

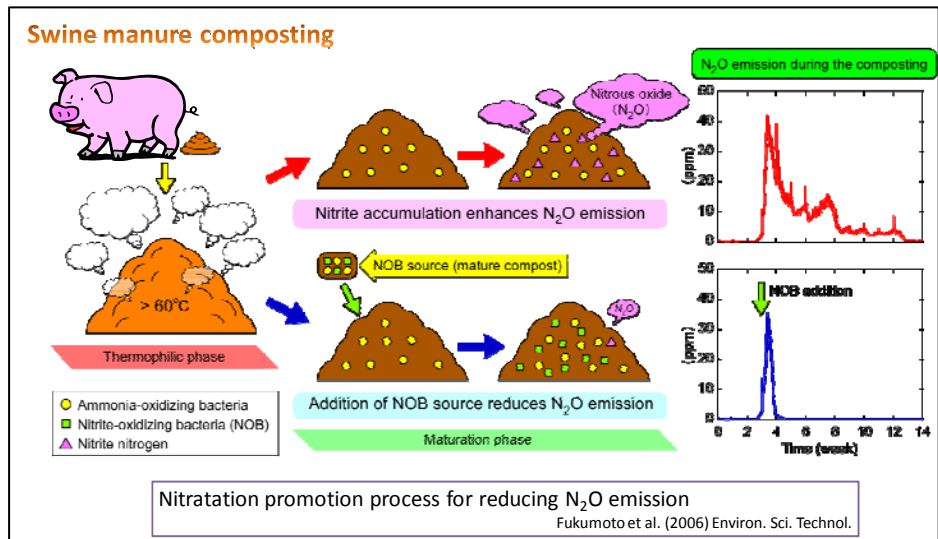
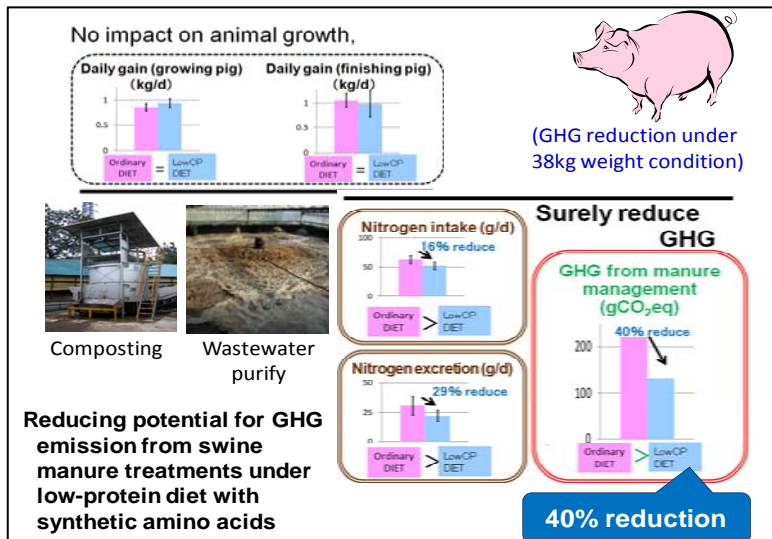
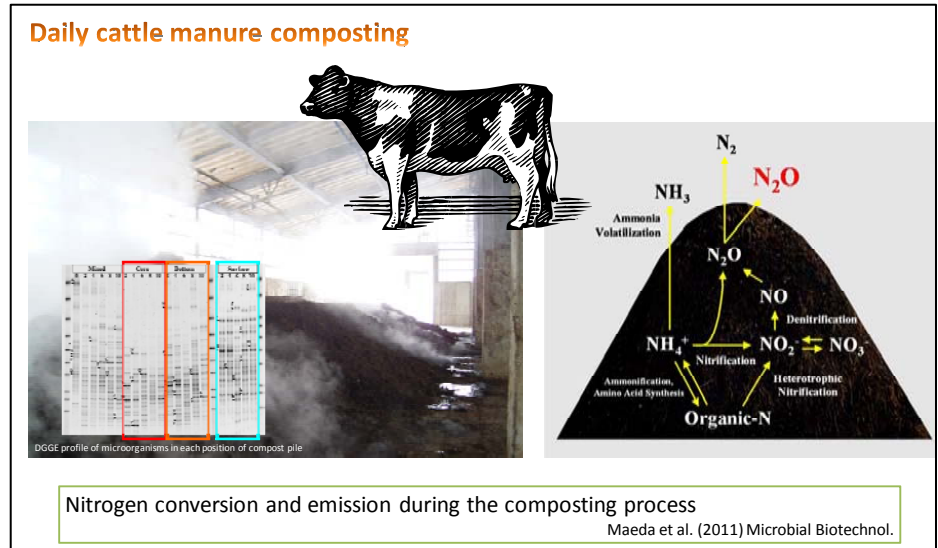
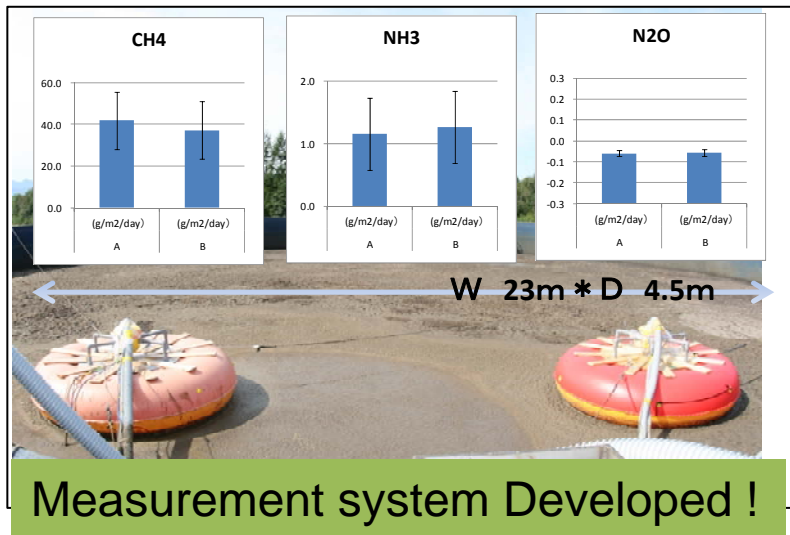
Livestock

