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**Philippine Local Forages as Sustainable Feed Alternative for Dairy Cattle**

**GRANTEE:** University of the Philippines Los Baños Foundation, Inc. (UPLBFI)

**PRINCIPAL INVESTIGATOR:** Prof. Menandro Loresco

**INDUSTRY PARTNER:** Benacorn Corporation

**COLLABORATING PARTNER:** Philippine Asian Biotechnology Research and Development Corporation (PABRDC), Batangas State University (BatSU), De La Salle University (DLSU)-Lipa, University of Georgia (UG), and University of Illinois (UI)

**GRANT PERIOD:** September 1, 2016 to November 30, 2017

**GRANT AMOUNT:** Php 6,147,385 (approximately USD130,795)

**Improved food for dairy cattle**

The Philippines produces only 1% of its total milk supply; the rest is imported. One reason for this is the common practice of feeding dairy cows via the cut-and-carry method, where grasses are planted in a separate lot and harvested daily to feed the dairy cows. The source of planting materials is one of the major problems of dairy farmers. In native cattle raising, indigenous forage is sufficient to nourish the small-frame native animals. However, for commercial dairy cattle, additional



*The research team works in profiling the six-select forage species*

nourishment is needed to maximize productivity. For instance, current dairy production of Benacorn Corporation is only 12 liters per cow per day, but there is a potential to increase this to 15 liters with improved diet. Since cows consume 60–80% plant materials in their diet, improving the quality of plant feed or forage may significantly improve the productivity of commercial dairy cattle in the Philippines.

To support the Philippine dairy industry in increasing milk production, UPLB, with support from USAID STRIDE, promotes the total mixed ration- (TMR-) based feeding system in dairy farming. TMR is the process of blending feed ingredients and forage such as napier, hybrid napier, jarra, guinea, signal, and stylo grasses, used worldwide to feed dairy cattle. The TMR technology is known to significantly improve milk production. Commercially available TMR sold by Benacorn Corporation uses imported materials; hence, it is very expensive even for industry-scale cattle farms.



*Benacorn farmers plant Napier grass*

Nutrition provided to milking cows greatly affects milk production as well as milk quality. With the downward trend in supply and quality of available roughage in the Philippines, there is a continuous effort to introduce new species of forage that would meet the demand of the country's growing dairy industry. Thus, good quality forage species should also be made accessible to local farmers for proper nutrition of dairy cattle, which translates to high milk volume.

The project is expected to achieve the following:

- Propagated and assessed the growth performance of six select forages;
- Established the nutrient profile of the six-select forage species;
- Formulated and validated a local TMR for dairy cattle in the Philippines; and
- Trained dairy farmers in forage production and management.

In the course of project implementation, elite planting materials will be provided to selected dairy farmers and collaborators for pasture development. An alternative TMR diet using local forage will also be recommended because these are economically sound alternatives to the commercially available TMR that uses expensive corn silage and imported legume hay. The local TMR diet may also increase milk production. As a result, dairy farming can become more widespread due to greater access of quality forages.

To date, collaboration with Benacorn Corporation, Philippine Asian Biotechnology Research and Development Corporation, BatSU, DLSU–Lipa, UG, and UI, has already been formalized.