CHAPTER V

CONCLUSIONS

1. C. utilis 5001 has been proved a suitable yeast for the cultivation on glucose. The theoretical biomass yield of 97 % or a biomass of 0.495 g/g glucose has been achieved. After 24 h of cultivation, 300-400 million cell per ml (4.53 g/l) was obtained in the broth.

2. E. fibuligera 5097 has been proved also as a suitable yeast or cultivation on yeast starch medium. A biomass yield 0.473 g/g glucose and theoretical biomass yield of 92.7 % has been achieved. The culture contained about 400-450 million cell per ml (4.57 g/l) in yeast starch medium, after 40 h of cultivation.

3. The use of C. utilis and E. fibuligera with a varying volume ratio of 1:1, 1:2, 1:3 and 1:4 showed no difference in the growth of the mixed cultivation.

4. The suitable time for introduce C. utilis into the mixed culture is 18 h after E. fibuligera has been added into the culture.

5. Molasses has been used as a source of vitamins for the growth of mixed culture. The suitable ratio of molasses to broth in between 0.8 % to 1.1 % (w/v).

6. For protein production rate it may be concluded that the suitable glucose concentration is between 2~4 g/l and starch concentration 20-25 g/l.

7. SCP production by mixed culture of C. utilis and E. fibuligera on a 60-litter fermenter has shown that the total biomass protein obtained is between 4.50 ~ 4.60 g/l.

The selected operating conditions are as follows :

- working volume 45 litter
- agitation speed 140 rpm
  (Reynolds number 25130)
- flow rate of air 8 l/min.
- concentration of cassava 35 g/l
- molasses 8.75 g/l
- temperature 30^0 C
- pH 5.5
- other nutrients are added (see medium M19 in Table 3.3)