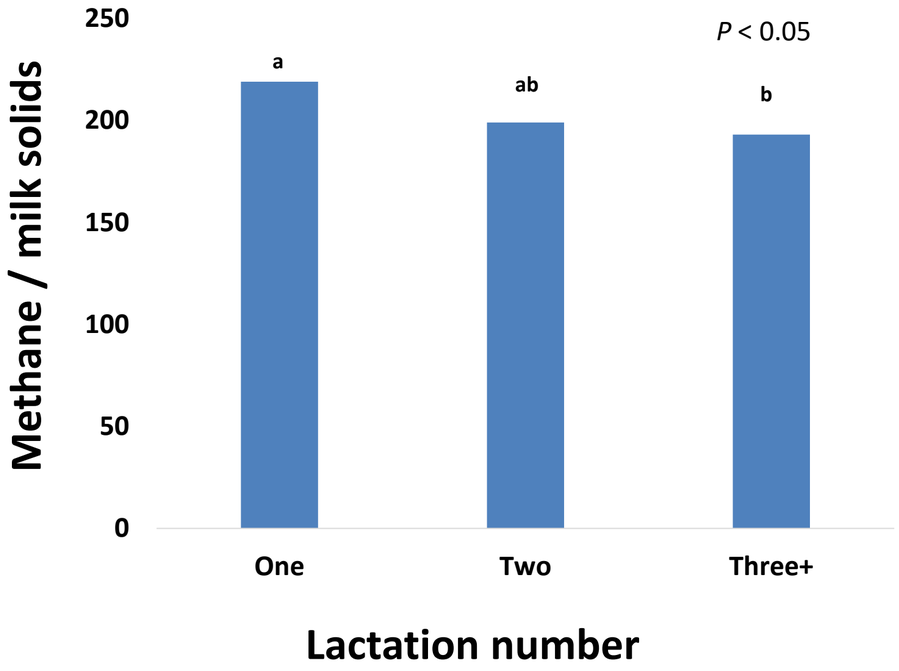
Research areas

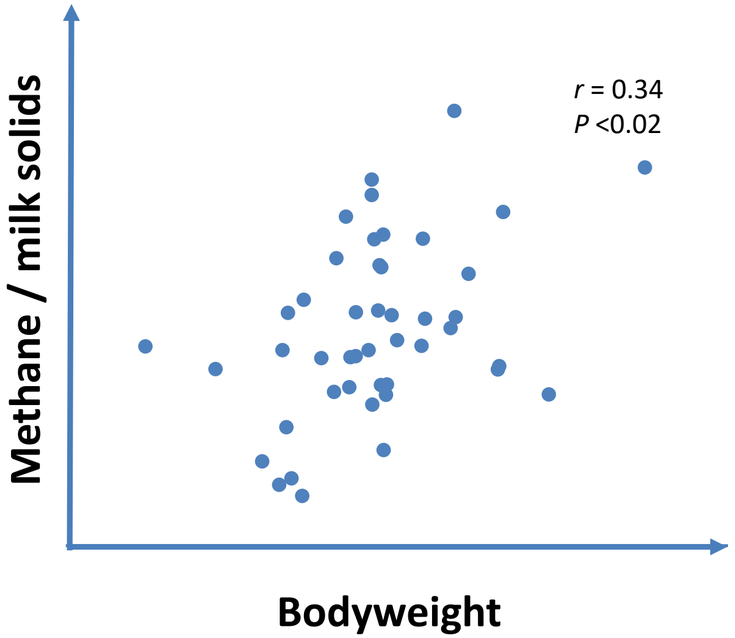
- Sward factors

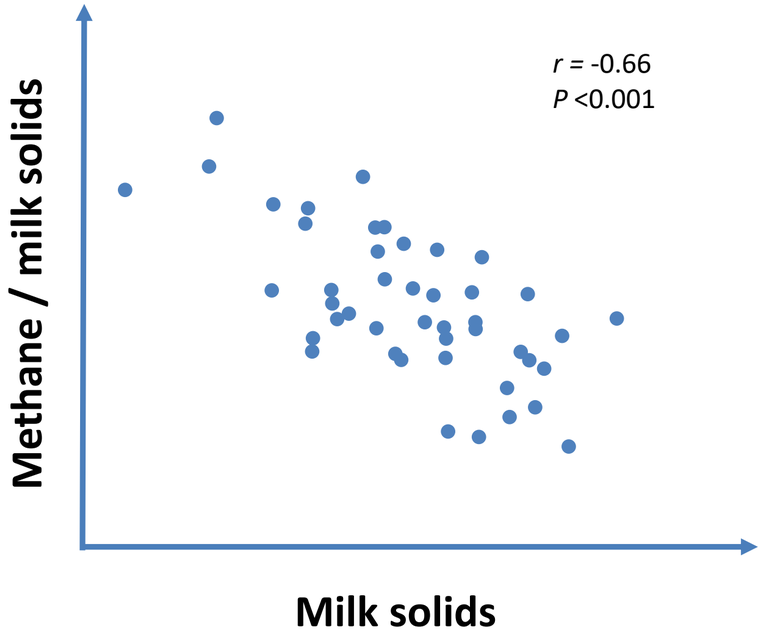
- Animal factors / genetics

- Feed additives

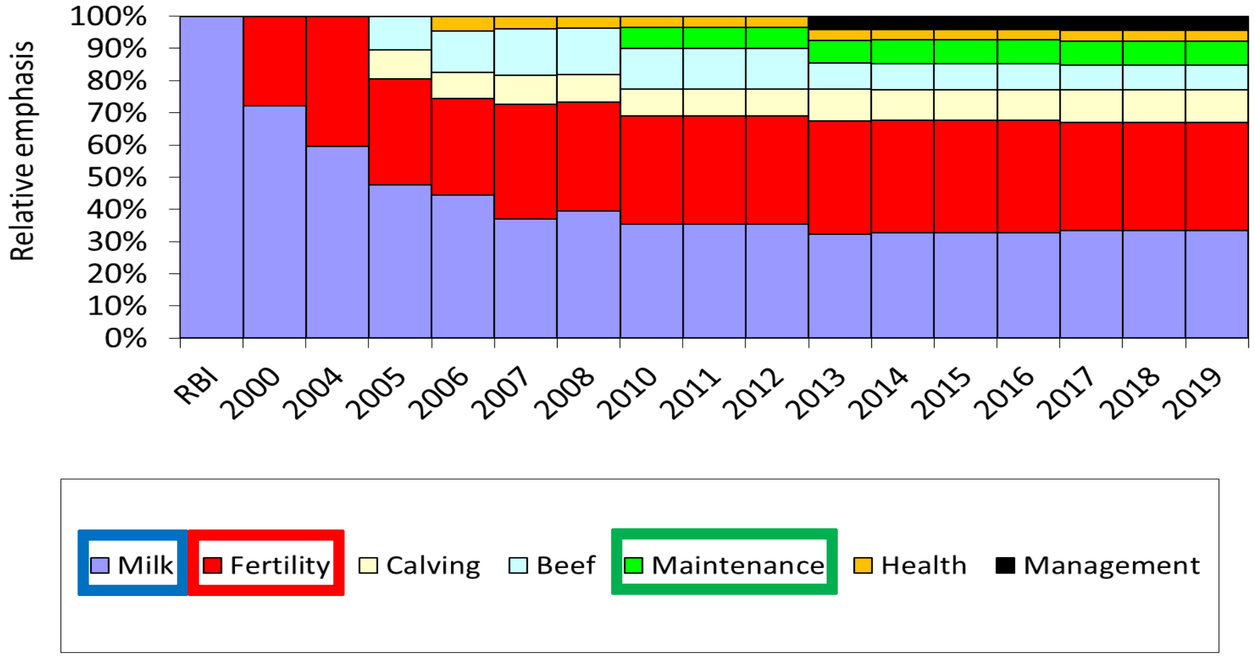
Animal traits



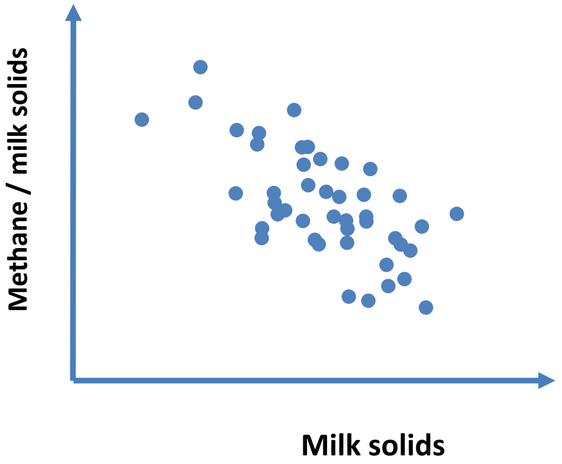


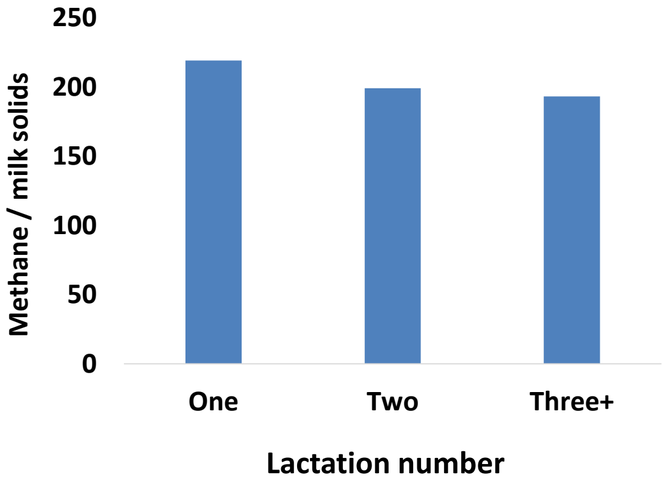


