

Degradation of Coffee Polysaccharides by *Trichoderma Viride* No. 8 Isolated from Soil

H. KUMORI¹, Y. NAKABAYASHI¹, S. MORI¹, T. FUJITA²

¹Central Research Laboratory, UCC Ueshima Coffee Co., Ltd., Zushi, Takatsuki 569, Japan

²Department of Agricultural Chemistry, Kinki University, Nakamachi, Nara 631, Japan

SUMMARY

The soluble solid in roasted coffee which is extracted by hot water consists of about 30 to 40%, and the insoluble consists of about 50% polysaccharides, mostly cellulose, mannan and arabinogalactan.

We have already isolated *Trichoderma viride* No.8 from soil, which degraded grounds coffee. In this study, we reported the cultural conditions for degrading of the green coffee, the roasted coffee and the grounds coffee by *T.viride* No.8, and coffee-degrading products by cultivation. Green coffee, roasted coffee and grounds coffee were boiling with 1%-NaOH for 5 hours, and ground to particle size 1 to 2 mm respectively. Cultural conditions, 4.5g of this treated coffee added into 55ml of a liquid medium, and then cultivated at 28°C with reciprocal shaking (120 strokes/min, 5 cm span). After cultivation for several days, coffee-degrading rate was calculated on measuring each weight of coffee (on the opening of 0.85 mm mesh) at dry condition, and reducing sugar in medium was measured by Somogyi-Nelson method. During 7 days cultivation, each coffee-degrading rate of the green coffee (origin: Uganda), the roasted coffee (origin: Uganda) and the grounds coffee was about 90%. Concentration of reducing sugar in medium was increased, and this saccharides consists of almost mannose, glucose cellobiose.