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THE STATUS OF RTIP CASSAVA FLOUR PLANTS

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Abstract

One of the post-production technologies identified is the large-scale conversion of freshly-harvested cassava roots into high-quality flour. This activity is being undertaken through a number of related processing technologies at the cassava flour Pilot Plants. This paper discusses the status of operation of the four Pilot Plants at various locations in the country, the environmental issues pertaining to the Plants as well as proposed quality systems to be implemented at the Plants.

Introduction

The specific objective of RTIP which the Post-Production and Marketing (PPM) component seeks to achieve is to improve access of resource-poor farmers, farmer groups and rural communities, including women to improved post-production technologies. This is being pursued through (a) research involving sourcing and documentation of information on post-production technologies for root and tuber crops; (b) promotion of identified technologies by disseminating information through training of staff, potential users and beneficiary groups; and (c) adoption of post-production technologies through production and storage facilities. One of the post-production technologies identified is the large-scale conversion of freshly-harvested cassava roots into high-quality flour. This activity is being undertaken through a number of related processing technologies at the proposed cassava flour Pilot Plants.

Cassava flour production involves the peeling and washing of freshly-harvested cassava roots. The roots are then grated into a mash which is dewatered by pressing inside a clean bag. The pressed mash or cake is broken into fine granules and spread thinly on clean trays (or black polythene sheets) on a raised platform or solar dryer (to prevent contamination by dust, stones, etc.) and allowed to dry. When dry, the product is finely milled and sifted if necessary before packaging in polythene bags or any airtight

containers. It is important for the drying to be completed in one day so that the flour will be of good quality for baking. Production of cassava flour from harvesting of the cassava roots to final drying should ideally, not exceed 24 hours, so as to eliminate fermentation and the development of off-flavours.

In 2001, the construction of the Pilot Plants commenced at four locations: Adidwan (Ashanti Region), Amanase (Eastern Region), Gomoa Eshiem (Central Region), and Sokode-Gbogame (Volta Region). Two locations in the South Tongu and the Akatsi Districts have been identified for the sitting of additional Pilot Plants in the Volta Region. This report reviews the status of the Pilot Plants as at November, 2002.

The Pilot Plants: status and achievements

(a) Adidwan

The Adidwan Pilot Plant is ready to commence operations. The beneficiary group is the Adidwan Cooperative Food Farming and Marketing Society Limited with 35 active members including 14 females. RTIP has supplied a cassava grater, a screw press and diesel engine and these have been installed by the Rural Entreprises Project (REP) at Mampong. A solar dryer has also been constructed at the site. Some members of the PPM team have carried out a one-day intensive training of the beneficiary group in Good Manufacturing Practice and Plant Hygiene and a Resource person from the Food Research Institute has also trained the group on cassava flour production. The group will also like to engage in gari production and requested for the construction of improved stoves, and training in gari production will be carried out before the end of the year.

(b) Amanase

This Pilot Plant was established by RTIP in collaboration with the Village Infrastructure Project (VIP). The plant is operational and the beneficiary group has a history of gari processing. Equipment supplied by VIP to the group are a cassava grater, a cassava screw press and a diesel engine whilst RTIP has supplied a plate mill and constructed a solar dryer for drying cassava flour. The group has been trained in cassava flour production at the Plant by FRI.

The group has encountered frequent breakdown of the cassava grater and the press supplied by VIP. It is recommended that RTIP discuss the issue with VIP and the possibility of replacing these with a more robust grater and press.

(c) Gomoa Eshiem

Apart from a cassava grater and a press supplied to the group by RTIP which are yet to be installed, no other equipment has been supplied. The building is completed and it is expected that as soon as adequate funds are available, the other equipment for the completion of this Plant will be obtained for the group to start operation. Further, training programmes for the group on GMP and cassava flour production will be carried out at the Plant.

(d) Sokode-Gbogame

At Sokode Gbogame, the construction of the processing hall by the beneficiary group has been completed. The plant has been supplied with a grater and screw press and will be installed before the end of the year. Additional equipment to be supplied by RTIP are a diesel engine, plate mill and a solar dryer which are expected to be done before the end of the year, and training in GMP and cassava flour production carried out for the group.

Environmental concerns at the Pilot Plants

A certain level of environmental impact from the discharge of the starchy liquor from the cassava press is envisaged. As such, possible environmental concerns at the Pilot Plants are envisaged, and attempts are being made to address these. An assessment has been carried out using the Amanase Pilot Plant as a case study because of this Plant's peculiar location, that is, close to a rivulet. The possibility of contaminating the ground water is high and therefore any attempt to increase flour production level must take into account relocation of the press in particular.

The impact of solid wastes from Pilot Plants can become environmental hazards. For the Amanase Pilot Plant this hazard is currently minimal since the bulk of what is generated is fed to animals. It is expected that where this is not the case for other Pilot Plants, processing groups and other people in the community should find a suitable and common site for the disposal of their solid wastes. The use of solid wastes from Pilot Plants should

be encouraged e.g. use of cassava peels as animal feed and for growing mushrooms. Where necessary, the Environmental Protection Agency (EPA) and the Forestry Department should be contacted to supervise the planting of grasses and fast growing tree species such as cassia to stabilise the slope into the valley of the rivulet and enhance the environment as pertains to the Amanase Pilot Plant.

Environmental impact assessment and technical guidance on environmental concerns has also been carried out on the Pilot Plant at Adidwan by EPA. It is recommended that similar assessment and guidance be carried out at the two remaining Pilot Plants at Gomoa-Eshiem and Sokode-Gbogame before they become operational. In future, EPA should be consulted on all matters pertaining to the environment before the setting-up of any Pilot Plant or Processing Unit. Also, the quality of water in the vicinity of the Plant should be monitored periodically.

Quality systems at the Pilot Plants

Since all the Pilot Plants will soon become operational, it is important that the issue of the quality of their products especially the cassava flour be given the necessary attention. In this regard, FRI in collaboration with the Food and Drugs board and the Ghana Standards Board should implement the Hazard Analysis and Critical Control Point (HACCP) quality system at all the Pilot Plants in order to ensure that the quality of cassava flour produced is of the highest standard.