

Tuberworm Invasion of Washington 2004-2005

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The potato tuberworm (Lepidoptera: Gelechiidae: *Phthorimaea operculella*) has recently become established as a pest of Columbia Basin potatoes. In 2002 and 2003 it was recognized as a potentially severe new pest in north-central Oregon. In 2004 a pheromone trapping network was deployed in the greater Columbia Basin of Oregon and Washington in an effort to assess the distribution and track the spread of this pest.

Tuberworm moth pheromone-baited traps were set out in the WA Basin in late March, 2005 and mid-May in 2004. The total number of moth traps in 2005 was 189, about 120 of which were deployed by our cooperators in ConAgra and Simplot, while in 2004 we deployed 62 traps in WA. Tuber moth traps were left in place and monitored weekly through the first weekend of December in 2005 and the fourth weekend in November, 2004. In 2005, traps were left in place through mid-January, when most liners were retrieved without replacement. We have left several traps in place in the mid- and south-Basin throughout the winter. We reported the trap catch data for tuberworm moths on the WSPC website: www.potatoes.com/research.cfm. This website reporting system was map-based, and was developed specifically for this project. The map was presented as a set of 5X5 mile grids, each grid containing the data for the traps located in it. These individual grid squares were linked to the charts of trap catch in that specific grid.

RESULTS:

Results are presented below in Figures 1-3. These figures show 2005 trapping data in comparison to 2004 data wherever possible.

It is important to note that tuberworm trap catch is meant to be a measure of the overall population pressure and extent of the infestation, but the intense pesticide applications common in 2005 may have complicated the interpretation of these numbers. The traps are definitely still very useful in terms of pest distribution and flight patterns early season and late season. We hope to use data from this trapping work to build a means to predict the pest pressure from one year to the next.

Acknowledgments

This project cannot move forward without cooperation from many individuals, including Peter Landolt (USDA-ARS), Dallas Batchelor (ConAgra), Mel Martin (Simplot), and many field staff.

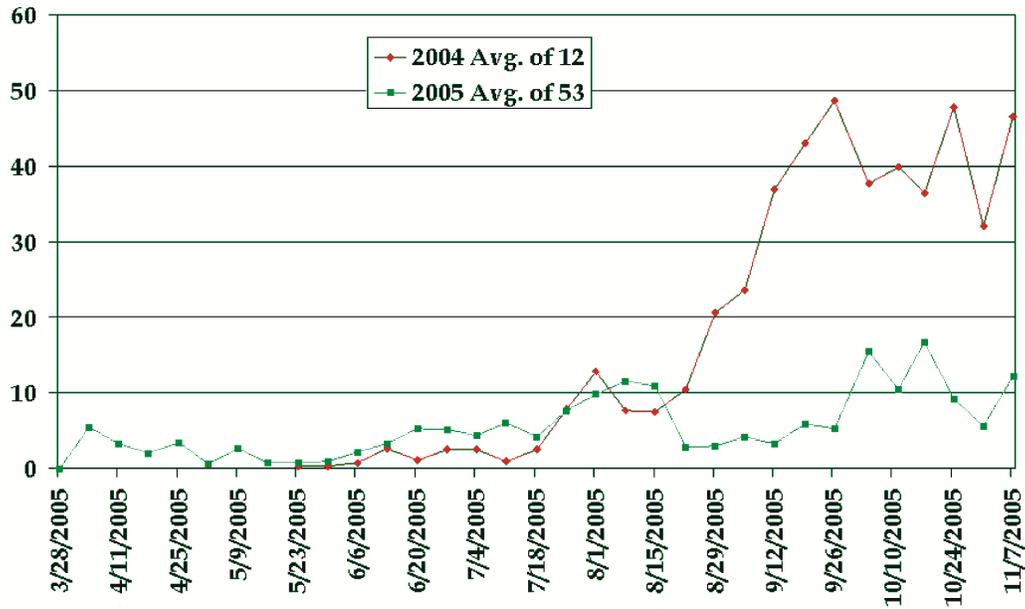


Figure 1. Tuberworm moth trap catch in the south Basin of Washington, which extends from the Oregon border to the Tri-Cities. Numbers are presented as moth catch per trap for 2004 and 2005. Cold weather forced the trap catch down to zero after the dates reported here.

