

Abstract

Virus Research

Volume 100, Issue 1, March 2004, Pages 109-113

Plant Virus Epidemiology: First steps into the new millennium

Copyright © 2003 Elsevier B.V. All rights reserved.



The epidemiology of Wheat dwarf virus in relation to occurrence of the leafhopper *Psammotettix alienus* in Middle-Germany

B. Manurung^{a, b}, W. Witsack^a, S. Mehner^c, M. Grüntzig^c and E. Fuchs^c

^a Institute of Zoology, Martin-Luther-University Halle-Wittenberg, 06099, Halle (Saale), Germany

^b Department of Biology-FMIPA, Medan-University (UNIMED), Medan-Estate, North-Sumatra 20221, Indonesia

^c Institute of Plant Breeding and Plant Protection-Virology, Martin-Luther-University Halle-Wittenberg, 06099, Halle (Saale), Germany

Available online 22 January 2004.

Abstract

Occurrence of the leafhopper *Psammotettix alienus* Dahlb. and its infectivity with Wheat dwarf virus (WDV) were studied in cereal crops in Saxony-Anhalt (Middle-Germany) in 2000 and 2001. The leafhoppers were collected with a sweep net and/or a cage trap and their WDV infectivity was determined by transmission to test plants. In 2000, adult leafhoppers were caught from the second week of May to the third week of December, whereas in 2001 they were trapped from the fourth week of May to the second week of December. Nymphs and adults were caught in spring in young actively growing crops and in summer in maturing crops and also in self-sown cereal stands. However, only adults were found in autumn in newly sown crops. The peak population density of adult

leafhoppers was in self-sown cereal plants in September when there were 25 individuals per m² in 2000 and 15 in 2001. The proportion of leafhoppers that were infective with WDV when transferred to barley test plants ranged from 5 to 79% in 2000 and from 0 to 56% in 2001. Two leafhoppers collected in June 2000 in a crop of maturing winter barley each infected both barley and wheat plants with WDV. It is concluded that the same leafhoppers are able to acquire both virus strains and transmit them to cereals.

Author Keywords: Author Keywords: *Psammotettix alienus* Dahlb.; Wheat dwarf virus (WDV); Occurrence; Infectivity; Transmission; Wheat; Barley; Volunteer plants

Article Outline

- 1. Introduction
- 2. Materials and methods
 - 2.1. Occurrence of *P. alienus*
 - 2.2. Infectivity
- 3. Results
 - 3.1. Occurrence of *P. alienus*
 - 3.2. Infectivity
- 4. Discussion
- Acknowledgements
- References

Virus Research

Volume 100, Issue 1, March 2004, Pages 109-113
Plant Virus Epidemiology: First steps into the new millennium

THE
Character Building
UNIVERSITY