One of the major limitations for improvement of dairy under coconut is the poor quality of available natural grasses under coconut and the fluctuating feed supply due to bi-modal rainfall pattern. Feeding concentrates has become unprofitable due to the low farm gate price of milk in comparison to the cost of production. Therefore, emphasis should be given for low cost feeding systems with locally available feeds. The value of Gliricidia as an animal feed is important in the effort to develop low cost feeding systems.

Gliricidia sepium, commonly known as Wetahiriya or Ginisiriya is a deep rooting medium sized multipurpose perennial which has the ability to fix atmospheric nitrogen, tolerate shade, and withstand repeated pruning. Gliricidia is well adapted to adverse conditions and grow well in wet as well as dry areas of the coconut triangle. It can also tolerate prolonged dry conditions and can withstand low fertile acidic and lateritic soils. Leaves, tender stems and bark of Gliricidia are consumed by ruminants. As a result 77% of the biomass is edible leaving only 23% matured stem inedible by ruminants. Gliricidia is such a useful source of feed, which can be effectively used to enhance the quality of the ration of farm animals. In order to discuss the possible ways of incorporating the quality of the manipulating low quality feeds with Gliricidia, it is important to have a clear idea about the digestion of fibrous feed in ruminant.

Digestion of fibrous feeds in ruminants

The digestion of fibrous feeds take place in the fore-stomach of the ruminants aided by microbes inhabiting the rumen. Thus the ruminants are able to convert roughage materials such as grass,
leaves of tree fodder into invaluable final products such as meat and milk with the help of microbes. Efficiency of digestion in the rumen depends on the level of activity of the microbes. The feed consumed therefore has to be nutrient rich for microbial growth. One of the factors that influence microbial activity in the rumen is rumen ammonia nitrogen concentration. When the animal eats more of poor quality feeds low in rumen degradable protein, rumen nitrogen concentration goes down and slows down the digestion making feeds remain for longer periods in the rumen. But, if feeds of poor quality can be supplemented with feedstuff rich in protein enhance the efficient the changes efficiency of digestion. Gliricidia is high quality forage, which meet the above requirement.

Nutritive value of Gliricidia

Gliricidia has been identified as an excellent quality forage in many tropical countries due to its' nutritive value and chemical composition. Important characteristic of Gliricidia is the higher content of crude protein (20-25%) that readily digests in the rumen. Gliricidia supplements the protein requirement of ruminants to a great extent. Further it is a good substitute for expensive protein supplements such as coconut meal, Soya bean meal etc. Dry matter and other nutrient digestibilities are higher in Gliricidia compared to other common tree fodders. But many farmers believe that feeding of Gliricidia results in "thin milk" or "watery milk". Thick or thinness of milk is decided by the amount of total solid in the milk, which depends on non-fat solubles such as lactose and casine. But according to research evidence, feeding of Gliricidia 0-100% in the ration of cattle does not alter the amount of butter fat or solid non-fat in milk.

Gliricidia is low in sapponin and doesn't cause bloat in animals even an excessive amounts are fed. Research have shown that feeding of Gliricidia in higher proportion in the diet even at 100% show no toxic effects. But there is evidence that inclusion of Gliricidia more than 50% in the ration results in "tainted" milk and therefore adding Gliricidia up to 50% is safe and cause no adverse effects.

Enhancing quality of ration with supplementation of Gliricidia

- Paddy straw (Preferably chopped) mixed with Gliricidia in 2:1 ratio on weight basis increases the feed intake forming a good dry season feed.
- Mixing 4 % urea treated straw (e.g. dissolve 40g of urea in one liter of water) with Gliricidia lopping at the ratio of 3:1 on weight basis, is another good dry season feed.
- Gliricidia foliage either mixed with Brachiria millingformis / B. brizantha or natural grasses at the ratio of 1:1 (on weight basis) also enhances quality of the ration and increases the feed intake.

Establishment of Gliricidia in coconut lands

Coconut Research Institute has demonstrated the value of Gliricidia as an animal feed and how Gliricidia can be established in coconut lands without having adverse effect on coconut. Gliricidia can be planted in between coconut in double rows at the
spacing of 2m x 1m (2500 ha\(^1\)) as a fodder bank and along the fences. For smallholdings it can be planted along the fences in 1m apart. It can be established from seedlings or cuttings. In intermediate and dry zones *Glicidium* is preferably establish from seedlings planted in polythene bags after collecting seed. Planting should be commenced with the on set of rain and initial pruning should start at 1-1.5 m height. On an average 5-6 kg of leaf biomass (on fresh basis) could be obtained per plant per year. The study carried out in the Pannala AGA division revealed that planting *Glicidium* in the fences of individual land holdings, 2m apart, and by using them as animal feed the milk production can be increased by 50%.

**DIKIRI POL FOR YOUR LAND**

Dikiri pol is one of the special varieties of coconut found in Sri Lanka. The nuts are generally heavy. When tapped on the nut, dikiri gives a low dull thud. The kernel of the dikiri nut is thicker than that of a normal nut. It is soft and is a jelly like mass, filling almost the entire cavity of the nut. The kernel is suitable for production of various sweets. The nut water is thick and is an oily substance. Due to its special characteristics and scarcity, dikiri nuts are expensive.

Dikiri is mainly found in the Southern Province of the island especially in the Denipitiya and Weligama areas. The production is limited to 1-2 dikiri nuts per bunch per palm. Furthermore, under natural condition dikiri nuts do not germinate. Hence, propagation of dikiri is difficult.

Therefore, Coconut Research Institute has launched a programme for a mass-production of dikiri plants using the embryo culture technology. The plants will be ready for distribution in 1-2 years. However, a few dikiri seedlings have already been sold at a cost of Rs. 125.00 per seedling. Further information can be obtained from Director, Coconut Research Institute, Lunuwila.