

COMMUNICATION II

Insect Pests of Grapes in Malaysia

ABSTRAK

Serangga yang memakan pelbagai bahagian pokok anggur di Semenanjung Malaysia telah dipungut dan dikaji. Enam spesies serangga perosak dan satu spesies hamama telah dicatatkan: terdiri dari 4 spesies yang memakan pucuk dan daun, 2 spesies pengorek batang dan dahan, dan 2 spesies yang menyerang buah. Spesies perosak terdiri daripada *Apogonia cribricollis* Burmeister, *Hypomeces squamosus* Fabricius, *Nipaeococcus viridis* (Newstead), *Protaetia acuminata* Fabricius, *Vespa tropica* Linnaeus, *Xylosandrus compactus* (Eichhoff). Kumbang Scolytid *Xylosandrus compactus* merupakan serangga perosak yang paling merbahaya kerana boleh mengakibatkan dahan utama anggur mati. Spesies hamama yang menyerang anggur ialah *Eutetranychus* sp. Secara amnya, penanaman anggur di Malaysia tidak menghadapi masalah serangan perosak yang serius.

ABSTRACT

All insects attacking various parts of grape plants were collected and studied. Six insect pests from 5 families and one mite species were recorded; four species were leaf feeders, two species were stem and vine borers and two species infested fruits. The insect pests were *Apogonia cribricollis* Burmeister, *Hypomeces squamosus* Fabricius, *Nipaeococcus viridis* (Newstead), *Protaetia acuminata* Fabricius, *Vespa tropica* Linnaeus, and *Xylosandrus compactus* (Eichhoff). Scolytid borer *Xylosandrus compactus* was the most serious pest as it killed part of the main vines. The mite species was *Tetranychidae*, *Eutetranychus* sp. However, grape planting did not face serious insect problems.

INTRODUCTION

Grape cultivation in Malaysia is still at the research stage. It began at Universiti Pertanian Malaysia in 1981 as a study on the feasibility of growing table grapes commercially. Earlier tests had been made on a variety for making preserves but not for table consumption (Chan *et al.* 1975). From 1981-87 experiments at UPM concentrated on table varieties such as White Malaga. Later other varieties were brought in from the U.S.A., including varieties such as Cardinal, Early Muscat, Emperor, Isabella. In Peninsular Malaysia, it is a demanding crop agronomically, and also requires intensive spraying throughout the year especially for protection against diseases. A similar situation is experienced in Indonesia (Rismunandar 1984; Setiadi 1988).

Information regarding commercial grape plantings in Malaysia is still scanty although some plantings have been made by farmers. This paper is intended to provide information on the pests associated with grapes in Peninsular Malaysia.

MATERIALS AND METHODS

Insect Sampling

Insects were collected either manually from the plants, mulches, and the soil near the vines or by rearing from infested vines. All field-collected

insect pests were then preserved and some species were sent to the International Institute of Entomology, London for species confirmation.

RESULTS AND DISCUSSION

Grape plants were found to be susceptible to diseases caused by insects found on the grapes. A total of six families of arthropod pests comprising six species of insects and a mite species were recorded (Table 1). Among the species, four were foliage feeders, two were stem and vine borers and two were fruit feeders.

Leaf Pests

Beetles are among the common leaf pests normally found underneath the mulches or pebbles beneath the vines. They are general leaf feeders, and on grapes the damage is seen on old and young leaves. Damage can result in slow growth of the plants. Three species commonly found on grapes, *Protaetia acuminata*, *Apogonia cribricollis* and *Hypomeces squamosus*, can cause defoliation of the plant.

The red spider mite, *Eutetranychus* sp., is commonly found on the lower side of the leaf, feeding usually on the interveinal areas. Spider mite problems are sporadic, occurring generally in the dry spells and the population can be high

TABLE 1
Arthropod pests of grapes in Peninsular Malaysia.

Pest species	Leaf	Stem/vines	Fruits
COLEOPTERA			
Scarabaeidae			
<i>Apogonia cribricollis</i> Burm.	+		
<i>Protaetia acuminata</i> Fabr.	+		
Cucurliionidae			
<i>Hypomeces squamosus</i> Fabr.	+		
Scolytidae			
<i>Xylosandrus compactus</i> (Eich.)		+	
HOMOPTERA			
Pseudococcidae			
<i>Nipaecoccus viridis</i> (News)		+	+
HYMENOPTERA			
Vespidae			
<i>Vespa tropica</i> Linn.			+
ACARINA			
Tetranychidae			
<i>Eutetranychus</i> sp.	+		

when water stress occurs. They are very common on varieties such as Cardinal and White Malaga.

Stem and Vine Pests

The beetle, *Xylosandrus compactus* (adult and larva), is injurious to the trunks and vines. The damage is visible as punctured holes with frass deposits at the opening. The larvae bore longitudinal galleries in the pith; damaged vines will eventually die. The larvae pupate inside the galleries. Emerging beetles tunnel into the pith and cause more damage to the older established vines.

Fruit Pest

Another serious problem faced by grape growers is the attack by the wasp, *Vespa tropica*, when the fruits begin to ripen. Ripening fruits are attractive to wasps and birds. Damage is caused when the wasps bite the fruits on the bunch causing them to rot. Damage can be extensive enough to cause alarm to the grower.

The family Pseudococcidae includes several species of mealybugs which are known pests of many fruits including grapes. The species associated with grapes in Malaysia is *Nipaecoccus viridis* which is found on aerial roots and fruit bunches. This polyphagous species of mealybug is common

throughout Southern Asia and attacks a variety of fruit crops. The practice of bagging to protect fruits against birds and wasps actually encourages mealybug infestation. Once within the bag the mealybug is sheltered from rain and natural enemies, and secretes a sticky exudate which downgrades the grapes. The infestation of mealybug is not normally very serious.

Other pests of fruits include various species of birds. The birds seem to damage fruit bunches which are about to mature and ripen. The damaged fruits left on the bunch are infected by bacteria. The sap from the damaged fruits spreads to the neighbouring fruits on the bunch which leads to infection and rotting of fruits; eventually the whole bunch is damaged.

CONCLUSION

Grape plants are attacked by many arthropod pests, which can be grouped into root, leaf and fruit pests (Bournier 1976). *Xylosandrus compactus* can cause serious damage to the main vines. Only perfect grapes are competitive and saleworthy; so it is particularly important to protect them from pests, diseases and weeds (Bayer 1989).

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