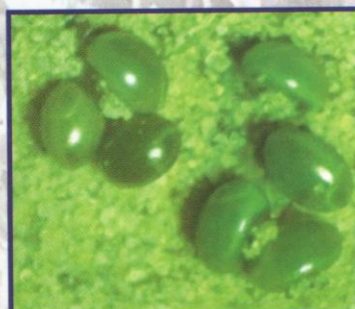


Insect Pests of Arid Vegetable Crops

(Practical Manual for Field Identification and Damage Symptoms)



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Preface

Vegetables are becoming popular for nutritional and health security point of view as they are excellent sources of minerals, proteins, vitamins, antioxidants and photochemical *etc.* Presently, India is the second largest producer of vegetables next to China with a total production of 146.55mt from an area of 8.49m ha during 2010-11. The average productivity is only 17.3t/ha which is very less in comparison to many other countries. There are many reasons for low productivity of the arid vegetables. Hot arid region are marked by abiotic limitations such as high temperature, high potential evapo-transpiration, low erratic rainfall, low soil fertility, poor quality of ground water, *etc.*, which lead to poor crop growth and yield. Apart from the climatic limitations, the biotic factors like pest and diseases are also one of the limiting factor for crop production in hot arid ecosystem.

A central problem is to identify and understand patterns in the distribution and abundance of species. In this endeavour, useful information has been generated on identification, host and damage symptoms of the pest in different vegetables at various research institutions and SAUs of the country. Earnest efforts have therefore, been made to compile information on identification, host and damage symptoms of pest in a systematic manner, grouped in different chapters and presented in the form of a bulletin entitled **Insect Pests of Arid Vegetable Crops (Practical Manual for Field Identification and Damage Symptoms)**. Correct identification of the insect, nature of damage and host preference is the prerequisites for effective pest control. This publication contains excellent colored photographs depicting salient identification characteristics of insect, symptoms of damage on plants under natural condition so as to update the knowledge of extension agencies and farmers with to the pests in the field.

The authors are grateful to Dr. S. Ayyappan, D. G., ICAR and Secretary, DARE and Dr. N K Krishna Kumar, D. D. G. (Hort.), ICAR, New Delhi for their constant inspiration, encouragement and valuable suggestion to bring out this publication. We are highly thankful to Dr. S. K. Sharma, Director, CIAH, Bikaner, who encouraged and provided valuable suggestions and ideas to improve the authenticity and quality of this bulletin.

It is hoped that this publication will be useful for research workers, extension personnel, teachers, students, planners and NGOs.

Place: Bikaner

Date:

Shravan M Haldhar

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