

CURRICULUM VITAE

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Education:

2005-2010: Norwegian University of Life Sciences (NMBU), PhD in the field of applied statistics
2004-2005: Norwegian University of Life Sciences (NMBU), Teachers Education
1998-2003: Agricultural University of Norway (renamed as the Norwegian University of Life Sciences (NMBU)), Cand. Scient in the field of applied mathematics

Employment:

2013- : Researcher at NIBIO
2010-2013: Post Doc at Industrial Ecology Programme (IndEcol), Norwegian University of Sciences and Technology (NTNU)
2005-2010: PhD-student at NIBIO and Norwegian University of Life Sciences (NMBU)

Scientific papers:

Guimapi, R.A., Nordskog, B., **Hjelkrem, A.G.R.**, Klingen, I., Tjepa-Yotto, G.T., Tamò, M., Thunes, K.H. 2024. The use of interval censored data to assess the timing of early field infestation of fall armyworm, *Spodoptera frugiperda* (J. E. Smith) (Lepidoptera, Noctuidae) in maize fields. Crop Protection, 184 <https://doi.org/10.1016/j.cropro.2024.106843>

Hobræk, K.T., **Hjelkrem, A.G.R.**, Bakken, A.K., Borchsenius, B., Mathiesen, H., Forsberg, C.W.M., Sjøgaard, G., Frydenlund, J. 2024. Solkraftverk på jord- og skogareal. NIBIO report, 10(9).

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Hjelkrem, A.G.R., Aamot, H.U., Lillemo, M., Sørensen, E.S., Brodal, G., Russenes, A.L., Edwards, S.G., Hofgaard, I.S. 2022. Weather Patterns Associated with DON Levels in Norwegian Spring Oat Grain: A Functional Data Approach. Plants 11, 73.

Andresen, E.C., **Hjelkrem, A.G.R.**, Bakken, A.K., Andersen, L.F. 2022. Environmental Impact of Feeding with Infant Formula in Comparison with Breastfeeding. International Journal of Environmental Research and Public Health. 19(11), 15.

Kamga, S.F., Ndjomatchoua, F.T., Guimapi, R.A., Klingen, I., Tchawoua, C., **Hjelkrem, A.G.R.**, Thunes, K., Kakmeni, F.M. 2022. The effect of climate variability in the efficacy of the entomopathogenic fungus *Metarhizium acridum* against the desert locust *Schistocerca gregaria*. Scientific Reports. 12(1), 1-15.

Muhammed, N., Persson, T., **Hjelkrem, A.G.R.**, Ruoff, P., Verheul, M. 2022. Life cycle assessment of tomato production for different production strategies in Norway. *Journal of Cleaner Production*. 372, 1-10.

Hjelkrem, A.G.R., Eikemo, H., Le, V.H., Hermansen, A., Nærstad, R. 2021. A process-based model to forecast risk of potato late blight in Norway (The Nærstad Model): model development, sensitivity analysis and Bayesian calibration. *Ecological Modelling*. 450, 1-10.

Hjelkrem, A.G.R., Ficke, A., Abrahamsen, U., Hofgaard, I.S., Brodal, G. 2021. Prediction of Leaf Bloch Disease risk in Norwegian spring wheat based on weather factors and host phenology. *European Journal of Plant Pathology*. 160, 199-213.

Hjelkrem, A.G.R., Geipel, J., Bakken, A.K., Korsæth, A. 2021. A novel dynamic model for estimating nitrogen availability and demand in grass crops harvested for silage production. *In* K T. Astor & I. Dzene, ed., *Sensing – New Insights into Grassland Science and Practice*. Proceedings of the 21 st Symposium of the European Grassland Federation. Hosted by Universität Kassel, Germany. 17-19 May 2021, The Organising Committee of the 21 st Symposium of the European Grassland Federation, Universität Kassel, Grassland Science and Renewable Plant Resources, Witzenhausen, Germany, pp. 172-174.

Hjelkrem, A.G.R., Fagerström, J., Kvalbein, L., Bakken, A.K. 2020. Potential for replacing fossil energy by local PV energy for field and transport work in Norwegian farming. *NIBIO Report*, 6 (160).

Philion, V., Joubert, V., Trapman, M., **Hjelkrem, A.G.R.**, Stensvand, A. 2019. Distribution of the Infection Time of Ascospores of *Venturia Inaequalis*. *Plant Disease*. 104 (2): 465-473.

Sassure, S., Westrum, K., **Hjelkrem, A.G.R.**, Klingen, I. 2019. Effect of three isolates of Pandora neophidis from a single population of *Sitobium avenae* on mortality, speed of kill and fecundity of *S. avenae* and *Rhopalosipum padi* at different temperatures. *Fungal Ecology*, 41 (3), 1-12.

