

A comparative study of tikhur traditional and partial mechanical processing and cost economics

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■ **ABSTRACT** : The edible rhizome rich in powder content is processed to obtain tikhur flour which is cooked in different forms and preparations and consumed in many parts of India. The traditional way of tikhur powder extraction or processing leads to a very high loss of powder along with huge time and labour requirement. In the developed partial mechanical method of processing, all the process is similar to that of traditional method except the size reduction of rhizomes and drying. By this method 300 to 400 kg of rhizomes could be handled in a day and it also saves Rs. 30per kg.

■ **KEY WORDS** : Tikhur, *Curcuma angustifolia*, Traditional processing, Mechanical processing

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Tikhur (*Curcuma angustifolia*) is a medicinal plant native to Central India, distributed in the West Bihar, North Bengal extending to Maharashtra and South India. It's has various synonyms such as Tavaksira (Sanskrit), East Indian Arrow Root, Bombay arrowroot, Tikhur in Hindi. Tikhur is commonly found in moist deciduous sal and mixed forest of Madhya Pradesh, Chhattisgarh and Jharkhand. Its rhizomes are good source of starch and fibre (Misra and Dixit, 1983). Over exploitation has made tikhur scarce in natural habitat and costly in the market. In traditional, propagation of tikhur powder occurs through rhizome, which is a slow process. The action of the rhizome is cooling, demulcent and nutritive, and the material is used in consumption, excessive thirst, jaundice, kidney disorder, fever and for vitality and fattening the body. The rhizomes are used in inflammation, bone fracture, intestinal diseases, etc. by the tribes of Madhya Pradesh and Chhattisgarh states of India (Ray *et al.*, 2011).

The fresh rhizomes of tikhur are used for the preparation of starchy flour, which has medicinal value and is effective for of many diseases. The powder obtained from the rhizomes is highly nutritious and easily digestible, therefore, it is recommended for infants, weak children and invalids. The tikhur powder can be consumed by individuals during fast as (Upwash) it is rich in energy. It is used for the preparation of many sweetmeats like halwa, barfi, jalebi etc. (Tiwari *et al.*, 2012). Processing of rhizomes through traditional method for tikhur powder extraction, farmers yield less tikhur powder due to unrefined extraction process. Therefore, a study was done

to improve the processing technique and worked out the cost economics of both practices.

■ METHODOLOGY

The study was conducted at Faculty of Agricultural Engineering, Raipur and S.G. College of Agriculture and Research Station, Jagdalpur, (IGKV) in 2011. In traditional practice, fresh rhizome bulbs were cut and washed thoroughly with running water and simultaneously peeled out. The peeled rhizomes were rubbed on a rough surface stone or sieve. The obtained paste was added with water in the ratio of 1:2 to make solution and passed through muslin cloth. Supernatant part of the solution remained on the cloth was thrown away as the waste. The filtered solution of tikhur powder was collected in an earthen pot. This solution was kept for about 4 to 6 hours to allow settling of the powder particles. Powder mass was settled down in earthen pot as sediment. The decanting of water was done initially after 6 hours. The process of decanting was repeated 8 times till the bitterness taste was not experienced.

In the mechanical method of processing, all the process was similar to that of traditional method except the size reduction of rhizomes by motorized wet grinder and drying of sediment particles by tray drying. All other steps were repeated as in case of traditional method.

The hourly cost of operation was calculated considering fixed and operational cost taking the unit purchase price,