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Virus vector management

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Experiences of Wheat dwarf virus in Finland 2004-2007

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The occurrence of Wheat dwarf virus (WDV) was reported for the first time in Finland in year 2004. The first samples that were tested positive, were gathered from the Nyland region in southern Finland by advisors and were tested by the Swedish University of Agricultural Sciences. Later MTT Agrifood Research Finland (MTT) tested positive samples from Åbo-region (Turku) in southwest of Finland. Based on field observations of symptoms, WDV occurred generally in winter wheat in southern Finland along the coast from Åbo (Turku) to 70 km east of Helsingfors (Helsinki), approximately. In the years 2005 and 2006 there were very few reported or suspected cases of WDV. In year 2007 symptoms were again reported and a few samples were tested positive. Most of the fields with WDV symptoms (reported by advisors) were situated in the eastern part of the Nyland region. The occurrence was not as general and the infestations not as severe as in year 2004.

Based on field observations made by advisors from 2004 and 2007 the most important factor influencing WDV infestation appeared to be the tillage. WDV occurred more often in direct drilled fields or fields with low tillage. Direct drilling and reduced tillage have increased considerably in Finland during the last ten years. The preceding crop seemed also to be an important factor influencing the infestation, but not as clearly as the tillage.

The yield reductions due to WDV have been estimated based on opinions of advisors and farmers. During 2004 the damage caused by the Wheat dwarf virus was severe. In most cases the yield reduction was 20-40% and in some cases the yield reduction was as high as 100%. In 2007 the yield reduction caused by DVD was not as severe as 2004 (appr. 5-15%).

Due to random incidence of Wheat dwarf virus, forecasting is of great importance. The monitoring of the virus spreading leafhopper (*Psammotettix alienus*) using sticky traps, started in 2004 and has been organized by MTT. Field trials investigating control of the leafhopper have been performed in Nyland since 2005.