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**IDENTIFICATION OF VIRUS CAUSES OF MOSAIC DISEASES IN
 ZUCCHINI PLANTS IN THE BALI ISLAND OF INDONESIA**

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RESEARCH ARTICLE

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Identification of Virus Causes of Mosaic Diseases in Zucchini Plants in the Bali Island of Indonesia

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Ni Putu PANDAWANĪ I Ketut WIDNYANA

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Abstract

Mosaic disease has become epidemic in the zucchini (*Cucurbita pepo* L.) plantations on the island of Bali, but the cause of the disease is not yet known with certainty, although there are allegations of common causes including the Cucumber mosaic virus (CMV), Papaya ringspot virus (PRSV), Squash mosaic virus (SqMV), Watermelon mosaic virus (WMV), and Zucchini yellow mosaic virus (ZYMV). This study aims to ascertain the cause of the mosaic disease which was carried out by observation of the symptoms, proving Koch's postulates and using Indirect-ELISA serological tests. Indirect-ELISA method was carried out following the manufacturer's instructions DSMZ (Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH) Germany using several antisera namely, Zucchini yellow mosaic virus (ZYMV, DSMZ, Germany), Cucumber mosaic virus (CMV, Agdia Inc., USA) and Papaya ringspot virus (PRSV, Agdia Inc., USA). Results showed that the occurrence of mosaic diseases in zucchini plantations with very diverse symptoms as malformation and distortion of the leaves and the fruits, blistering, vein clearing, vein banding and shoestring symptoms with disease ranging from 87.17% to 92.72%. Following of Koch's postulates mechanical inoculations were carried out using mosaic diseased leaf extract obtained a success of transmission rate of 100%. Where, healthy zucchini plants that were inoculated with mosaic symptomatic plants exhibit the same symptoms as mosaic symptoms found in the field. The main findings of this study are serological tests with Indirect-ELISA showed that 75% of zucchini plants were infected by ZYMV and as many as 8.33% were positive to CMV. There are no plants infected with PRSV. It can be concluded that the causes of zucchini mosaics on the island of Bali are ZYMV and CMV.

Keywords

Identification, Mosaic, Zucchini, ELISA, ZYMV

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