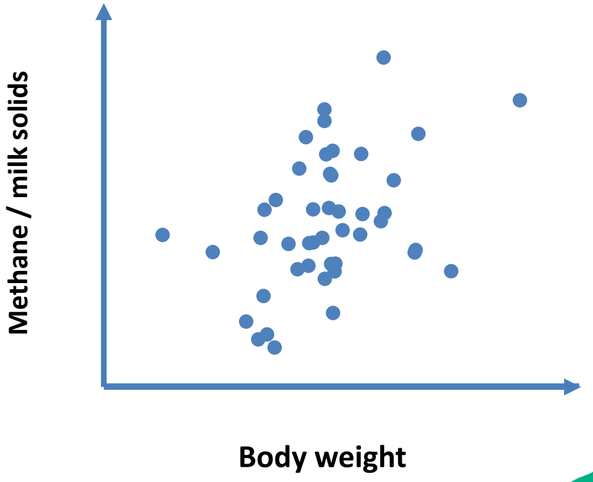
VistaMilk



EBI







VistaMilk

Environmental footprint of the Next Generation Herd

	Elite (€181)	NatAv (€80)
CO_2-eq, tonnes / ha	**16.2**	**16.3**

- **Lactating herd enteric CH_4: 50.6%**
- **Replacements: 11.5%**
- **Other: 37.9%**

- **Lactating herd enteric CH_4 : 46.2%**
- **Replacements: 16.9%**
