

# Curriculum Vitae

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## **Gunda Thöming, Ph.D.**

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**Scientist – Chemical Ecology, Insect Behaviour, Insect Pest Management**

**Education:**

- 2005 **Dr. rer. hort. (Ph.D.)**, Horticultural Sciences, Plant Protection, Entomology  
Leibniz University Hannover, Germany.
- 2002 **Diplom (M.Sc.)**, Horticultural Sciences  
Leibniz University Hannover, Germany.
- 1999 **Vordiplom (B.Sc.)**, Horticultural Sciences  
Leibniz University Hannover, Germany.
- 1997 **LTA – Landwirtschaftlich Technische Assistentin (Laboratory assistant)**, Biotechnology  
Federal Centre for Breeding Research on Cultivated Plants, Ahrensburg, Germany.

**Work experience:**

- 03/2013 – today **Independent research** in chemical ecology, insect behaviour and pest management at the Norwegian Institute of Bioeconomy Research – NIBIO (former BIOFORSK), Biotechnology and Plant Health Division, Invertebrate Pests and Weeds, Chemical Ecology, Ås, Norway.
- 08/2016 Award: *The 2016 Research Article of the Year Award* of Journal of Agricultural and Food Chemistry and American Chemical Society, Division of Agrochemicals.
- 03/2013 Patent application: Use of pea plant volatiles to attract pea moth.
- 03/2011 – 02/2013 **Postdoctoral research** at the Norwegian Institute for Agricultural and Environmental Research - BIOFORSK, Research Division Plant Health and Plant Protection, Chemical Ecology, Ås, Norway.
- 03/2011 – 02/2013 Postdoctoral fellowship of the Deutsche Forschungsgemeinschaft.
- 03/2009 – 02/2011 **Postdoctoral research** at the Swedish University of Agricultural Sciences, Department of Plant Protection Biology, Chemical Ecology Group, Alnarp, Sweden.
- 02/2010 – 03/2010 Research visit at the Assiut University, Faculty of Science, Department of Zoology, Assiut, Egypt.
- 02/2006 – 12/2008 **Postdoctoral research** at the University Kassel, Department of Ecological Plant Protection, Witzenhausen, Germany.
- 09/2007 + 06/2007 Research visits at the Swedish University of Agricultural Sciences, Department of Plant Protection Biology, Chemical Ecology Group, Alnarp, Sweden.  
Funded by the Boehringer Ingelheim Fonds.
- 01/2003 – 12/2005 **Doctoral thesis:** "Soil application of neem products in integrated pest management: controlling thrips (Thysanoptera: Thripidae) in vegetable crops", Leibniz University Hannover, Institute of Plant Diseases and Plant Protection, Entomology Group, Hannover, Germany.
- 01/2003 – 12/2005 Doctoral scholarship of the Deutsche Bundesstiftung Umwelt.
- 02/2004 – 12/2004 Research visit at the Asian Institute of Technology, Pathumthani, Thailand.  
Funded by the Deutsche Forschungsgemeinschaft and the Deutsche Bundesstiftung Umwelt.
- 02/2002 – 12/2002 Scientific assistant at the Leibniz University Hannover, Institute of Plant Diseases and Plant Protection, Entomology Group, Germany.

**Selected projects:**

- 2019-2022                    **KJØLMARK** – Improved monitoring and control of wireworms (Coleoptera: Elateridae) in Norwegian potato production: **WP 4: Alternative methods for direct control of wireworms**. Work package leader. Funded by: Forskningsrådet / Matfondet, Norway.
- 2015-2019                    **BRAKORN** - Improving the profitability of spring oilseed Brassica production – a key to improving quality and yield of cereal crops in Norway: **WP 3.2: Optimizing integrated pest management strategies for pest insects of spring oilseed Brassica**. Work package leader. Funded by: Forskningsrådet / KPN, Norway.
- 2015-2018                    **SMARTCROP** – Innovative approaches and technologies for Integrated Pest Management (IPM) to increase sustainable food: **WP 1.2: Odor-based insect control combined with biological control**. Work package leader. Funded by: Forskningsrådet / Bionær, Norway.
- 2015-2017                    **Integrated control of the onion fly in Norway – development of monitoring and prognoses** (Integrert bekjempelse av løkflue i Norge – Utvikling av metode for overvåking og varsling). Project leader. Funded by: Landbruksdirektoratet / FFL / JA, Norway.
- 2011 – 2013                    **Pea odorants guide host finding behaviour in pea moth: a new strategy for sustainable insect management**. Project leader. Funded by: Deutsche Forschungsgemeinschaft, Germany.
- 2006 – 2008                    **Development of a situational concept to control pea moth *Cydia nigricana* (Lepidoptera: Tortricidae) in green- and field peas** (Entwicklung eines situationsbezogenen Konzeptes zur Regulation des Erbsenwicklers in Gemüse- und Körnererbsen). Project leader. Funded by: German Federal Ministry of Food, Agriculture and Consumer Protection, BLE/BÖL, Germany.
- 2003 – 2005                    **Soil application of neem products in integrated pest management: Controlling thrips in vegetable crops** (Möglichkeiten zur Nutzung von Bodenapplikationen von Neem-Präparaten im integrierten Pflanzenschutz am Beispiel der Kontrolle von Thripsen). Project leader. Funded by: Deutsche Bundesstiftung Umwelt, Germany.

