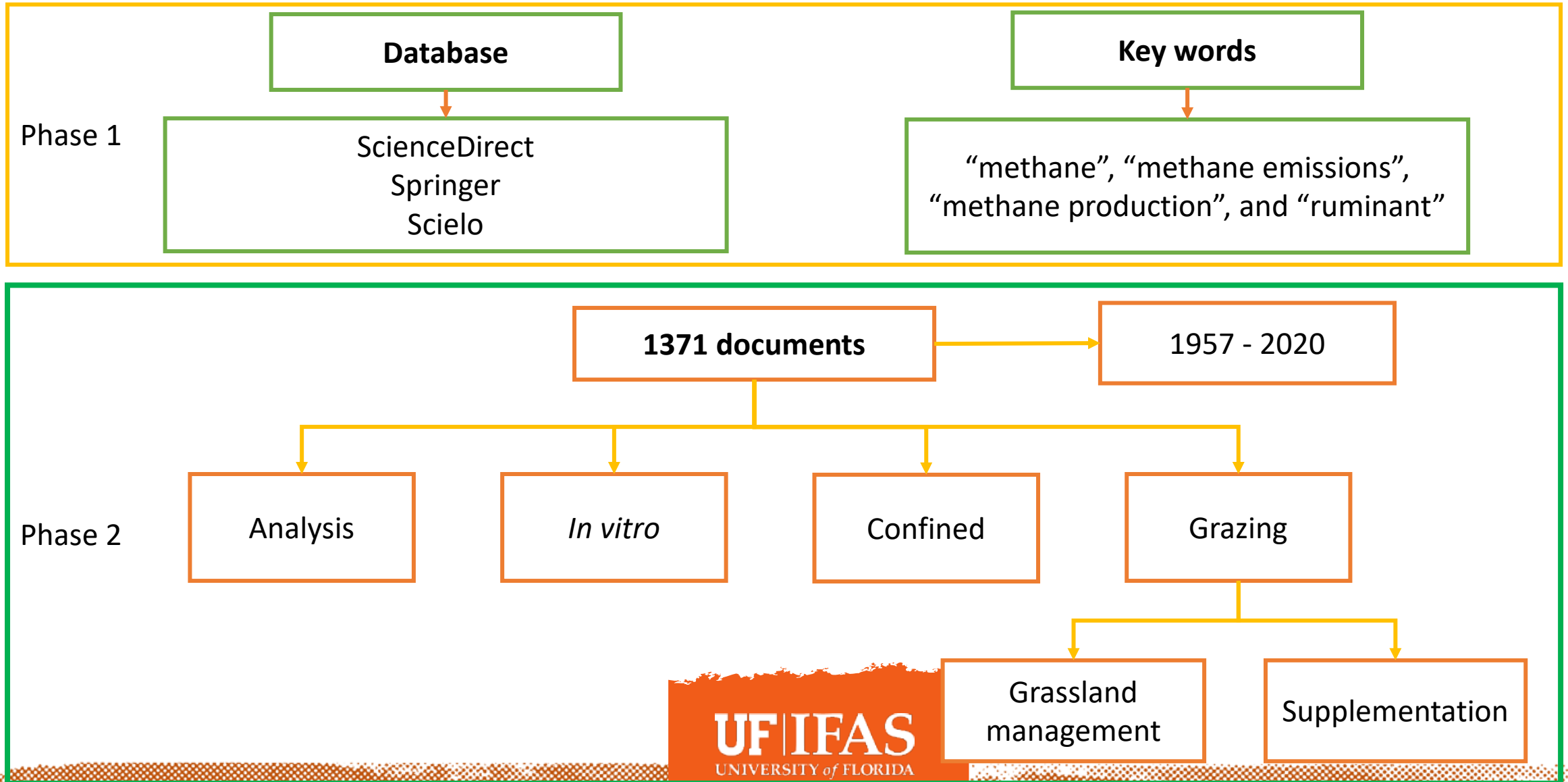
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General Overview