Hjelkrem, A.G.R., Aamot, H.U., Brodal, G., Strand, E.C., Torp, T., Edwards, S.G., Dill-Macky, R., Hofgaard, I.S. 2018. HT-2 and T-2 toxins in Norwegian oat grains related to weather conditions at different growth stages. *European Journal of Plant Pathology*. 151 (2), 501-514.

Johansen, A., **Hjelkrem, A-G.R.** 2018. Livsløpsanalyser av norsk svinekjøttproduksjon med og uten heimeprodusert grassaft som fôr. *NIBIO Rapport*, 4(103).

Bakken, A.K., Daugstad, K., Johansen, A., **Hjelkrem, A-G.R.**, Fystro, G., Strømman, A.H., Korsæth, A. 2017. Environmental impacts along intensity gradients in Norwegian dairy production as evaluated by life cycle assessment. *Agricultural Systems*. 158, 50-60.

Hjelkrem, A-G.R., Höglind, M., van Oijen, M., Schellberg, J., Gaiser, T., Ewert, F. 2017. Sensitivity analysis and Bayesian calibration for testing robustness of the BASGRA model in different environments. *Ecological Modelling*. 359: 80-91.

Persson, T., Eckersten, H., Elen, O., **Hjelkrem, A-G.R.**, Markgren, J., Söderström, M., Börjesson, T. 2017. Predicting deoxynivalenol in oats under conditions representing Scandinavian production regions. *Food Additives and Contaminants, Part A*. 34 (6): 1026-1038.

Hjelkrem, A-G.R., Torp, T., Strand, E., Brodal, G., Aamot, H.U., Nordskog, B., Dill-Macky, R., Edwards, S., Hofgaard, I.S. 2017. DON content in oat grains in Norway related to weather conditions at different growth stages. *European Journal of Plant Pathology*. 148: 577-594.

Korsaeth, A., **Hjelkrem, A.-G.R.** 2016. Livsløpsanalyse (LCA) av dyrking av erter og åkerbønner i Norge. NIBIO Rapport, 2(117).

Hofgaard, I.S., Seehusen, T., Aamot, H.U., Riley, H., Razzaghian, J., Le, V.H., **Hjelkrem, A.-G.R.**, Dill-Macky, R., Brodal, G. 2016. Inoculum Potential of *Fusarium* spp. Relates to Tillage and Straw Management in Norwegian Fields of Sprig Oats. *Frontiers in Microbiology*. 7 (556) 1-15.

Korsaeth, A., Henriksen, T.M., **Roer, A.-G.**, Strømman, A.H. 2014. Effects of regional variation in climate and SOC decay on global warming potential and eutrophication attributable to cereal production in Norway. *Agricultural Systems*. 127: 9-18

Roer, A.-G., Johansen, A., Bakken, A.K., Daugstad, K., Fystro, G., Hammer Strømman, A. 2013. Environmental impacts of combined milk and meat production in Norway according to a life cycle assessment with expanded system boundaries. *Livestock Science*. 155: 384-396

Korsaeth, A., Zimmer Jacobsen, A., **Roer, A.-G.**, Henriksen, T.M., Sonesson, U., Bonesmo, A.O., Skjelvåg, A.O., Hammer Strømman, A. 2013 Environmental life cycle assessment of cereal and bread production in Norway. *Acta Agriculturae Scandinavica, Section A - Animal Science*, 62(4): 242-253 DOI:10.1080/09064702.2013.783619

Roer, A.G., Korsaeth, A., Henriksen, T.M., Michelsen O., Strømman, A.H. 2012. The influence of system boundaries on life cycle assessment of grain production in central southeast Norway. *Agricultural Systems*. 11: 75-84

Thorsen, S.M., **Roer, A.G.**, van Oijen, M. 2010. Modelling the dynamics of snow cover, soil frost and surface ice in Norwegian grasslands. *Polar Research*. 29: 110-126

Roer, A.-G., Olsen, G., Svendsen, J.G.G. 2005. The Tide analysed by Wavelets and classical Fourier methods. *Kart og Plan*, 3:168:184

Populærvitenskapelig:

Hofgaard, I.S., Aamot, H.U., Brodal, G., Lundon, A., Hjelkrem, A.G.R., Lillemo, M., Strand, E. 2019. Hvordan redusere risiko for mykotoksiner i korn? NIBIO POP, 6(40).

