

# Seasonal abundance and incidence of castor semilooper (*Achaea janata* L.) Infesting Castor Crop

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**Abstract**—The Castor (*Ricinus communis* L.) is an important non-edible oilseed crop of dry lands, which is becoming popular as a commercial oilseed crop owing to its high export potential and industrial uses.. Castor semilooper (*Achaea janata*) (Noctuidae: Lepidoptera) is one of the major defoliator of castor in India, as well as in Haryana. During the crop season this pest mainly occur during August and September and thereafter, there is decrease in the pest population and pest infestation. Meteorological factors viz. maximum and minimum temperatures, relative humidity and rainfall are most important environmental factors which affect the pest and gives us idea of the environmental factors that regulates cyclic occurrence of the pest.

For studying the seasonal incidence and population of castor semilooper thirty plants were randomly selected and tagged for the observation and frequent visits were made in order to record the first incidence of castor semilooper larvae infesting castor crop. The incidence of castor semilooper was noticed on 23 July, 2013. The observations were recorded at morning at weekly intervals. The observations were continued till the population of castor semilooper declined upto zero level, which was recorded on 25<sup>st</sup> November, 2013.

Population dynamics studies on *A. janata* larvae in relation to meteorological parameters such as maximum and minimum temperatures, relative humidity and rainfall were conducted during 29<sup>th</sup> to 47<sup>th</sup> standard meteorological weeks (SMW) (16 July to 25 November) and revealed that the first appearance of larvae of *A. janata* was started from the 30<sup>th</sup> SMW and the population increased onward and reached to 6.1 on 32<sup>nd</sup> SMW and then the larval population decreased till the 37<sup>th</sup> SMW again it was increased rapidly, the maximum number of larvae were found during 38<sup>th</sup> SMW. The larval population of *A. janata* were declined from 39<sup>th</sup> SMW onwards and reached to 0.2 on 46<sup>th</sup> SMW and becomes almost zero in 47<sup>th</sup> SMW. Rainfall occurred during the 29<sup>th</sup> to 34<sup>th</sup> SMW and then 37<sup>th</sup> to 41<sup>st</sup> SMW. Rainfall was recorded highest on the 32<sup>nd</sup> and 38<sup>th</sup> SMW whereas the larval population recorded during these standard meteorological weeks were maximum 6.1 and 6.2 larvae per plant, respectively. As the rainfall declined during 35<sup>th</sup> to 37<sup>th</sup> SMW the larval population were also decreased. The minimum temperature fluctuated from 25.2 to 6.2°C, as the minimum temperature decreased on the 39<sup>th</sup> to 46<sup>th</sup> SMW, which decreased from 23.8- 6.2° C and the larval population were also decreased from 5.3 to 0.2 larvae per plant, respectively, during these SMW. The per cent relative humidity in the evening fluctuated from 69.3 to 21.1. The maximum evening relative humidity was recorded 69.3 per cent during the 32<sup>nd</sup> SMW, during this weeks the larval population was 6.1 larvae per plant. As the relative humidity decreased from 34 to 37<sup>th</sup> SMW and again from 41 to 47<sup>th</sup> SMW, the larval population were also decreased during this period.