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The availability of feeds for livestock: Competition with human consumption in present world

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Rising costs of grain for food and feed and the increasing demand for animal protein have intensified the debate on the use of food-grain for the production of high value animal protein. Demand for feed concentrates, particularly pronounced in developing countries, has been growing steadily over the past decades largely driven by the increasing demand for meat and milk products. Presently, the livestock sector uses about 740 million tonnes of cereals, representing about one-third of the global cereal harvest. The transition from land-based extensive ruminant systems to large-scale industrial non-ruminant systems that rely on concentrate feed has been enabled by a surplus of grain as a consequence of improvements in crop productivity, resulting into low global cereal prices. Recent price spikes have not altered this picture fundamentally, even though many observers expect higher and more volatile cereal prices in future.

The last two decades have however witnessed a slow down in the demand growth for feed by the livestock sector. Between the period 1980 and 2007, while meat production increased at a rate of 2.7% per annum, concentrate feed demand grew at about 1.3% per annum.

The food-feed competition has occurred through an adjustment of prices driven by a decline in output or surge in demand for livestock products. The competition for grain has largely been based on the changes in dietary patterns which have occurred along with income growth. As per capita income changes, populations tend to change their diets to include more animal-based products. Increased demand for animal protein indirectly increases demand for grain driving grain prices higher. Increases in grain prices may affect the poor consumers whose diets are made up of a larger proportion of grains compared to diets of an expanding urban middle-class. Closely linked with demand for animal feed is the displacement of production of crops with that of feed-crops – a trend particularly predominate in Latin America.

Another dimension of the competition for grains is the linkage between the food-feed markets during periods of shortfall. The livestock sector plays a crucial 'cushioning' role by adjusting to changes in supply and hence maintaining food consumption in the case of supply shortfalls. As demonstrated in the recent food crisis 2006–2008, during occasional supply shortfalls, the sector's has played an important role in adjusting its demand manifested through the reduction in feed-grain demand releasing grain supply for direct use as food or replacement of grain with other alternative feedstuffs.

Recent trends have however added a new facet to the food-feed competition. Today, forces external to grain markets and the sphere of the dynamics of changing consumption patterns such as rising oil prices and the diversion of grain to bio-energy production are increasingly playing a key role in shaping the food-feed competition. A key question for the global food and agriculture system is therefore how the continued demand for animal source foods can be accommodated in a world with finite land, water and other natural resources.

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Nutritional and energy values of tropical foliages in pigs

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Introduction

In tropical areas, a rational exploitation of local breeds and local feed resources would increase the sustainability of production systems. In the context of livestock production from local resources in an integrated farming system, tropical foliages could be an interesting source of protein (Bui Huy Nhu *et al.*, 2000; Preston and Rodriguez, 2004). However, additional knowledge is required to determine how these local feed resources are used by animals. This work aimed to determine the nutritive and energy value of four tropical foliages (cassava, sweet potatoes, erythrina and cocoyam) in the local Caribbean pig breed (Créole pig).

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