

Livestock

What we learnt?

Ruminant methane

- We have ...

some techniques for measuring methane production from ruminants, and **approaches** for reducing methane emission from ruminants.

- There are ...

equations for estimating methane emission from ruminants and **some approaches** including plant secondary metabolites (saponins, tannins, essential oil, etc.) are applied in ruminants production.

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Research Gaps

- We have ...

techniques for measuring methane production from ruminants and **approaches** for reducing methane emission from ruminants. But they **are not common**.

- There are ...

1) **equations** for estimating methane emission from ruminants in **Japan** and **Thailand**, and 2) **problems** to disseminate methane-reducing approaches to farms, 3) **Life cycle assessment** to be developed, 4) no methods for controlling rumen methanogens.

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Research Challenges

●There are ...

Research Challenges to elaborate **refined equations** for estimating methane emission from ruminants in **the Monsoon Asia**, and to provide support for **disseminating approaches** in terms of not only methane reduction but also **improvement of ruminants productivity at various level (rural area, countries etc.)**.

●We need ...

Collaboration with other countries and institutes to collect data for estimating accurate methane production.

Improved system for ruminants production including social systems.

GHG measurement to cover animal diversity species eg buffalos and grazing systems