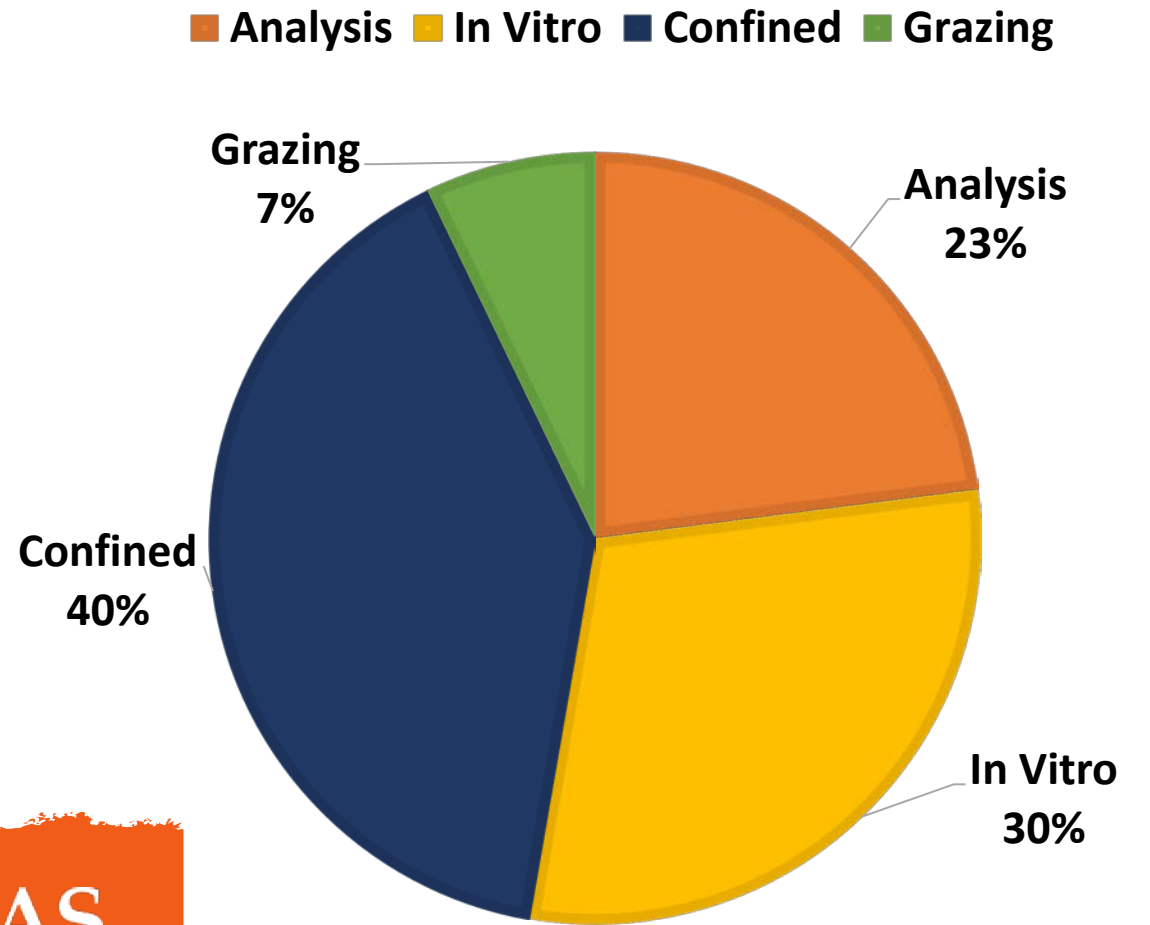
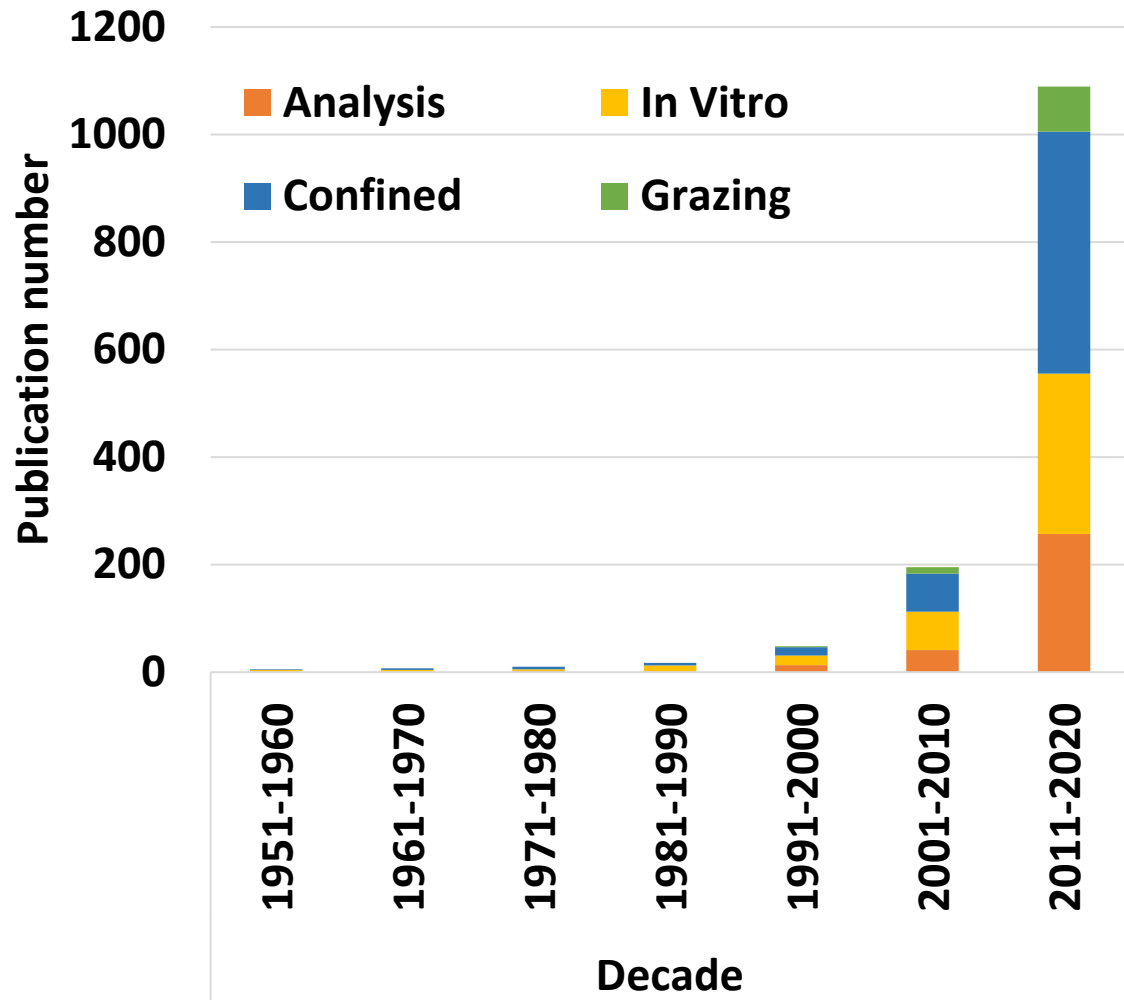
- Ruminants are an **essential component** in grasslands systems to provide ecosystems services^{1,2,3}
- Ruminants are associated with greenhouse gas production, especially **enteric methane** emissions⁴. Also, methane is an **energy loss** for ruminants⁵
- 75% of the enteric methane comes from ruminants on **low-quality diets**⁶
- There is not clear the response of methane abatement **strategies in grazing** conditions
- The objectives of this research were **to recognize** and **describe** enteric methane **abatement practices in grazing conditions**

