

Atle Wibe

Job address:

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Current position:

- Research Scientist, NORSØK – Norwegian Centre for Organic Agricultural (2016-)

Field of research:

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

Ongoing research projects:

- Fencing combined with insect traps to protect strawberries against pest insects
- Ozone-water treatment of potato to prevent fungal diseases

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 Research Scientist, 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 Food and Farming Division (/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 Research Scientist, 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./Research Scientist, 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 behaviour.*
- 1997-1999 Associated 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

Research articles

- Baroffio, C.A., Sigsgaard, L., Ahrenfeldt, E.J., Borg-Karlson, A.K., Bruun, S.A., Cross, J.V., Fountain, M.T., Hall, D.R., Mozuraitis, R., Ralle, B., Trandem, N., **Wibe, A.** (2018). Combining plant volatiles and pheromones to catch two insect pests in the same trap: Examples from two berry crops. *Crop Protection* 109: 1-8. <https://doi.org/10.1016/j.cropro.2018.02.025>
- Fountain, M.T., Baroffio, C., Borg-Karlson, A.-K., Brain, P., Cross, J.V., Farman, D.I., Hall, D.R., Ralle, B., Rendina, P., Richoz, P., Sigsgaard, L., Storberget, S., Trandem, N., **Wibe, A.** (2017). Design and deployment of semiochemical traps for capturing *Anthonomus rubi* Herbst (Coleoptera: Curculionidae) and *Lygus rugulipennis* Poppius (Heteroptera: Miridae) in soft fruit crops. *Crop Protection* 99: 1-9. <https://doi.org/10.1016/j.cropro.2017.05.001>
- **Atle Wibe**, Anna-Karin Borg-Karlson, Jerry Cross, Helena Bichao, Michelle Fountain, Ilme Liblikas, and Lene Sigsgaard (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
- Bichão, H., Borg-Karlson, A.-K., **Wibe, A.**, Araújo, J and H. Mustaparta (2005) Molecular receptive ranges of olfactory receptor neurons 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 influences 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 receptor 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

Review article

- Rahmann G., Ardakani MR., Bärberi P., Boehm H., Canali S., Chander M., Wahyudi D., Dengel L., Erisman JW., Galvis-Martinez AC., Hamm U., Kahl J., Köpke U., Kühne S., Lee SB., Løes AK., Moos JH., Neuhof D., Nuutila JT., Olowe V., Oppermann R., Rembialkowska E., Riddle J., Rasmussen IA., Shade J., Sohn SM., Tadesse M., Tashi S., Thatcher A., Uddin N., von Fragstein und Niemsdorff P., **Wibe A.**, Wivstad M., Wenliang W., Zanolli R., Baroffio, C.A., Guibert, V., Richoz, P., Rogivue, A., Borg-Karlsson, A.K., Cross, J., Fountain, (2017) Organic Agriculture 3.0 is innovation with research. *Organic Agriculture*. *Organic Agriculture* 7(3): 169-197. doi:10.1007/s13165-016-0171-5

Proceedings and reports

- **Wibe, Atle** (2017) Progress in pest management in organic strawberry production. NJF Seminar 495 - 4th organic Conference. NJF Report Vol 13 (No 1), pp. 78-79.
- C.A. Baroffio, V. Guibert, P. Richoz, A. Rogivue, A.K. Borg-Karlsson, J. Cross, M. Fountain, D. Hall, B. Ralle, L. Sigsgaard, N. Trandem, **A. Wibe**. (2016). Management of insect pests using semiochemical traps. *Acta Horticulturae (ISHS)* 1137: 121-128. DOI 10.17660/ActaHortic.2016.1137.17
- 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.
- Baroffio, Catherine; Borg-Karlson, Anna-Karin; Cross, Jerry; Fountain, Michelle; Guibert, Virginie; Hall, David; Ralle, Baiba; Rogivue, Aude; Sigsgaard, Lene; Trandem, Nina and **Wibe, Atle** (2015) Comment attirer deux ravageurs des framboises dans un même piège? *Revue suisse Viticulture, Arboriculture, Horticulture*, 47 (3), pp. 152-158.
- **Wibe, Atle**; Cross, Jerry V.; Borg-Karlson, Anna-Karin; Hall, David R.; Trandem, Nina; Sigsgaard, Lene; Baroffio, Catherine; Ralle, Baiba and Fountain, Michelle T. (2014). Softpest multitraps - management of strawberry blossom weevil and european tarnished plant bug in organic strawberry and raspberry using semiochemical traps. In: Rahmann, G. and Aksoy, U. (Eds.) *Building Organic Bridges*, Thuenen Report, no. 20, pp. 883-886.
- 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 Multitraps 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 9(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 Multitraps”. 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 9 (465), pp. 31-32.

- Storberget, Sverre; Trandem, Nina; Borg-Karlson, Anna-Karin; Cross, Jerry; Fountain, Michelle; Hall, David; Ralle, Baiba; Sigsgaard, Lene and **Wibe, Atle** (2013) Trapping of *Lygus rugulipennis* in Norwegian strawberry crops. In: NJF Report, 9 (465), pp. 35-36.
- **Wibe A.**, Mustaparta H. (1992) Specialization of receptor neurons to host odours in the pine weevil, *Hylobius abietis*. In: Menken S.B.J., Visser J.H., Harrewijn P. (eds) Proceedings of the 8th International Symposium on Insect-Plant Relationships. Series Entomologica, vol 49. Springer, Dordrecht

Reports in Norwegian

- **Wibe, Atle** (2020) FenceTrap - Kombinert bruk av alternative plantevernmidler for reduksjon av insektskader i jordbær. NORSØK Rapport, 5(5): 28pp.
- **Wibe, Atle** (2020) Kartlegging av kunnskap om muligheter for bruk av ozonholdig vann som plantevernmiddel mot gråskimmel i jordbær. [Survey of the knowledge about the possibilities of using ozonated water against botrytis in strawberry.] NORSØK Rapport, 5(2): 28 pp.
- **Wibe, Atle**; Røyset, Arne; Ebbesvik, Martha (2019). Utvikling av ny insektfelle for jordbærsnutebillen. NORSØK Rapport, 4(4): 20 pp.
- **Wibe, Atle** (2017). Ozonvann mot gråskimmel i jordbær. [Ozone water against Botrytis in strawberry.] NORSØK Rapport, 7(2): 18 pp.
- **Wibe, Atle**; Solemdal, Liv; Pommeresche, Reidun; Stangeland, Janne Kristin and Ween, Ola (2017) Insektlarver som proteinfôr til fisk og husdyr. NORSØK Rapport 9(2): 23 pp.
- Friis Pedersen, Susanne and **Wibe, Atle** (2017). Quinoadyrking i Norge. Potensiale for innovasjon og utprøving av sorter. NORSØK Rapport, 2(2): 40 pp.
- **Wibe, A.** & Sjøberg, P. (2016). Jordbæreskade - utprøving av ny kunnskap innen plantevern av jordbær, utvikling av metode og informasjon om tiltak for økologisk og integrert plantevern. NORSØK Rapport 7(1): 18 pp.

Referees

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

Expert proposal evaluations

- 2019 Mid Sweden University
- 2019 ICROFS, Organic RDD 5
- 2015 ICROFS, Organic RDD 2.2