Factors affecting Tuta absoluta (Meyrick) (Lepidoptera: Gelechiidae) infesting some tomato hybrids throughout summer season in Assiut Governorate, Upper Egypt

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Abstract:

An area of about half acre was cultivated with tomato (Lycopersicon esculentum Mill) in 2012 summer season. Obtained data indicated that the infestation began when the plant aged one month. Infestation with T. absoluta reached the maximum number of 50 and 28 larvae per 10 leaves on hybrids of H6 and H7, respectively. The infestation was then decreased gradually until the end of the season. The relative efficiency of the plant age factor was found 25% out of about 90%. Data indicated also that mirid bugs seemed to be responsible for about 14% of the variability of the infestation with T. absoluta larvae. Mirid bugs occupied the second rank of the rating sort. Both hybrids, (H6 and H7) showed similar effect of maximum temperature on larval infestation. Rating sort of co-efficient of determination revealed that the air temperature ranked the fourth factor. However, air temperature was found to be responsible for about 9% and 10% of the variability of larval infestation between the two hybrids H6 and H7, respectively. The maximum relative humidity took the lowest level. The statistical analysis indicated that the coefficient of determination of soil temperature and larvae of T. absoluta infesting H6 and H7 was about 10% and 17%, respectively. Results of the present investigation clearly show that plant age (Rate 1) may be the key factor as it had a small simple correlation despite RH (Rate8) approximately had a similar simple correlation. These reversed evidences, prove that the simple correlation is not enough to determine the potency of an independent factor unless it correlate with other factors. Thus, multi-coefficient analysis is highly recommended in such cases.

Keywords:

Multi factors analysis, T. absoluta, H6, H7 tomato varieties.

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