# Attractivity of 11-tetradecenyl acetate isomers for *Archips podana* Scopoli and *Aphelia paleana* (Hübner)

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In the present study the optimum ratio of Z11-14:Ac and E11-14:Ac in sex attractants for *Archips podana* Scopoli (Lepidoptera, Tortricidae) and *Aphelia paleana* Hübner (Lepidoptera Tortricidae) is estimated using results of field tests, and the pheromone communication channel width is calculated for *Pandemis chondrillana* (Lepidoptera Tortricidae) and *Adoxophyes orana* Hübner (Lepidoptera, Tortricidae). The Gaussian distribution is used to calculate the optimal Z-isomer content $x_{max}$ and the pheromone communication channel width $w$. For *Archips podana* $x_{max}$ = 60 % of Z11-14:Ac; $w$ = 15.7; for *Aphelia paleana* $x_{max}$ = 89 % of Z11-14:Ac; $w$ = 9.6 and for *Pandemis chondrillana* $x_{max}$ = 60 % of Z11-14:Ac; $w$ =22.3. The activity curves for *A. podana* and *A. paleana* overlap in the region where the content of Z11-14: Ac is 70 –90 %, but the difference in optimal content of Z11-14:Ac for *A. podana* and *A. paleana* is 28%. It confirms that the reproductive isolation of these moths may be based on different attractive maxima as both maxima are outside of the overlapping region. 60:40 mixture of Z11-14:Ac and E11-14:Ac had the highest attractivity for *Pandemis chondrillana* and this blend is the most attractive for *A. podana*. Both species share the same population area and their reproductive isolation is probably based on additional pheromone components. Instead of having a clear attractivity maximum, an area of equal activity is ascertained for *P. chondrillana* that indicates that the optimised mixture of Z11-14:Ac and E11-14:Ac can not be used as a real sex pheromone. However, for many monitoring purposes a low attractivity blend attracting up to 10 – 12 species is preferable. The intersection of activity curves allows to optimise the attractant blends enabling us to monitor groups of moths. A dispenser for monitoring three known species, *A. podana, A. paleana* and *P. chondrillana,* will contain 80 % of Z11-14: Ac and 20 % of E11-14:Ac.

**Key word:** 11-tetradecenyl acetate, sex attractant, pheromone communication channel, pheromone dispenser, Tortricidae

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