Geipel, J., Hjelkrem, A.G.R., Bakken, A.K. 2019. Presisjonsgjødsling i grovfôrproduksjon. Buskap: medlemsblad for Geno, 71(4), 88-89.

Ficke, A., Olsen, A.K.B., Hjelkrem, A.G.R., Nordskog, B., Brodal, G. 2019. Sprøyte eller ikke sprøyte? Varslingsmodeller for soppsykdommer i korn og oljevekster. *Jord og Plantekultur. Forsøk i korn. Olje- og proteinvekster, engfrøavl og potet 2018*. NIBIO bok 1(5), 78-82.

Thesis:

Roer, A.-G. 2010. Application of Bayesian calibration for propagation of uncertainty in dynamic models. Norwegian University of Life Sciences. Philosophiae Doctor Thesis 2010:08

Presentations:

Hjelkrem, A.G.R. 2024. Potensial for å elektrifisere traktorkjøring innen norsk jordbruk. *Teknologidagen på Apelsvoll*, 19. september, Apelsvoll.

- Hjelkrem, A.G.R. 2024. Potensial for å elektrifisere traktorkjøring innen norsk jordbruk. *Workshop jordbruksmaskiner*, 16. oktober, Miljødirektoratet, Oslo.
- Marinov, M. Stensvand, A., Hjelkrem, A.G.R., Jelev, Zvezdomir. 2024. A model to predict spore maturation of *Blumeriella jappii* in cherry. 13th International Epidemiology Workshop, 09-12. April
- Hjelkrem, A.G.R., Hofgaard, I.S. 2024. Nytt DON-varsel på VIPS. *Korn 2024*, 06. mars, Gardermoen.
- Harteveld D.O.C., Børve J., Roer Hjelkrem, A.G. & Stensvand A., 2023 Ascospore release by *Neonectria ditissima* in Norway. *12th International Congress of Plant Pathology*, 20-25 August 2023, Lyon, France
- Hjelkrem, A.G.R., Geipel, J., Bakken, A.G., Korsæth, A. 2021. A novel dynamic model for estimating nitrogen availability and demand in grass crops harvested for silage production. EGF2021, Germany. Oral presentation
- Hjelkrem, A.G.R., 2019. A mathematical model to predict developmental stages in oats. Kortsortiemøte I SafeOats. Ås.
- Stephanie, S., Hjelkrem, A.G.R., Klinge, I., Meadow, R., Holst, N. 2019. Can we improve the natural control of cereals aphids by beneficial fungi? SMARTCROP end Project Seminar. Ås.
- Kvalbein, L., Lereng, I., Hjelkrem, A.G.R., Bakken, A.K., Selj, J.H.K., Fagström, J. Design and technoeconomic optimization of grid connected hybrid PV system for a dairy farm. 2019. 36th European Photovoltaic Solar Energy Conference and Exhibition.
- Stensvand, A., Eikemo, H., Hjelkrem, A.G.R., Phillon, V. IPM Tool: The apple scab model. SMARTCROP End of project seminar, Ås.
- Hofgaard, I. S., Aamot, H.U., Lillemo, M., Brodal, G., Lysøe, E., Almvik, M., Hjelkrem, A. G. R, Åssveen, M., Russenes, A.L., Strand, E., Bjørnstad, Å, Skjinner, H., Gobena, S., Sørensen, E. S., Buraas, T., Ceplitis, A., Henriksen, B., Rodemann, B., Edwards, S. Resistance to *Fusarium langsethiae* in Norwegian oats – SafeOats. Abstract and poster at WMFmeetsIUPAC –the 11th Conference of The World Mycotoxin Forum and the XVth IUPAC International Symposium on Mycotoxins, Belfast, Northern Ireland, 14-16 October 2019.
- Hjelkrem, A.-G.R., Aamot, H.U., Brodal, B., Dill-Macky, R., Edwards, S., Hofgaard, I.S. 2018. Weather conditions associated with mycotoxin accumulation in Norwegian oats. World Mycotoxin Forum. Poster presentation, Amsterdam, Netherland.
- Grignon, G., Gourdain, E., Hjelkrem, A.-G.R., Hofgaard, I.S. 2018. A model to predict *Fusarium graminearum* ascospore risk and DON content in French and Norwegian spring oat. 14th European Fusarium seminar. Poster presentation, Tulln, Austria.
- Hjelkrem, A.-G.R. 2018. En livsløpsanalyse for brød og kornproduksjon. Cerealfagdagen 2018. Oral presentation, Ås, Norway.
- Hjelkrem, A.-G.R., Modeller for varsling av mykotoksiner i havre. Korn 2018. Oral presentation Skedsmo, Norway.

