

ABSTRAK

Key words : *Costus speciosus* (Koen) Smith., in vitro cultures, ammonium ions, nitrate ions.

In this work, we tried to figure out the effect of ammonium ions - nitrate ions on growth and phytosteroid content in the in vitro culture of *Costus speciosus* (Koen) Smith. Four kind of cultures we used in this work was formed from shoot, root, callus and suspension cultures of *Costus speciosus* (Koen) Smith kode F - 8.

In this work, complete randomized design was applied and the results was analyzed by one way anava test followed by least significant different and correlation regression.

The highest on the growth was shown in the media with the ratio of ammonium ions : nitrate ions 1 : 1 for shoot cultures, 0 : 60 for callus cultures and 1 : 2 for root and suspension cultures.

The highest diosgenin content for shoot cultures found in the ammonium ions : nitrate ions ratio of 0 : 60 with the level of nitrate ions was 60,0 mM and for the root cultures was at ammonium ions : nitrate ions ratio 1 : 1.

The highest sterol content for shoot and callus cultures found in the ammonium ions : nitrate ions ratio of 60 : 0 with the level of ammonium ions was 60,0 mM, for the root cultures found in ratio 99 : 1 and sterol for the suspension cultures with the ratio level 49 : 1.