

## **Determination of Economic Injury Level and Economic Threshold Level of Tobacco Cutworm (*Spodoptera litura*)**

K.W.A.R. Sriyantha<sup>1</sup>, A.N.R. Weerawansa<sup>1</sup>, S.R.W.M.C.J.K. Ranawana<sup>1</sup> and C.H. Edirisooriya<sup>2</sup>

<sup>1</sup>*Department of Export Agriculture, Uva Wellassa University, Badulla, Sri Lanka*

<sup>2</sup>*Ceylon Tobacco Company, Kandy, Sri Lanka*

Total eradication of *Spodoptera litura* in tobacco cultivations is virtually impossible and is usually undesirable because it can spell the demise of the pests, natural enemies and can upset the broader economic balance. This experiment was conducted to find out the Economic Injury Level and the Economic Threshold Level of *Spodoptera litura* in tobacco cultivations. The equation,  $EIL = C/VD'K$  where C = management cost per production unit, V = market value per production unit, D' = damage per unit injury, and K = proportional reduction in injury with management, was used to find the EIL and the equation,  $ETL = EIL - (EIL/2)$  was used to find ETL. In determination of damage per unit injury, four uniform tobacco seedlings were grown in each treatment plot with three replicates and laid out in a Randomized Complete Block Design. Plants' exposure time period to the pest was considered as the treatments where the second instar larvae which were mass reared in a culture cage, were introduced at the rates of 0, 5, 10, 15 and 20 to the treatment plots having exposure times of 0, 5, 10, 15 and 20 days, respectively in the 22<sup>nd</sup> day after transplanting. Pest damage was quantified in terms of damaged leaf area. The management cost per unit production was calculated by taking both pesticide cost and application cost into account. Damage per unit injury was calculated as 1.56 and the management cost per unit production unit was calculated as LKR 4.92. Proportional reduction in injury with management was 0.8 and the market value per production unit was LKR 450.00. Upon substitution of the values in the variables of the formulas, the EIL of tobacco cutworm was determined as 8.76 larvae per 1000 plants and ETL was calculated as 4.38 larvae per 1000 plants.

**Keywords:** Economic injury level, Economic threshold level, *Spodoptera litura*, Tobacco cutworm