



FEED



PROBIOTIC

PRODUCT FEATURES

- ▶ Additive contains probiotic double-coated using agricultural wastes suitable for animal feed.
- ▶ Fibers from agricultural waste protect probiotics from direct heat by creating a physical barrier until it reaches the target compound.
- ▶ Prototype proven on a laboratory scale - Major impact on farmers in improving the quality of their livestock.

NEEDS

- ▶ Probiotic feed normally is being applied in raw form.
- ▶ Heat from storage or pelleting process decreases viability and effective activity of the probiotics.
- ▶ New technology is necessary to overcome this problem.

APPROACH

- ▶ The innovation of encapsulation technique to enhance thermotolerance of the microbes.
- ▶ Provides double protection effect to the probiotic from direct heating.
- ▶ Convenient for farmers and relevant agro-industries applications.

BENEFITS PER COST

- ▶ Prolongs shelf life - up to 90% viability.
- ▶ Improve productivity, health & quality of ruminant.
 - ▶ Increased weight of the animal ($\pm 5\%$).
 - ▶ Increased yield of milk from cow ($\pm 20\%$).
 - ▶ Shorten the harvest time of aquaculture products ($\pm 25\%$).
- ▶ Reduce management cost :
 - ▶ Low storage cost (< 5%).
 - ▶ Less usage of medicine/antibiotic (<5%).
 - ▶ Reduce possibility of disease (<10%).

COMPETITORS

- ▶ Existing feed additives manufacturers.
- ▶ Protein and chemical manufacturers.



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