

## CHAPTER V

## CONCLUSIONS

On the basis of laboratory results in this study, the following conclusions may be drawn.

1. Dairy wastes from the investigated plant were highly variable both in quantity and quality from hour to hour and from day to day. The wastes were discharged without treatment.
2. The relationship between  $BOD_5/COD$  ratio has obtained the mean value of 0.667.
3. The organic removal rate,  $m$  by assimilation varied from 0.430 to 0.438.
4. The logarithmic growth rate constant  $K_1$  for the log growth phase varied from  $0.124 \text{ hr.}^{-1}$  to  $0.152 \text{ hr.}^{-1}$
5. The declining growth rate constant  $-K_2$  for the declining growth phase varied from  $0.255 \text{ hr.}^{-1}$  to  $0.267 \text{ hr.}^{-1}$
6. The endogenous respiration rate constant  $-K_3$  for the endogenous growth phase varied from  $0.0515 \text{ hr.}^{-1}$  to  $0.0667 \text{ hr.}^{-1}$
7. By mean of the activated sludge in the batch process, the COD removal was in excess of 90 % after 24 hours of aeration.
8. The variation of pH during the operation of sample no. 1 and sample no. 2 was not much change and did not require pH adjustment except sample no. 3 and sample no. 4.

9. The nitrogen requirements based on COD, expressed as the ammonia - nitrogen requirements varied from 3.65 lb.N/100 lb. COD removed to 3.80 lb.N/100 lb. COD removed.

10. The nitrogen requirements based on BOD<sub>5</sub>, expressed as the ammonia - nitrogen requirements varied from 6.10 lb.N/100 lb. BOD<sub>5</sub> removed. to 6.35 lb.N/100 lb. BOD<sub>5</sub> removed.

11. The ammonia - nitrogen of dairy waste was high enough and sufficient for micro - organisms requirements.

12. The oxygen supply was sufficient to ensure adequate oxygen utilization through the aeration tank.