- **Other: 36.8%**

Journal of Dairy Science (*in press*)

Environmental footprint of the Next Generation Herd

	Elite (€181)	NatAv (€80)
CO_2-eq, tonnes / ha	**16.2**	**16.3**
FPCM, kg	**16879**	**15326**

Journal of Dairy Science (*in press*)

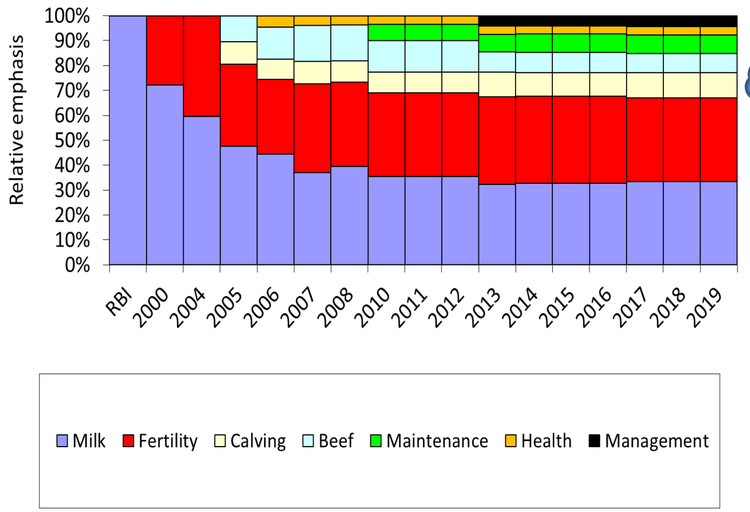
Environmental footprint of the Next Generation Herd

