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 Street, Wellesley Hills, MA 02181 (Agronomy, mechanical  
 harvesting, economics & development - the firm has a  
 project in Brazil)  
 The Engineering Experiment Station at the Georgia Institute  
 of Technology is working on the development of improved  
 cassava grating equipment.

## UTILIZATION OF CASSAVA FOR ANIMAL FEEDING

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Studies on the perspectives of increased cassava production resulting from the expansion of the area under cultivation and especially from the application of improved technology for increasing surface unit yields clearly indicate that the most important potential market for cassava consumption at the world level in general (4) and particularly in Latin America (2) is for animal feed. The continual expansion of urban centers creates a growing demand for animal production that cannot be met at present with the normal production of inputs for feedstuffs, especially the cereal grains and their by-products. This situation is reflected in the continuous increase in grain imports in the majority of tropical Latin American countries, especially during the last decade.

FAO (1) estimated that 38% of the total cassava production in Latin America is utilized for human food, 26% for animal feed, 16% for industrial purposes and 20% is waste material. It is possible that these statistics are inaccurate with regard to the percentage used for animal feed at the producer level since most of the cassava is produced on small farms and the percentage corresponding to waste is probably incorporated in the feed.

The tremendous potential of both the roots and foliage was demonstrated at the workshop on Cassava as Animal Feed (3), held at the University of Guelph in Canada, which reviewed a great part of the existent knowledge on the use of cassava roots as the principal energetic source in rations for poultry, swine and ruminants.

During the last few years the Swine Program at CIAT has been conducting research on different aspects of cassava utilization in

life-cycle swine feeding, based on fresh and ensiled roots, meal, the by-products of starch extraction and leaf meal. In addition, the use of cassava as a substrate for single-cell protein production is being studied on the pilot plant scale in collaboration with the University of Guelph.

The determining factor in the use of cassava for feedstuffs is its price in relation to other energy sources, principally the cereal grains. In Latin America in general and particularly in Colombia, the price of cassava is relatively high to be considered economically feasible for use in animal feeding. There are, nevertheless, notable differences in market prices from one region of a country to another; however, information in this respect is limited (2).

On the other hand, results obtained in regional trials conducted by CIAT have shown that it is feasible to increase yields significantly at a low cost by applying improved technology with a minimum of inputs. It is foreseen that by extending the application of CIAT-generated technology, the possibilities of lowering cassava prices are great, thereby increasing the feasibility of using the roots for other purposes. In order to ensure adequate use of this increased potential, the Cassava Program hopes to increase research activities as of 1980 on aspects of processing and utilization including the development of simple storage and drying processes; methods of using the roots, by-products and leaves for poultry, ruminants and swine; and cassava forage production technology.

In order to obtain basic information on the present and future potential of cassava as animal feed, we would greatly appreciate your giving us some of your time by answering the enclosed questionnaire, which should be returned to TRUDY BREKELBAUM, Editor - Cassava Information Center, CIAT, Apartado Aéreo 6713, CALI, COLOMBIA.

### Literature cited

1. FAO 1971. Food Balance Sheets 1964-66.
2. LYNAM, J.K. 1978. Options for Latin American countries in the development of integrated cassava production programs. Development Studies Centre Monograph no. 11. The Australian National University.
3. NESTEL, B. and GRAHAM, M., eds. Cassava as animal feed; proceedings of a workshop, University of Guelph, 18-20 April, 1977. IDRC-095e. 147p.
4. PHILLIPS, T.P. 1974. Cassava utilization and potential markets. IDRC-020e. 183p.

