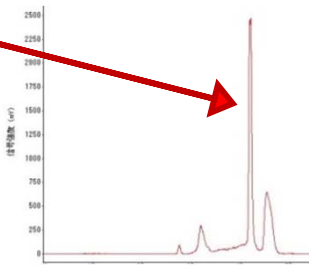
Laboratory for Bioresources

Many kinds of microbes exist anywhere around us, although we cannot see them. Some of them cause diseases and food poisoning and others are indispensable for producing pharmaceuticals, as well as for food production such as yogurt and pickles (known as "fermented food"). In addition, numbers of microbes inhabit the stomach and large intestine of animals including human, which play important roles in their health.

Our central research focuses are on these functional microbes for better animal production and on aiming wide range of biological resources on feed utilization at contribution to resource-recyclable society.



Detecting and measuring who, how many, and why are the microbes ?

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(2012~)
Keywords:
*Intestinal microbial fermentation
*Food byproduct for feed
*Probiotics and prebiotics for animal production

***Research theme*:**

A. Feed use of untapped food resources and food byproducts for constructing an energy cycle system

B. Exploring new function of microbes inhabiting animal digestive tract

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Billions of cattle in the world need food that is Healthy, Delicious, and Superb!

Division of Animal Science

Summary

Our mission: ***"Increasing animal productivity by rejuvenating internal microorganisms"***

•Object 1 _> Elucidation of the symbiotic relationship between animals and the microbes
•Object 2 _> Construction of a recycling-based, sustainable society thorough the implementation of the further use of residual substances by leveraging functional microbes

There are many kinds of microbes existing anywhere around us, although we cannot see them. Some of them cause diseases and food poisoning and others are indispensable for producing pharmaceuticals, as well as for food production such as yogurt and pickles (known as "fermented food"). In addition, numbers of microbes inhabit the stomach and large intestine of animals including human, which play important roles in their health.

In the BioResources Research (BRR) laboratory, we research central focusing on these functional microbes and even on wide range of creatures as biological resources to pursue their potentiality deeply, and apply their unlimited abilities so as to contribute to establishment the harmonious recycling-based society.

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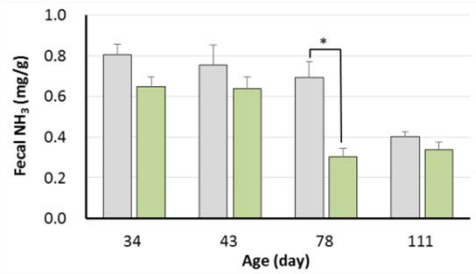
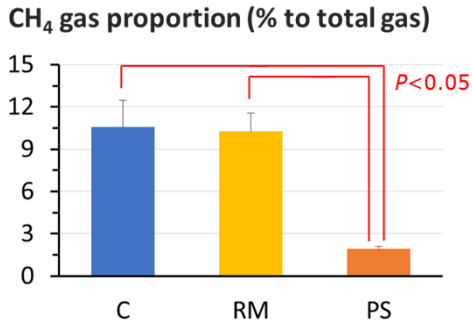
Research Topics:

A. Feed use of untapped food resources and food byproducts for constructing an energy cycle system

Feed use of untapped, residual substance in food manufacture or food waste is an effective means of completion of resource recycling and has been investigated for the implementation. We are therefore targeting at developing techniques enable to convert materials of food origin suitable to feed which is both palatable and nutritious, by a combination of microbiological and molecular biological elucidation of nutritional absorption systems in the animals.





B. Exploring new function of microbes inhabiting animal digestive tract

It is well known that various and numerous microbes inhabit animal's tract (the rumen and lower gut), and some of which has shown the ability for ill-defined but certain health merits for the host. The goal is to build up such microbial potential for a technique that can be applied in vivo or in an industrial use, starting with revealing the nature of which intestinal microbes depict.