$$T' = \Lambda - \mu_T T - \kappa T_A T$$

$$T'_L = \kappa T_A T - (\mu_L + \alpha)T_L$$

$$T'_A = \alpha T_L - (\mu_A + \rho)T_A \tag{1}$$

$$T'_M = \rho T_A - \beta T_M \left(1 - \frac{T_M}{T_{M_{\max}}}\right) - \kappa T_A T$$

$$T' = \Lambda - \mu_T T - \kappa \left(\frac{T_A}{1 + \alpha_1 T_A}\right)T$$

$$T'_L = \kappa \left(\frac{T_A}{1 + \alpha_1 T_A}\right)T - (\mu_L + \alpha)T_L$$

$$T'_A = \alpha T_L - (\mu_A + \rho)T_A \tag{2}$$

$$T'_M = \rho T_A - \beta T_M \left(1 - \frac{T_M}{T_{M_{\max}}}\right) - \mu T_M$$

$$R_0 = \frac{\alpha \kappa \frac{T_A}{1 + \alpha_1 T_A} \Lambda}{\mu_T (\mu_L + \alpha)(\mu_A + \rho)}$$