Materials and methods

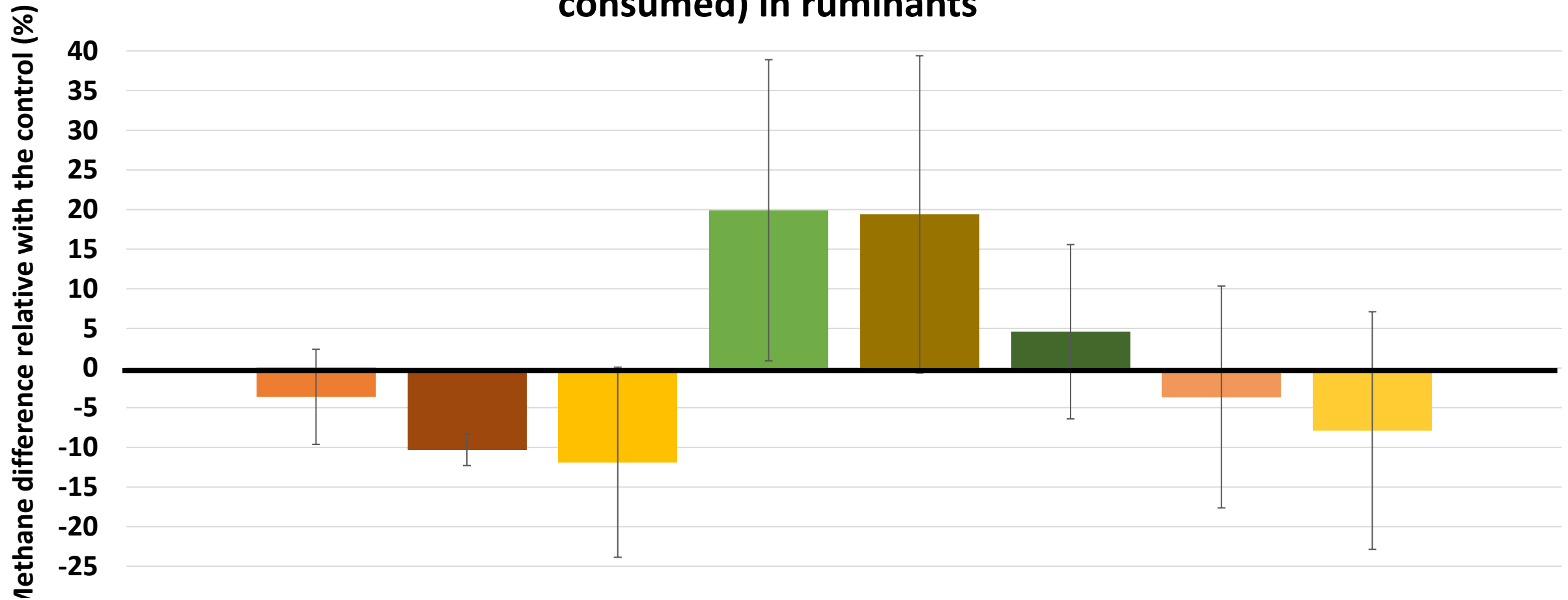


Results

Publication and distribution of methane research



Effect of grassland management on methane emissions (g/kg of DM consumed) in ruminants