**List of publications:*****International peer reviewed journals***

- Steen, R, Norli, HR, **Thöming, G**. 2019. Volatiles composition and timing of emissions in a moth-pollinated orchid in relation to hawkmoth (Lepidoptera: Sphingidae) activity. *Arthropod-Plant Interactions* (in press).
- Pålsson, J\*, **Thöming, G\***, Silva, R, Porcel, M, Dekker, T, Tasin, M. 2019. Recruiting on the spot: a biodegradable formulation for lacewings to trigger biological control of aphids. *Insects* 10: 6, doi:10.3390/insects10010006. \*Shared first authorship
- Knudsen, GK, Tasin, M, Aak, A, **Thöming, G**. 2018. A wind tunnel for odour mediated insect behavioural assays. *Journal of Visualized Experiments* (141), e58385, doi:10.3791/58385.
- Salvagnin, U, Malnoy, M, **Thöming, G**, Tasin, M, Carlin, S, Martens, S, Vrhovsek, U, Angeli, S, Anfora, G. 2018. Adjusting the scent ratio: using genetically modified *Vitis vinifera* plants to manipulate European grapevine moth behaviour. *Plant Biotechnology Journal* 16: 264-271.
- Dalen, M, Knudsen, GK, Norli, HR, **Thöming, G**. 2015. Sources of volatiles mediating host location behaviour of *Glypta haesitator*, a larval parasitoid of *Cydia nigricana*. *Biological Control* 90: 128-140.
- Thöming, G** & Norli, HR. 2015. Olfactory cues from different plant species in host selection by female pea moth. *Journal of Agricultural and Food Chemistry* 63: 2127-2136. **(2016 JAFRC Research Article of the Year Award)**
- Thöming, G** & Knudsen, GK. 2014. Attraction of pea moth *Cydia nigricana* to pea flower volatiles. *Phytochemistry* 100: 66-75.
- Thöming, G**, Norli, HR, Saucke, H & Knudsen, GK. 2014. Pea plant volatiles guide host location behaviour in pea moth. *Arthropod-Plant Interactions* 8: 109-122.
- Thöming, G**, Larsson, MC, Hansson, BS & Anderson, P. 2013. Comparison of plant preference hierarchies of male and female moths and the impact of larval rearing hosts. *Ecology* 94: 1744-1752.
- Anderson, P, Sadek, MM, Larsson, MC, Hansson, BS & **Thöming, G**. 2013. Larval host plant experience modulates both mate finding and oviposition choice in a moth. *Animal Behaviour* 85: 1169-1175.
- Thöming, G**, Pöhlitz, B, Kühne, A & Saucke, H. 2011. Risk assessment of pea moth *Cydia nigricana* infestation in organic green peas based on spatiotemporal distribution and phenology of the host plant. *Agricultural and Forest Entomology* 13: 212-130.
- Thöming, G** & Saucke, H. 2011. Key factors affecting the spring emergence of pea moth (*Cydia nigricana*). *Bulletin of Entomological Research* 101: 127-133.
- Kumar, P, Whitten, M, **Thöming, G**, Borgemeister, C & Poehling, H-M. 2008. Effects of bio-pesticides on *Eretmocerus warrae* (Hym., Aphelinidae), a parasitoid of *Bemisia tabaci* (Hom., Aleyrodidae). *Journal of Applied Entomology* 132: 605-613.
- Hossain, B, Poehling, H-M, **Thöming, G** & Borgemeister, C. 2008. Effects of soil application of neem (NeemAzal®-U) on different life stages of *Liriomyza sativae* (Diptera: Agromyzidae) on tomato in humid tropics. *Journal of Plant Diseases and Protection* 115: 80-87.
- Thöming, G**, Draeger, G & Poehling, H-M. 2006. Soil application of azadirachtin and 3-tigloyl-azadirachtol to control the western flower thrips, *Frankliniella occidentalis* (Thysanoptera: Thripidae): translocation and persistence in bean plants. *Pest Management Science* 62: 759-767.

- Thöming, G** & Poehling, H-M. 2006. Integrating soil-applied azadirachtin with *Amblyseius cucumeris* (Acari: Phytoseiidae) and *Hypoaspis aculeifer* (Acari: Laelapidae) for the management of *Frankliniella occidentalis* (Thysanoptera: Thripidae). *Environmental Entomology* 35: 746-756.
- Thöming, G** & Poehling, H-M. 2006. Soil application of different neem products to control *Ceratothripoides claratris* (Thysanoptera: Thripidae) on tomatoes grown under protected cultivation in the humid tropics (Thailand). *International Journal of Pest Management* 52: 239-248.
- Thöming, G**, Borgemeister, C, Sétamou, M & Poehling, H-M. 2003. Systemic effects of neem on western flower thrips, *Frankliniella occidentalis* (Thysanoptera: Thripidae). *Journal of Economic Entomology* 96: 817-825.