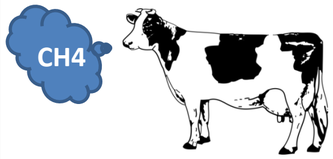
	Elite (€181)	NatAv (€80)
CO_2-eq, tonnes / ha	**16.2**	**16.3**
FPCM, kg	**16879**	**15326**
CO_2-eq, kg / kg FPCM	**0.96**	**1.06**

€10 increase in EBI = 1% less CO_2-eq kg / kg FPCM

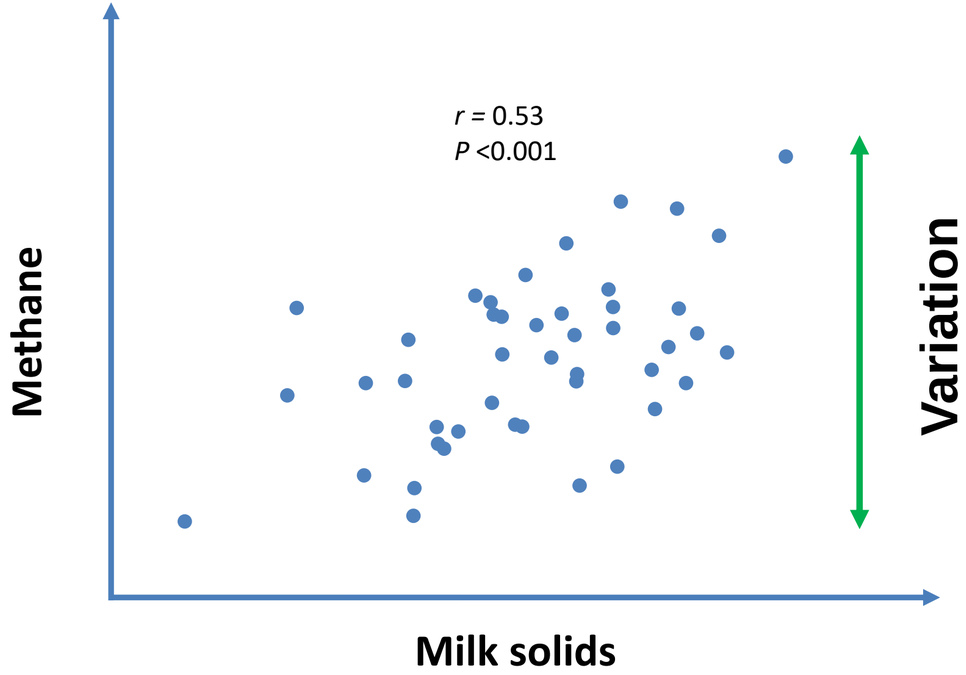
Journal of Dairy Science (*in press*)

Direct selection for methane?





Is it worth including ?



- Trait definition: gross methane, methane per unit output or methane per unit of feed intake?

VistaMilk

Feed additives

PENN STATE NEWS

HOME | RESEARCH | ACADEMICS | IMPACT | CAMPUS LIFE | ATHLETICS | ADMINISTRATION | ARTS AND ENTERTAINMENT

Seaweed feed additive cuts livestock methane but poses questions

- Up to 80% reduction and no effect on milk yield when fed up to 0.5% of DMI
- Questions raised:
  - Is it effective long term? Adaptation?
  - Stability of active ingredients?
  - Palatability?

