

**EFFECT OF NITROGEN FERTILIZATION ON
NITRATE ACCUMULATION IN RADISH
(*Raphanus sativus*) AND BEETROOT (*Beta vulgaris*)**

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture
Uva Wellassa University
In partial fulfillment of the requirements for the award of
Bachelor of Science in Export Agriculture

By
WIJENDRA GAMLADDALAGE SAMANTHIKA LAKMAI

**Export Agriculture Degree Programme
Faculty of Animal Science and Export Agriculture
Uva Wellassa University of Sri Lanka**

2014

ABSTRACT

Nitrates are one of the most frequent utilized forms of N from soil. Through roots they reach stem and leaves and then convert into proteins by photosynthesis. Due to exposure to stress situations, and excessive nitrogen fertilization, nitrate accumulation in plant tissues and organs occurs. Excess amount of nitrate caused health hazards. To identify this nitrate accumulation in vegetables, an experiment was conducted under field condition during *yala* season in 2014. For the field experiment treatments were arranged in a randomized complete block design with three replicates. No fertilizer, 0%, 50%, 100%, 150% and 200% of nitrogen fertilizer levels from Department of Agriculture recommendation were applied as treatments for radish and beetroot. Levels of nitrogen fertilizer significantly ($p < 0.05$) affected on nitrate accumulation in radish. 150% and 200% of higher levels of nitrogen fertilizer levels significantly ($p < 0.05$) affected on higher level of nitrate accumulation in radish. In radish, both stages of four weeks after planting and harvesting stage higher amount of nitrate accumulated in leaf part than the root part. Both parts in beetroot, there was no significant different ($p > 0.05$) in nitrate accumulation. Different nitrogen fertilizer levels did not significantly affected ($p > 0.05$) on ammonium accumulation in radish and beetroot. In radish and beetroot for the yield performance nitrogen fertilizer levels significantly affected ($p < 0.05$). When increasing nitrogen fertilizer levels simultaneously increased yield of the crops therefore can be concluded for the yield performance in radish and beetroot, nitrogen fertilizer significantly affected.

Key words: Nitrate, Accumulation, Fertilizer