

Atle Wibe

Addresses:

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Current position:

- Scientific Researcher, NORSØK – Norwegian Centre for Organic Agricultural

Field of research:

- Organic agriculture, pest insect management, chemoecology, insect-host interaction, insect behaviour, electrophysiology, analytical organic chemistry

Education

- 1997: Dr. scient. (Ph.D. equivalent) Norwegian University of Sciences and Technology (NTNU), Norway. Thesis: *Identification of conifer volatiles detected by receptor neurons in the pine weevil (Hylobius abietis): analysed by gas chromatography linked to electrophysiology and to mass spectrometry* (ISBN: 82-7861-049-5)
- 1991: Cand. scient. (Master of Science equivalent) University of Trondheim (UNiT), Norway. Thesis: *Vertsdufter hos gransnutebillen (Hylobius abietis): kopling av elektrofysiologi og gasskromatografi for identifisering av vertsdrufter*.

Previous positions:

- 2015 Researcher, Bioforsk/NIBIO - Centre of Competence Organic Agriculture and Food Production
- 2013 Advisor, Research Council of Norway, location office in Brussel, Belgium, working period 3,5 months.
- 2005-2014 Research Director, Bioforsk Organic (/Norwegian Centre for Ecological Agriculture)
Research projects founded by the Research Council of Norway (NFR):
 - *Softpest Multitrap, ERA-net CORE Organic II project with 8 partners from 6 countries.*
Role in project: Coordinator and executing researcher
 - *Control of weevils in strawberry by using plant volatiles and other alternative methods.*
 - *Reduced ticks and tick-borne diseases in sheep by integrated management*
- 2002-2005 Researcher, Norwegian Centre for Ecological Agriculture.
Research project founded by NFR:
 - *Development of plant protection for strawberry (Fragaria xananassa) against damage caused by the strawberry blossom weevil (Anthonomus rubi)*
- 1999-2002 Post. Doc./ researcher Norwegian University of Science and Technology (NTNU), Department of Biology. Research project founded by the NFR and World Health Organization (WHO): *-Identification of host volatiles detected by malaria mosquitoes (Anopheles gambiae), electrophysiology and behavior.*
- 1997-1999 Associate professor (Nord Trøndelag College (HiNT), Steinkjer, Norway)
- 1994-1997 Lecturer (HiNT, Steinkjer, Norway)
- 1992-1994 PhD-student, University of Trondheim
- 1988-1993 Teaching at UNiT, Dep. of Zoology
- 1989-1992 Engaged in projects studying warble flies, the pine weevil, bark beetles, 12 months

- 1987-1988 Control of pollution from agricultural activity, Nord-Trøndelag County, 5 months

Referee

Journal of Insect Physiology, Journal of Agricultural and Food Chemistry, Behavioural Ecology, Silva Fennica, Naturwissenschaften, Crop Protection.

