Thai Traditional Alcoholic Beverage "Sato"

Werasit Sanpamongkolchai

Department of Biotechnology, Faculty of Agro-Industry, Kasetsart University, Bangkok 10903, Thailand

Thai Traditional Alcoholic Beverage "Sato"

Werasit Sanpamongkolchai

Department of Biotechnology, Faculty of Agro-Industry, Kasetsart University,
Bangkok 10903, Thailand

Ⅰ. Introduction

Thailand has many varieties of alcoholic beverage selling in the market. Some alcoholic beverages are producing by local manufactures such as beer, wine, rum and white liquor. Besides these, Thailand also import wine, whisky, brandy, cognac from foreign countries such as from Scotland, France, Spain etc.

"Sato" is a traditional alcoholic beverage of Thailand containing alcohol about 7～10%-(v/v). Main raw materials of Sato are glutinous rice, rice mold bran(Loogpang) and water.

Ⅱ. Rice Mold Bran(Loogpang)

Loogpang plays an important role for Sato production because the starter contains various kinds of micro-organism such as fungi, yeast and bacteria leading to alcohol fermentation and aroma. From Table 1 and 2, rice mold bran consists of many kinds of spices such as garlic, pepper etc. which will inhibit the growth of undesirable micro-organism. Moreover, these spices also provide unique aroma in Sato, too. Loogpang from each area has different type of micro-organism which will affect the quality of Sato.

Fig. 1. Loogpang(rice mold bran)

Table1. Composition of Loogpang

Composition	Quantity(gm)
Garlic(*Allium sativa*)	40
Ginger(*Zingiber officinale*)	40
Galingale(*Alpinia siamensis*)	20
Liquorice(*Myriopteron extensum*)	40
Pepper(*Piper nigrum*)	6
Long pepper(*Piper chaba*)	6
Shallot(*Allium ascalonicum*)	20
Rice(*Oryza sativa*)	2,500

Source : Chatisatienr(1977)

Table 2. Micro-organism found in Loogpang

Group	Micro-organisms
Fungi	*Aspergillus* *Mucor* *Rhizopus* *Amylomyces* *Penicillium*
Yeast	*Endomycopsis* *Saccharomyces* Film yeast
Bacteria	Lactic acid bacteria *Bacillus* Acetic acid bacteria

Source : Chaawnsungket (1978), Kanlayakrit (1989, 2004,2005)

Ⅲ. Production Process of Traditional Sato

Sato preparation is quite simple and easy. Therefore, Sato can be produced in household especially it is very popular in countryside area. The process of Sato making is described in Fig. 2.

Ⅳ. Microbiology and Biochemistry during Fermentation of Sato

After mixing steamed glutinous rice with rice mold bran(Loogpang), fungus will first grow rapidly and produce amylase enzyme. This enzyme will hydrolyze starch in glutinous rice into sugar(glucose). At this step, rice will become sweet and we can use this sweet rice as dessert. When the water is added into sweet rice, the water activity(a_w) is increased, at this condition yeast including bacteria will grow up and alcohol

fermentation including aroma occurred. Sato contains alcohol about 7～10%(v/v). Some aroma of Sato come from the spices using in rice mold bran which give unique aroma in Sato.

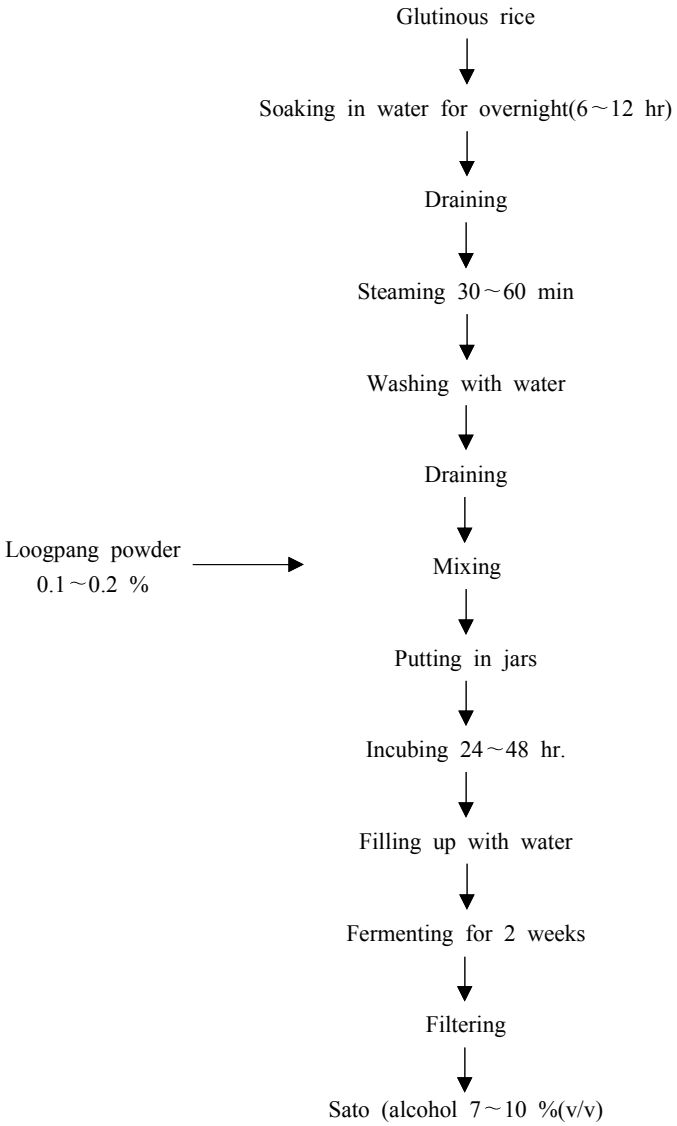

Fig. 2. Production process of traditional Sato

Ⅴ. References

1. Chaawnsungket M (1978) Selection of Yeast and Mold Strains for Rice Wine Production. Master Thesis. Faculty of Science. Kasetsart University.
2. Chatisatienr C (1977) Selection of Yeast and Mold Strains for Rice Wine Production. Master Thesis. Faculty of Science. Kasetsart University.
3. Kanlayakrit W, Nakahara K, Teramoto Y, Hayashida S (1989) Raw starch-digesting glucoamylase from *Amylomyces* sp. 4-2 isolated from Loogpang Kaomag in Thailand. *J Fac Agr Kyushu Univ* 33 : 177-187.

4. Kanlayakrit W, Booranasawettatham S (2004) Screening of Enzyme and Alcohol Producing Microorganisms from Thai Traditional Fermentation Starter(Lookpang) for Sato Industry. Proceeding of 42nd Kasetsart University Annual Conference. 3～6 February, Bangkok p. 409-416
5. Kanlayakrit W, Booranasawettatham S (2005) Identification of Yeasts and Molds Isolated from Thai Tradition Fermentation Starter(Lookpang) forSato Industry. *In* Proceeding of 43rd Katsetsart University Annual Conference. 1～4 February 2005. p. 419. Kasetsart University Bangkok.