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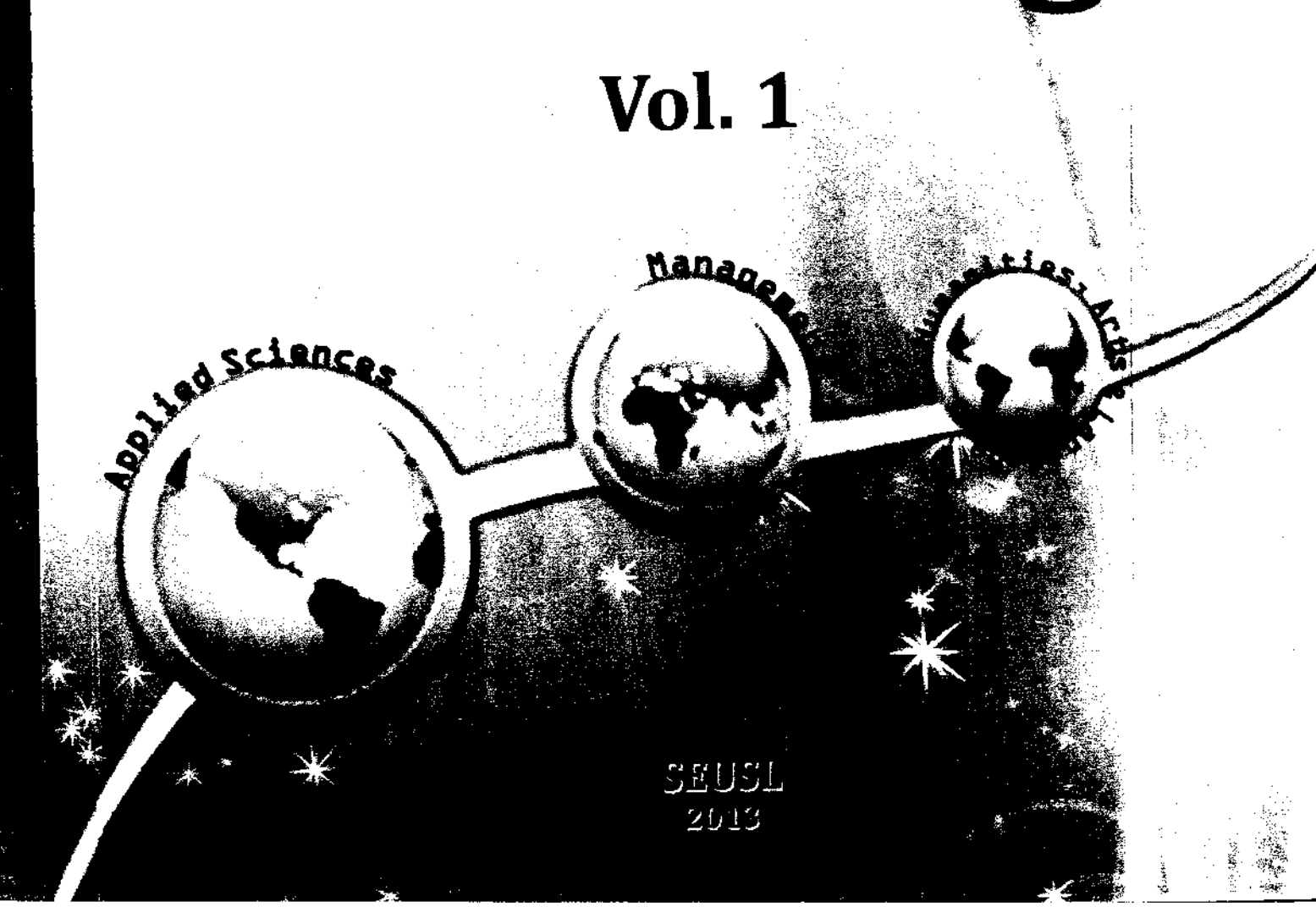

Chemistry, Physics and Earth Science

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Dry matter content of groundnut *(Arachis hypogaea)* fertilized with liquid organic fertilizer

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Abstract: An experiment was carried out to investigate the effect of liquid organic fertilizer (named as Amuthakaraisal) on dry matter content of groundnut. The experimental design was randomized complete block design (RCBD) with three replications. Treatments were defined as follows: T_1- Recommended inorganic fertilizer application as control, T_2- Amuthakaraisal applied at fifteen days, T_3- Amuthakaraisal applied at fifteen and thirty days, T_4- Amuthakaraisal applied at fifteen, thirty and forty-five days and T_5- Amuthakaraisal applied at thirty and forty-five days. The results revealed that there were significant ($p<0.05$) differences in fresh and dry weights of stem and highly significant ($p<0.01$) differences in fresh and dry weights of pods and plant biomass among the treatments. The results showed that the plants responded best and gave higher biomass in T_4 than that of the control. The dry weight of pods and total biomass increased by 22.99% and 26.36% respectively in T_4 when compared to the control. The results indicated that continuous frequent application of Amuthakaraisal increased the dry matter content of groundnut. Application of Amuthakaraisal once in fifteen days could be practiced to increase dry matter production. From this study, it could be stated that, Amuthakaraisal application at fifteen days regular interval can be adapted by farmers in groundnut cultivation as it is less harmful to the environment and health.

Keywords: Amuthakaraisal, dry matter content, groundnut, sandy regosol

Introduction

The groundnut (*Arachis hypogaea*) is an plant mostly growing in Asian countries. China leads in production of groundnuts, having a share of about 41.5% of overall world production and followed by India (18.2%). It is a crop which cultivated in highlands under rainfed condition in maha season and in paddy lands under irrigation during yala season in dry and intermediate zones in Sri Lanka. Though groundnut is an oil crop, in Sri Lanka it is demanded as snacks and confectionaries. Groundnut has been cultivated by the traditional farmers with increased application of chemical fertilizers especially nitrogen as it shows higher response to applied nitrogen. According to statistical data, chemical fertilizers accounted over 50% of increased yield. Sri Lanka had imported NPK fertilizer in 1950-1951were only 20,000 tons and by 1999 it increased to 612,000 MT (Weerakoon, 2009). However, during past few years there was yield reduction even with increased fertilizer usage (Thedchanamoorthy, 1998) and high yielding varieties were susceptible to many pests that traditional types would be tolerated. To counteract these pests, vast amount of pesticides were used (Arun and Sharma, 2000).

There are microorganisms and earthworms in soil which are precious properties of soil which determine the nutrient availability to the plants. The increased and often indiscriminate use of fertilizers and pesticides immensely harmed biological activity of the soil and rendering it almost lifeless in vast areas. The increased applications of fertilizers lead to more