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From Pests to Petals: Tackling the Rose Beetle (*Adoretus versutus*) Threat

(*Akshat, Virender Kumar Rana and Jagreeti Gupta)
Dr. Yashwant Singh Parmar University of Horticulture and Forestry, Nauni, Solan, Himachal Pradesh, India
*Corresponding Author's email: akshatkapil2001@gmail.com

The Rose Beetle, scientifically known as *A. versutus*, is a significant pest in India and many other regions, causing extensive damage to a wide range of crops and ornamental plants, especially roses. As a member of the Rutelinae subfamily within the Scarabaeidae family, it is part of a larger group of pests that harm cereals, fruits, vegetables and forest crops. This article explores the biology, damaging symptoms, ecological impact and management strategies for this invasive pest, focusing on its effects on rose plants.

Biology: Unveiling the Life of *Adoretus versutus*

A. versutus is one of many species of white grubs found in India, where it has become a polyphagous pest, attacking a variety of plants. It belongs to the tribe Adoretini within the Rutelinae subfamily and includes about 460 species globally, with 76 species identified in India. Major species include *Adoretus tenuimaculatus* (the brown chafer) and *Adoretus sinicus* (the Chinese rose beetle), both known for their wide host range.

The Rose Beetle has been found in various regions of India, including Assam, Andhra Pradesh, Rajasthan, Maharashtra, Uttar Pradesh, Uttarakhand and parts of Himachal Pradesh. It also causes economic harm in Tonga, Fiji and the Cook Islands, affecting crops like cacao, coffee, vegetables and ornamental plants, including roses.

Damaging Symptoms: Recognizing the Signs of Infestation

A. versutus can seriously harm young plantations and nurseries. Since seedlings can quickly lose their leaves, they are extremely susceptible to attack. *A. versutus* adults eat by puncturing the leaflets, beginning in the centre and continuing outward without damaging the ribs.

- **Leaf Skeletonization:** Adult beetles eat the leaf tissue between the veins, creating a skeletal appearance.
- **Defoliation:** Severe infestations can lead to complete defoliation, especially in young plants, causing stunted growth and potential plant death.
- **Unique Feeding Pattern:** The beetles create small, frequent holes in the leaves, which helps in identifying their presence.

Damage by rose beetle on rose leaves and petals

Ecological Impact: The Ripple Effect of an Invasive Pest

In its native Japan, the rose beetle has natural predators that help keep its population in check. However, since its accidental introduction to the United States in the early 20th century, the beetle has become a notable pest. The adult beetles are known for their voracious appetite, particularly for the leaves and flowers of various plants, including ornamental flowers and agricultural crops. This feeding behaviour can lead to defoliation and impact the overall health of plants.

Life Cycle: From Egg to Adult Beetle

According to some experimental results, *A. versutus* takes an average of 245 days to complete its life cycle. It consists of the following stages: egg (8 days), first instar (23 days), second instar (34 days), third instar (145 days), pupal period (10 days) and adult stage (25 days).

The larvae are translucent and pale, with a C-shaped resting position. The third instar is about 20–25 mm long, with a reddish-brown head. The abdomen's lowermost portion is enlarged and discoloured, particularly from ingesting soil. The pupae are yellowish brown at first, but darken as they mature. A fully developed pupa measures 16 mm in length.

Adult beetles have large black eyes and a body typically 12–14 mm long, with a reddish-chestnut colour. Males are smaller than females. The body is shiny underneath and broad and convex with a small scutellum. The brownish lamellate antennae have ten segments. Elytra are punctate, firm and brownish with a metallic lustre. There are fine bristles on the head, prothoracic plate and elytra. Females have broader, more convex bodies.

Management Strategies: Defending Your Garden

Because a large portion of the rose beetle's life cycle is spent in the soil, it is challenging to control.

1.) **Prevent Spread:**

- **Quarantine:** The rose beetle is not yet widespread in other Pacific Island nations. Biosecurity organizations in those nations should consider potential introduction routes and implement the required safeguards.

2.) **Cultural Control:**

- **Barriers:** Use physical barriers like coconut fronds or bamboo around young rose plants.
- **Shade Management:** Keeping your rose garden shaded (more than 30-40%) can reduce beetle damage.
- **Light Traps:** Attract and catch beetles at night with light traps.
- **Handpicking:** Regularly check your roses and remove beetles by hand.

3.) **Biological Control:**

- **Natural Predators:** Encourage birds and beneficial insects that prey on beetles.

4.) **Chemical Control:**

- **Insecticides:** Use insecticides like neem oil, bifenthrin or permethrin to control the beetles. Be careful to use these chemicals sparingly to avoid harming the environment.

Conclusion

The Rose Beetle (*A. versutus*) is a significant pest that threatens roses and other crops in India and beyond. Effective management requires a combination of strategies, including cultural, biological and chemical controls, to combat its widespread damage. By understanding its life cycle and implementing integrated pest management, the impact of this invasive pest can be minimized, protecting both ornamental and agricultural plants.

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