DSM: Dutch dairy cattle trial shows efficacy of methane reducing feed additive

By Jane Byrne

04-Feb-2021 - Last updated on 05-Feb-2021 at 09:26 GMT

RELATED TAGS: methane emissions

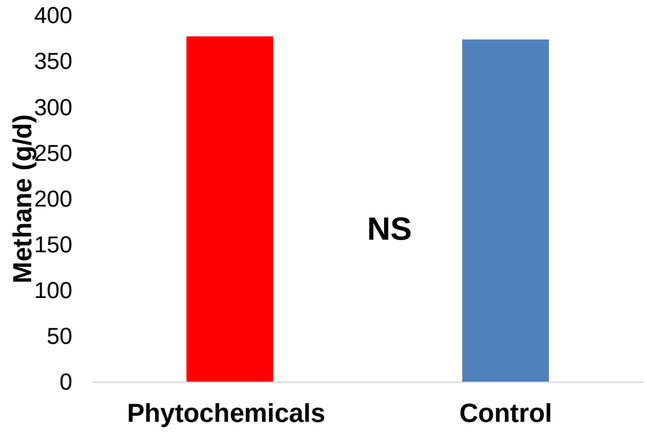
Feed additives

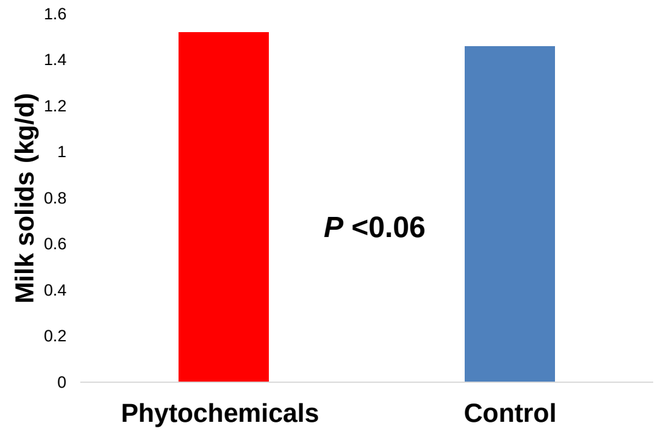
Study	Supplement	Average methane reduction
Vracken et al. (2019)	Garlic and citrus extract	30%
Moreno (2020)	3-NOP	26%
Belanche et al. (2020)	Essential oils	10%
Roque et al. (2019)	Seaweed extract	47%

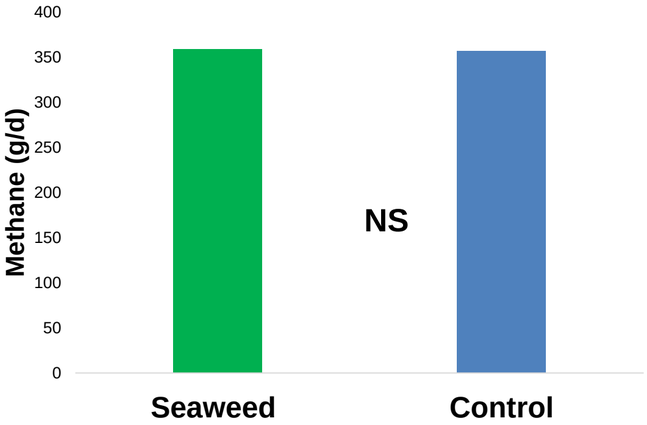
Additive experiments at pasture

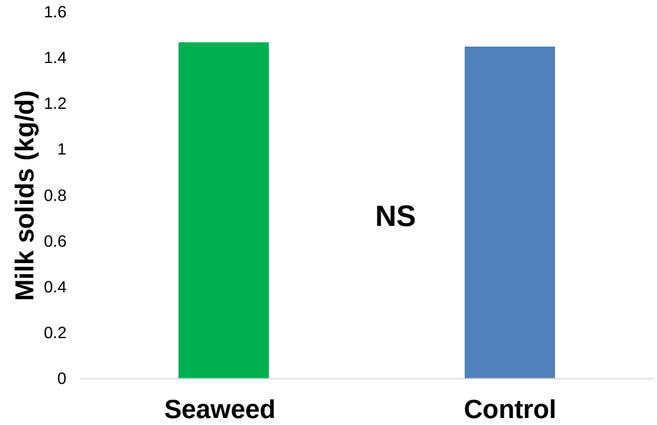
- Two studies were conducted in 2020 evaluating: 1) phytochemicals and 2) a blend of seaweeds on methane emissions and milk production in grazing dairy cows.

- Animals within each study randomly assigned to a treatment and control group. Methane emissions and milk production recorded daily.









Conclusion

- **Swards characteristics and methane need more research**
- **EBI breeding more efficient animals**
  - **Direct selection for methane may be required**
- **Virtually all additive research globally is in indoor systems**
  - **Focus on additives suitable for grazing systems needed**

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