■ Grazing intensity (high stocking rate), n=12

■ **Grazing intensity (low pregrazing biomass), n=6**

■ Grazing method (rotational), n=2

■ Grazing time (inmature grass), n=5

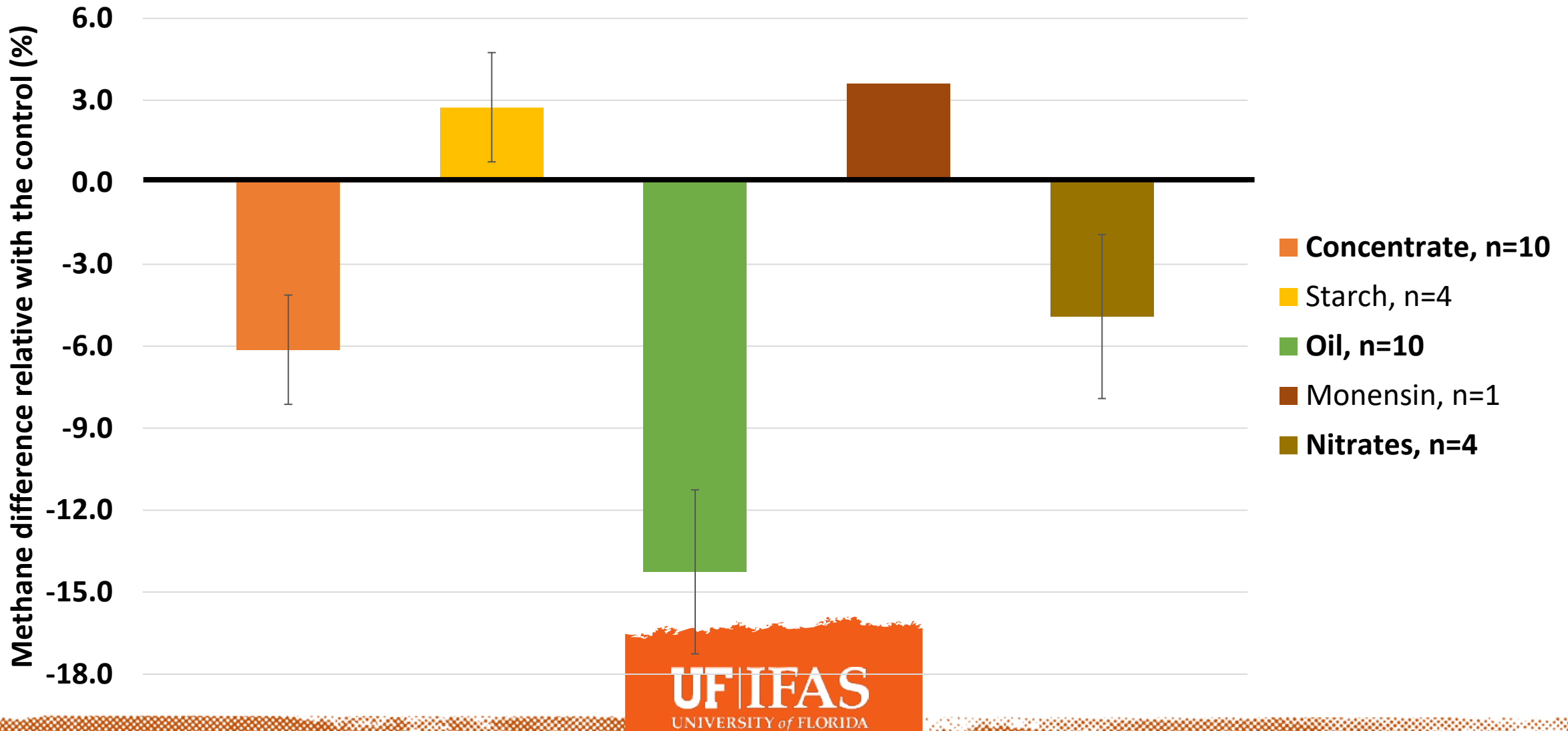
■ N fertilization, n=2

■ Non-tannin legume, n=4

■ Tannin legume, n=2

■ Silvopastures, n=2

Effect of different supplementation strategies on methane emissions (g/kg of DM consumed) in ruminants under grazing conditions



Take-home messages

- There is a greater interest to **understand and reduce enteric methane emissions** from ruminants, although **less research** has been conducted in pastoral systems
- There is limited information in **fertilization effect, silvopastoral systems** or **inclusion of legumes**. Also, there are few research in **supplementation**
- **Low pre-grazing grassland** management showed more consistent reduction on CH_4 , however, it is important ensure the **persistence of forages**. Additionally, **concentrate, oil, and nitrate supplementation** reduced CH_4 , but **life cycle** and **profit analysis** are required to be implemented in farms
- **Other abatement strategies** should be evaluated in grazing conditions as **supplementation** (e.g., 3NOP or EO) and **management** (e.g., modulation of rumen microorganism) practices



Thank you

Questions

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DiLorenzo's web page:

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