

Modelling the effect of picloram on the growth kinetics of cell suspension cultures of *Ficus deltoidea* L.

ABSTRACT

Ficus deltoidea (or commonly known as mistletoe fig) in various parts of the world mainly serves as an ornamental shrub or houseplant and found native mainly in Asia tropical region, for example, Malaysia, Indonesia, Philippines and Thailand. Studies on the effect of plant growth regulators on cells production from this plant is important as optimization of cells production can lead to efficient production of secondary products characterization and production. An important aspect of the sigmoidal cells growth curve is the growth parameters. In this work, we model the effect of picloram (4-amino-3,5,6-trichloropicolinic acid) on the growth kinetics of the cell suspension cultures of *Ficus deltoidea* according to the modified Gompertz model. The adjusted coefficient of determination showed good agreement between experimental and predicted data with values ranging from 0.97-0.99. Parameters obtained from the fitting exercise were maximum cells growth rate (μ_m), lag time (λ) and maximal cells production (Y_{max}). The results showed that picloram at concentrations of 3 mg/L and above were optimal for giving the highest cells growth rate measured as PCV (packed cell volume). The parameter growth rate obtained from the modelling exercise will be helpful for additional secondary modelling implicating the consequence of media conditions as well as other factors on the effect of picloram on the growth rate of cell suspension from this plant.

Keyword: *Ficus deltoidea*; Modified Gompertz; Callus; Picloram; Growth rate