

Isolation of yeasts from grapes for rice wine starter culture preparation

ABSTRACT

Rice wine is an alcoholic drink produced by fermentation of glutinous rice. It is a famous traditional drink in East Malaysia. The starter culture origins, which consisted of a yeast mixture determines the wine taste and alcohol content percentage. Most of the rice wine producers relied on the yeast starter culture sold in the market or from the leftover stock from the previous rice wine preparation which may not have proper quality control. Very often the content and composition of microbes in the yeast starter culture are unknown. Hence, rice wine produced is not consistent. Sometimes it is tasty and sweet, and sometimes it is sour, and this can be an issue if one wishes to market it as a product. Therefore, there is a need to formulate good quality yeast starter cultures to address the issues of product consistency and product quality. There is a long history of using grape yeasts to ferment grapes for wine production. Nevertheless, information on the fermentation of glutinous rice or starch using grape yeasts is sparse. Hence, the objectives of this project were to isolate yeast present during the grape must spontaneous fermentation, for the formulation of starter cultures. Different types of growth medium such as Yeast Potato Dextrose (YPD) and potato dextrose agar media were used to isolate the yeast. Fifteen yeast isolates, GY1 to GY15 were successfully isolated and purified. The fifteen isolates were combined and freeze-dried to form the starter culture for batch fermentation of glutinous rice. The colony-forming units (cfu) of the starter culture were 1×10^5 which formed a good starter culture.