

Computer Monitoring and Estimation of Biological Growth Rate

Tariq Amarnah¹, Hashem Tamimi² and Rami Arafeh³

¹ College of Engineering and Technology

² College of Administrative Sciences and Informatics

³ Biotechnology Research Center

Palestine Polytechnic University

Abstract

Monitoring growth and activity of *in vitro* living tissues and organisms is an important step that helps in controlling growth performance and drawing up future conclusions regarding subculture and utilization. Traditional methods of estimating growth rate like measuring fresh weight and area dimensions are harmful to the tissue and inaccurate because of media residues and irregular tissue shape. This project is aimed at recording and calculating growth and growth rate for *in vitro* growing tissues and organisms in their life cycle without interference. It is based on consecutive recording of the growth area within a defined time frame then a computer vision system is built to analyze the images and estimates the growth parameters by calculating difference in the surface area.