

3.2.4.4 Temperature effect

The influence of temperature on the simplified model is through its effect on the active sludge decay rate. In Table 3.4 the decay constant is given as $b_h = 0.24 \cdot (1.04)^{T-20}$. Hence at increased temperature, the decay rate will rise and with it the oxygen consumption for endogenous respiration. Consequently the sludge production rate will decrease. The influence of temperature on OUR and the sludge production rate and the active fraction is presented graphically in Fig. 3.11, where these parameters have been plotted as functions of the sludge age for temperatures 14 and 28°C, which may be considered to be respectively the minimum and maximum temperatures of sewage in subtropical and tropical regions. The curve for 20 °C has also been indicated.

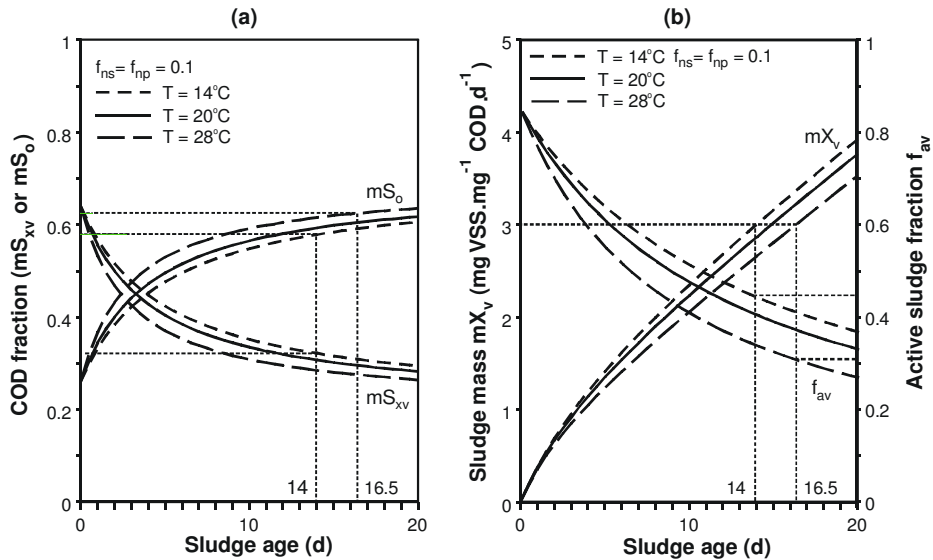


Figure 3.11 Effect of the temperature on the production of sludge and the oxygen consumption (Fig. 3.11a) and the active fraction (Fig 3.11b)