

## RESEARCH RESULTS ON FEEDSTUFFS FOR CATTLE PRODUCTION

In the transition between crop and animal production in agriculture, the cattle population was increasing rapidly from 4.1 millions in year 2000 to more than 5.5 millions in year 2005, in which more than 100 thousands dairy cows. The rapid increasing of cattle population leads to the huge demand of feeds, especially the green fodders.

In recent years, the Institute of Agricultural Sciences for Southern Vietnam (IAS) has focused on researches for establishing different solutions for feedstuffs in cattle production with the contents and results as follow:

- Analyzed the chemical composition and nutritive value of different types of feedstuffs for cattle. Results showed that the quality of feed resources for animals was poor because of a high fiber and low protein contents, which leads to some difficulties in balancing the ration. These results are the background for implementing the continuing researches to find out solutions in order to improve the nutritious value of feeds, thus meet the demand of high productive animals.

- Researched to find out the grass varieties, which suitable with the different ecological conditions and cultivation systems, for cattle production. Many researches have been implemented in the Ruminant Research and Training Centre and in other farms. Results showed that *Penisetum purpureum* (Madagascar and Florida), *Panicum maximum* (TD

58), *Guinea Hamill*, *Panicum maximum* (K. 280) and *Brachiaria Ruziziniensis* were grasses that have high yield. Others researches with *Stylo Ciat 184* and mixed grass from Australia were also implemented.



Farage production with yield of 300T/ha/year

A project carried out in Ben Tre province showed that *Panicum maximum* was suitable for the intercropping in fruit fields and monocropping on cultivable sandy soil fields. This result opened a new farming system which is suitable for many different regions in Mekong River Delta.

- Another field in research of fodder for cattle is the pasture for grazing. The area for grazing, the amount of grass that the cow can obtain from an area and grazing circle were determined. The grass varieties that suitable for grazing were *Brachiaria Ruziziniensis* and *Decumbens*. This helps the farmers in calculating the total area which is needed for cattle grazing in extensive or semi-intensive systems.

- Although there were several results of researches on finding out grass varieties, there is still a shortage of land for grass plantation, thus, many researches were focused on using agro-industrial by-products as a resource of feedstuff for cattle. The procedures of 4% urea rice straw treatment, cashew apple with 10% dried rice straw or 10% dried cassava peel silages, pineapple

waste with 15% dried rice straw and 0.1% bio-yeast silage, peanut stem with 5% molasses and 1% salt silage, urea molasses multinutrient block production, mineral lick block production, cattle fattening feed production, using dried cassava leaves as a source of protein for dairy cows fed with mainly rice straw were studied and completed.

- In dairy production, researches on using agro-industrial by-products and balancing the rations based on by-products, were focused. The common by-products were brewer's residue, soybean waste and cassava waste, which were balanced in the rations to meet the nutritive demand of dairy cows. Establish and simplify the method for formulating the ration, thus it can be used by the farmers. The formulas for mixed feed for dairy cows were researched and transferred to feed factories.



Cassava chips as by-product used for cattle feeding

- In order to reduce drug resistance and to minimize antibiotic residue in meat and milk products, a herbal nutrition block was produced with pineapple leaves to control the internal parasites for cattle. This is a cheap method and suitable for the development of a sustainable and organic agriculture.

- With the development of biotechnology application, the utilization of bio-products in the ration for dairy cattle was concerned. Results showed that it is capable to use cheap by-products such as cassava waste, molasses, bran to produce bio-supplements with high concentration of enzymes, proteins and vitamins for heifers and milking cows.

- Besides application researches, some basic researches were implemented, including the determination of dairy rumen fluid indices, blood indices while the cows were fed with different rations. These results are the foundation for the cattle ration experiments in the future.

In the integration period, animal husbandry in general and cattle production especially, has opportunities and challenges. The



Grass grown under longan trees

development of high productive breeds to meet the demand of customers brings on a strict require of feedstuff for cattle. Thus, it is essential to continue researches for a better utilization of local feedstuff resources with the high technologies but cheap and applicable is the aim of research in this field. It is hope that, with a development of crop production, cattle husbandry will continue to considerably develop based on abundant local feed resources and researches of IAS.



Cassava leaves as by-product used for cattle feeding