Publications

- Trandem, N, C. Baroffio, M. Fountain, B. Ralle, P. Rendina, P. Richoz L. Sigsgaard, A.-K. Borg-Karlson, D. Hall, J.V. Cross, A. Wibe. (2015). Using semiochemical traps to study the occurrence of strawberry blossom weevil in strawberry and raspberry – what did we learn? IOBC-wprs Bulletin Vol 109: 93-94.
- Fountain, M.T., B. Shaw, N. Trandem, S. Storberget, C. Baroffio, B. Ralle, P. Rendina, P. Richoz, L. Sigsgaard, A.-K. Borg-Karlson, D. Hall, J. V. Cross, A. Wibe (2015). The potential for mass trapping *Lygus rugulipennis* and *Anthonomus rubi*; trap design and efficacy. IOBC-wprs Bulletin Vol 109: 95-97.
- Atle Wibe, Anna-Karin Borg-Karlson, Jerry Cross, Lene Sigsgaard, Ilme Liblikas, Michelle Fountain and Helena Bichao (2014). Combining 1,4-dimethoxybenzene, the major flower volatile of wild strawberry *Fragaria vesca*, with the aggregation pheromone of the strawberry blossom weevil *Anthonomus rubi* improves attraction. Crop Protection 64: 122-128
- Ralle, B., Cross, J., Borg-Karlson, A.-K., Hall, D., Trandem, N., Sigsgaard, L., Baroffio, C., Fountain, M., and Wibe, A. (2013) Traps for *Lygus rugulipennis* and *Anthonomus rubi*: preliminary results from Softpest Multitrap activities in Latvia. In: Sigsgaard, L., Jensen, B., Trandem, N., Parikka, P. and Svensson, B. (Eds.) NJF Nordic Association of Agricultural Scientists and University of Copenhagen, NJF report Vol 9 (No 465), pp. 17-18.
- Wibe, Atle; Cross, Jerry; Borg-Karlson, Anna-Karin; Hall, David; Sigsgaard, Lene; Baroffio, Catherine; Ralle, Baiba and Fountain, Michelle (2013) Management of strawberry blossom weevil and european tarnished plant bug in organic strawberry and raspberry using semiochemical traps “Softpest Multitrap”. In: Sigsgaard, L., Jensen, B., Trandem, N., Parikka, P. and Svensson, B. (Eds.) NJF Nordic Association of Agricultural Scientists and University of Copenhagen, NJF report Vol 9 (No 465), pp. 31-32.
- Bichão, H., Borg-Karlson, A-K., Wibe, A., Araújo, J and H. Mustaparta (2005) Molecular receptive ranges of olfactory receptor neurones responding selectively to terpenoids, aliphatic green leaf volatiles and aromatic compounds, in the strawberry blossom weevil *Anthonomus rubi*. Chemoecology 15:211–226
- Atle Wibe (2004) How the choice of method influence on the results in electrophysiological studies of insect olfaction, Journal of Insect Physiology 50: 497-503.
- Atle Wibe, Anna-Karin Borg-Karlson, Monica Persson, Torbjørn Norin and Hanna Mustaparta (1998) Enantiomeric composition of monoterpene hydrocarbons in some conifers and receptor neuron discrimination of α -pinene and limonene enantiomers in the pine weevil, *Hylobius abietis*. Journal of Chemical Ecology 24(2):273-287
- Atle Wibe, Anna-Karin Borg-Karlson, Torbjørn Norin and Hanna Mustaparta (1997) Identification of plant volatiles activating single receptor neurons in the pine weevil (*Hylobius abietis*). Journal of Comparative Physiology A 180: 585-595.
- Atle Wibe and Hanna Mustaparta (1996) Encoding of plant odours by receptor neurons in the pine weevil (*Hylobius abietis*) studied by linked gas chromatography-electrophysiology. Journal of Comparative Physiology A 179:331-344.
- Atle Wibe, Anna-Karin Borg-Karlson, Torbjørn Norin and Hanna Mustaparta (1996) Identification of

plant volatiles activating the same receptor neurons in the pine weevil, *Hylobius abietis*. *Entomologia Experimentalis et Applicata* 80: 39-42.

- Bjørn Å. Tømmerås, Arne C. Nilssen and Atle Wibe (1996) The two reindeer parasites, *Hypoderma tarandi* and *Cephenemyia trompe* (Oestridae), have evolved similar olfactory receptro abilities to volatiles from common host. *Chemoecology* 7:1-7.
- B.Å. Tømmerås, A. Wibe, A.C. Nilssen and J.R. Anderson. (1993) The olfactory response of the reindeer nose bot fly, *Cephenemyia trompe* (Oestridae), to components from interdigital pheromone gland and urine from host reindeer, *Rangifer tarandus*. *Chemoecology* 4:115-119
- A. Wibe and H. Mustaparta (1992) Specialisation of reception neurons to host odours in the pine weevil, *Hylobius abietis*. *Proc. 8th Int. Symp. Insect-Plant Relationships*, Dordrecht: Kluwer Acad. Publ. S.B.J. Menken, J.H. Visser & P. Harrewijn (eds)

Publications in prep (from the project Softpest Multitrap)

- Wibe, Atle et al. (*in prep*) Pheromones and leaf volatiles (TMTT and Caryophyllene) in the attraction of strawberry blossom weevil (*Anthonomus rubi*)
- Mozuraitis, Raimondas et al. (*in prep*) Strawberry floral volatiles: chemodiversity and behavioural effect on strawberry blossom weevil.
- Mozuraitis, Raimondas et al. (*in prep*) Identification of strawberry fungus released volatiles.
- Fountain, Michelle (*in prep*) Trap design and deployment (height, range influence) including the beneficial bi catch data, behavioural weevil on traps
- Baroffio, Catherine (*in prep*) Lure combinations in strawberry and raspberry in three pest insects species management
- Trandem, Nina (*in prep*) Semiochemical trapping of three non-lepidopteran berry pests 46-63°N: Phenology and effects of crop, habitat and region
- Wibe, Atle (*in prep*) Potential (and economic) benefits of mass trapping, both strawberry and raspberry, synthesis
- Brun, Sara et al. (*in prep*) Behaviour on and occurrence around traps, fluon tests, etc. All 3 target species