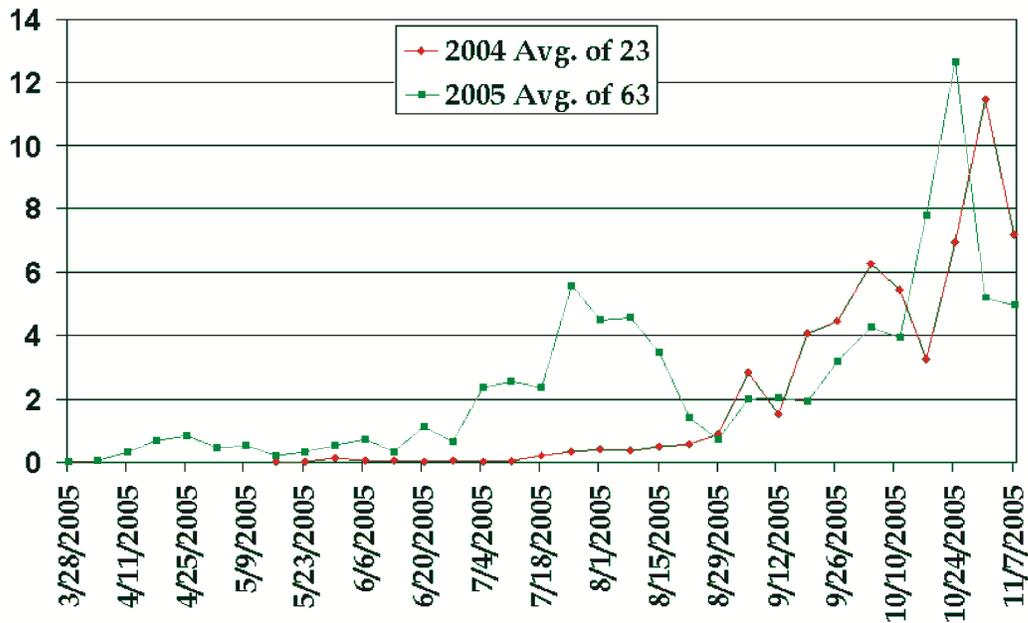


Figure 2. Tuberworm moth trap catch in the mid Basin of Washington, which extends from Tri-Cities to Othello. Numbers are presented as moth catch per trap for 2004 and 2005. Cold weather forced the trap catch down to zero after the dates reported here.

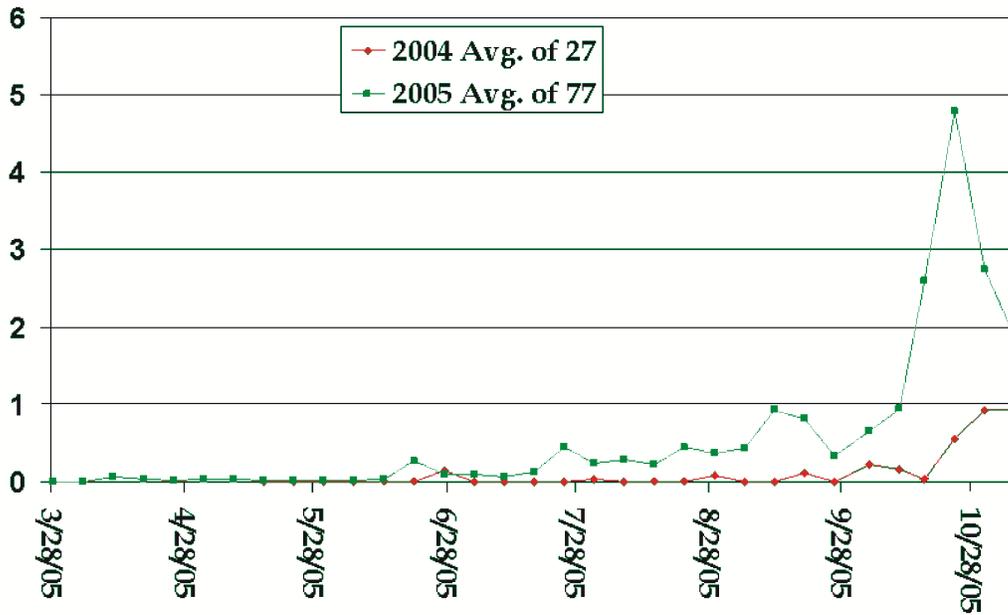


Figure 3. Tuberworm moth trap catch in the north Basin of Washington, which extends from Othello to Wilbur. Numbers are presented as moth catch per trap for 2004 and 2005. Cold weather forced the trap catch down to zero after the dates reported here. A large percentage of the moths trapped in this area in 2005 were in a single trap adjacent to a cull pile in Warden. This trap began catching moths immediately in spring.