ABSTRAK

Pada pertumbuhan sel yang telah bermutasi menjadi sel tumor, sel akan terus menerus membelah sampai batas waktu tertentu. Pertumbuhan sel tumor pada waktu tertentu akan mendekati batas ambang, karena terbatasnya supply nutrien. Dari asumsi-asumsi tersebut dapat disimpulkan bahwa model pertumbuhan sel tumor merupakan turunan dari model pertumbuhan logistik. Pada pertumbuhan sel tumor, sel tumor dapat pula mati karena faktor alami atau kekebalan sel anti-tumor. Kekebalan sel anti-tumor memiliki peranan penting dalam mengurangi pertumbuhan sel tumor. Disini akan dikembangkan model pertumbuhan sel tumor dengan pengaruh kekebalan yang diakibatkan oleh sel anti-tumor. Analisis kestabilan pada setiap model dilakukan dengan diagram bifurkasi. Simulasi dilakukan dengan menggunakan data pertumbuhan sel tumor yang diberi isolat flavonoid dari herba benalu mangga *(Dendropthoe petandra)*.

Kata kunci : Model logistik, Sel tumor, Kekebalan sel anti tumor, Analisis kestabilan

ABSTRACT

On the growth of cells that have mutated into tumor cells, the cells will continue to divide until a certain time limit. The growth of tumor cells in certain time would approach the threshold because of the limited supply of nutrients. From these assumptions it can be concluded that the model of tumor cell growth is a derivative of the logistic growth model. On the growth of tumor cells, tumor cells may also die because of natural factors or anti-tumor immune cells. Anti-tumor immune cells have an important role in reducing the growth of tumor cells.In this case, it will be developed the growth model of tumor cells with immune effects caused by anti-tumor cells. Stability analysis on each model is done by bifurcation diagram. Simulation is done by using the data of tumor cells growth which is give flavonoids isolates from herbal parasite of mango *(Dendropthoe petandra)*.

Keywords : Logistic model, Tumor cells, Anti tumor of immune cells, Stability analysis