### Book chapter

- Thöming, G**, Saucke, H & Witzgall, P. 2011. Pea moth. In: Compendium of chickpea and lentil diseases and pests. Chen, W, Sharma, HC & Muehlbauer, FJ (eds), APS Press, Minnesota, USA, pp. 119-121.

### Popular scientific journals

- Johansen, NS, Bosque Fajardo, M, Folkedal Schjøll, A, **Thöming, G**, Strand, E. 2019. Glansbillene er resistente – hva nå? *Norsk Landbruk* 01/02: 50-51.
- Thöming, G**, Strand, E., Waalen, W. 2018. Skadedyr i oljevekster. *NIBIO POP 4* (14): 1-6.
- Abrahamsen, U, Waalen, W, Henriksen, T, Brodal, G, **Thöming, G**. 2018. Etablering av våroljevekster. *NIBIO POP 4* (3):1-6.
- Knudsen, GK & **Thöming, G**. 2018. En nese for kvalitet. *NIBIO BOK 4* (3): 40.
- Salvagnin, U, Malnoy, M, **Thöming, G**, Tasin, M, Carlin, S, Martens, S, Vrhovsek, U, Angeli, S, Anfora, G. 2018. Exploitation of genetically modified *Vitis vinifera* plants with altered kairomone emission ratio for control of the European Grapevine Moth *Lobesia botrana*. *IOBC/wprs Bulletin* 139: 22-27.
- Folkedal Schjøll, A, & **Thöming, G**. 2017. Ertevikler – en mulig årsak til dårlige avlinger I norsk erteproduksjon. *Gartneryrket* 5: 54-58.
- Manzke, U, Klug, T & **Thöming, G** 2015. Großbranchiopoden im Raum Hannover – ein Baustein zur Verbreitung von Feenkrebse und Rückenschälern in Niedersachsen (Crustacea: Anostraca, Notostraca). *Abhandlungen und Berichte für Naturkunde* 34: 109-149.
- Thöming, G**. 2014. Hvordan finner ertevikler vertsplanter? En historie om lukt i erteviklerbekjempelse. *Bioforsk FOKUS* 9 (2): 108.
- Thöming, G**, Norli, HR, Saucke, H & Knudsen, GK 2014. Pea flower volatiles to control the pea moth? First results from wind tunnel and field experiments. *IOBC/wprs Bulletin* 99: 103-105.
- Thöming, G**, Saucke, H & Knudsen, GK 2014. Pea odorants guide host finding behaviour in pea moth: a new strategy for insect management? *IOBC/wprs Bulletin* 107: 87-90.
- Thöming, G**, Norli, HR, Saucke, H & Knudsen, GK. 2012. Ein Lockstoff für den Erbsenwickler? Erste Ergebnisse zu Wirtspflanzen-Duftstoffen in Windtunnel- und Freilandstudien. *Julius-Kühn-Archiv* 438: 147.

- Thöming, G & Saucke, H.** 2012. Blatt, Knospe, Blüte oder Hülse – wann kommt der Erbsenwickler zur Erbse? Mitteilungen der Deutschen Gesellschaft für allgemeine und angewandte Entomologie 18: 237-240.
- Thöming, G, Wedemeyer, R, Pölit, B, Köhler, G & Saucke, H.** 2008. Perspektiven präventiver Anbauplanung zur Regulation des Erbsenwicklers (*Cydia nigricana*) im ökologischen Gemüseerbsenanbau. Mitteilungen aus dem Julius-Kühn-Institut 417: 246.
- Thöming, G, Wedemeyer, R & Saucke, H.** 2008. Präventive Anbauplanung kombiniert mit bedarfsgerechtem Einsatz von Pyrethrinen zur Regulation des Erbsenwicklers (*Cydia nigricana*) in Gemüseerbsen. Mitteilungen der Deutschen Gesellschaft für allgemeine und angewandte Entomologie 16: 333-337.
- Thöming, G & Poehling, H-M.** 2006. Bodenapplikationen von Neem-Präparaten zur Kontrolle von *Frankliniella occidentalis* – Verlagerung und Persistenz in Bohnenpflanzen. Mitteilungen aus der Biologischen Bundesanstalt für Land- und Forstwirtschaft 400: 128.
- Thöming, G, Borgemeister, C & Poehling, H-M.** 2004. Bodenapplikationen von Neem-Präparaten in Kombination mit dem Einsatz von Raubmilben zur Kontrolle von *Frankliniella occidentalis*. DGaE-Nachrichten 18: 22.
- Thöming, G, Borgemeister, C & Poehling, H-M.** 2004. Neue Möglichkeiten gegen Thripse – Neem-Bodenapplikation im integrierten Pflanzenschutz. Taspo Magazin 2: 15-17.