Phillon, V., Joubert, V., Trapman, M., Hjelkrem, A.G.R., Stensvand, A. Temperature response curve and distribution of the infection speed of ascospores of *Venturia inaequalis*. The 12th International Epidemiology Workshop (IEW12), Lillehammer, Norway.

Hjelkrem, A-G.R., Aamot, H.U., Brodal, G., Strand, E., Torp, T., Dill-Macky, R., Edwards, S.G., Nordskog, B., Hofgaard, I.S. 2017. Associations between *Fusarium* mycotoxin accumulations in oats and weather conditions. 1st Mycokey conference, Ghent, Belgium.

Hansen, J.G., Hjelkrem, A-G.R. 2017. Comparison and evaluation of six European late blight risk models – IPMBlight2.0. Euroblight workshop. Oral presentation, Aarhus, Denmark.

Hjelkrem, A-G.R., Torp, T., Strand, E., Brodal, G., Aamot, H.U., Nordskog, B., Dill-Macky, R., Edwards, S., Hofgaard, I.S. 2017. Association between *Fusarium* mycotoxin accumulations in oats and weather conditions. NBFS, NJF Seminar. Oral presentation, Riga, Latvia.

Nordskog, B., Hermansen, A., Le, V.H., Eikemo, H., Hjelkrem, A.G.R., Skog, T.E., Nærstad, R. 2016. The Nærstad model for potato late blight is available on the open source license technology platform VIPs. APS Annual Meeting. Poster, Florida, US.

Hjelkrem, A.G.R., Torp, T., Brodal, G., Aamot, H.U., Nordskog, B., Strand, E., Hofgaard, I.S. 2014. Influence of weather conditions at different plant growth stages on mycotoxin content in oat. NBFS, NJF Seminar. Oral presentation, Helsinki, Finland.

Hofgaard, I., Aamot, H., Hjelkrem, Åsveen, M., Strand, E., Brodal, G., 2014. *Fusarium* species dynamics – Challenges in the development of a strategy to reduce mycotoxins in oats. The 8th conference of The Mycotoxin Forum. Oral presentation, Vienna, Austria.

Hofgaard, I.S., Hjelkrem, A.G.R. 2014. A kind of window-pane analysis of DON and HT2/T2 in oats. LowCost *Fusarium* meetin. Oral presentation, Zurich, Switzerland.

Hofgaard, I.S., Aamot, H., Hjelkrem, A.G.R., Åsveen, M., Strand, E., Brodal, G. 2014. *Fusarium* species dynamics – Challenges in the development of a strategy to reduce mycotoxins in oats. The 8th conference of The World Mycotoxin Forum. Poster, Vienna, Austria.

Roer, A.G., Korsæth, A., Johansen, A., Bakken, A.K., Daugstad, K., Fystro, G., Henriksen, T.M., Strømman, A.H. 2012. The carbon footprint of producing milk, bovine meat and grain under heterogeneous conditions in Norway. LCA Food 2012. Oral presentation, Saint Malo, France

Roer, A.G., Michelsen, O., Henriksen, T.M., Korsæth, A., Strømman, A.H. 2011. LCA of Norwegian agricultural systems. International Society for industrial ecology (ISIE). Poster, California, US

Roer, A.G., Thorsen, S.T., Rafoss, T., van Oijen, M., Almøy, T. 2009. Fine tuning Bayesian calibration for complex systems with application to a snow depth model. Plant and Microbe Adaption to the Cold (PMAC 2009). Oral presentation, Ås

Conference proceedings:

Hansen, J.G., Lassen, P., Hjelkrem, A.G.R., Eikemo, H., Cucak, M., Lee, A., Gaucher, D., Chatot, C., Kessel, G. 2018. Integration of pathogen and host resistance information in existing DSSs – introducing the IPMBlight2.0 approach.

Roer, A.G., Korsæth, A., Johansen, A., Bakken, A.K., Daugstad, K., Fystro, G., Henriksen, T.M., Strømman, A.H. 2012. The carbon footprint of producing milk, bovine meat and grain under heterogeneous conditions in Norway. LCA Food 2012. Oral presentation, Saint Malo, France

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http://isie2011.berkeley.edu/program_posters.html

Winning awards:

Best Poster Award at World Mycotoxin Forum, Amsterdam, Netherland 2018.

Hjelkrem, A.-G.R., Aamot, H.U., Brodal, B., Dill-Macky, R., Edwards, S., Hofgaard, I.S. Weather conditions associated with mycotoxin accumulation in Norwegian oats. World Mycotoxin Forum, Amsterdam, Netherland.