What we learnt?

- The emission factor should be evaluated under each facilities procedure and environmental conditions, because might be widely varied. (Importance of actual measuring)
- Dairy manure composting: $\text{NO}_x\text{-N}$ accumulation in the pile surface and the denitrification which occurs just after the pile turnings are the main source of N_2O emission.
- Swine manure composting : Nitrataion (oxidizing nitrite into nitrate) promotion process can reduce N_2O emission induced by the prolonged nitrite accumulation (NOB Add.).
- We have learnt Feeding of Low-protein diet supplemented with amino acids reduces GHG emissions from swine manure management by 40%.

Livestock

What we learnt?



Livestock

Research Gaps

- Developed measurement procedure are reliable ,but need several days measurement and expensive.
- Dairy manure composting: the mechanisms of N₂O mitigation effect by mixing of bulking agents
- Swine manure composting:
Insufficient compost trial of demonstration in a farm facility (influence of foot-and-mouth disease, etc.)
- GHG reduction in cattle and poultry manure management, and verification of net GHG reduction from life-cycle perspective.

Livestock

Research Challenges

- For individual farmer, do measure actual emission more and learn the fluctuation factors, and development of cost effective measurement equipment.
- Dairy manure composting: Control the nitrification in the surface and enhance the N₂O reduction after the turnings.
- Swine manure composting:
Installation of the actual scale composting test system for swine manure composting in NILGS Tsukuba
- Developing low-protein-diet technique for cattle and poultry, and LCA of the technique