Curriculum Vitae

Name	Eva Brod
Date of birth	13 July 1986
Nationality	German
Mother tongue	German
Other languages	English, Norwegian
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Position

6/2016 – to date	Research Scientist, PhD NIBIO, Norwegian Institute of Bioeconomy Research

Relevant work experience

4/2019 – 7/2019	Research stay University of Copenhagen, Section for Plant and Soil Sciences with supervision by Dr. Sander Bruun
5/2012 – 6/2016	PhD candidate NIBIO, Norwegian Institute of Bioeconomy Research
8/2014 – 1/2015	Research stay Eidgenössische Technische Hochschule, Zürich, Group of Plant Nutrition with supervision by Dr. Astrid Oberson and Prof. Emmanuel Frossard
1/2012 – 5/2012	Research assistant Bioforsk, Norwegian Institute for Agricultural and Environmental Research, Frederik A Dahls Vei 20, 1430 Ås, Norway

Education

5/2012 – 6/2016	Philosophiae Doctor (PhD) Norwegian University of Life Sciences, P.O. Box 5003, 1432 Ås, Norway Supervisors: Prof. Tore Krogstad, Dr. Anne Falk Øgaard, Dr. Trond Knapp Haraldsen, Prof. Daniel Müller
1/2010 – 1/2012	Master of Science in Agroecology Norwegian University of Life Sciences, P.O. Box 5003, 1432 Ås, Norway
8/2006 – 8/2009	Bachelor of Science in Organic Farming and Marketing Hochschule für Nachhaltige Entwicklung, Friedrich-Ebert-Straße 28, 16225 Eberswalde, Germany

Key qualifications

Soil chemistry and plant nutrition
Soil analysis (phosphorus)
Effect of organic waste and wood ash as fertiliser
Characterisation of inorganic phosphorus compounds
Radioisotopes as method in plant nutrition
Organic farming
Material flow analysis

Current projects

1. From blue waste to green resource: Fish sludge as fertiliser in agriculture (2019-2022, Personal postdoctoral scholarship funded by the Norwegian Research Council)
2. Sustainable recycling of organic waste resources in the future bioeconomy (2017-2021, Strategical Institute Program funded by the Norwegian Ministry of Agriculture and Food, project leader and supervision of M.Sc. student)
3. Nutrients in a circular bioeconomy: Barriers & opportunities for mineral phosphorus independence in Norway (MIND-P) (2017-2021, Research project funded by the Norwegian Research Council)

Publications

Journal articles (peer reviewed)

1. **Brod E**, Toven K, Haraldsen TK, Krogstad T (2018) Unbalanced nutrient ratios in pelleted compound recycling fertilizers. *Soil Use and Management*: doi: 10.1111/sum.12407
2. **Brod E**, Oppen J, Kristoffersen AØ, Haraldsen TK, Krogstad T (2017) Drying or anaerobic digestion of fish sludge: Nitrogen fertilisation effects and logistics. *AMBIO* 46(8): 852-864
3. **Brod E**, Bechmann M, Øgaard AF (2017) Løst fosfat i jordbruksavrenning – forskjell mellom driftssystemer. *VANN* 1: 47-56 (in Norwegian)
4. Hamilton HA, **Brod E**, Hanserud O, Müller DB, Brattebø H, Haraldsen TK (2016) Recycling potential of secondary phosphorus resources as assessed by integrating substance flow analysis and plant-availability. *Science of the Total Environment:* doi: 10.1016/j.scitotenv.2016.10.056
5. Øgaard AF, **Brod E** (2016) Efficient phosphorus cycling in food production: Predicting the phosphorus fertilization effect of sludge from chemical wastewater treatment. *Journal of Agricultural and Food Chemistry* 64 (24): 4821-4829
6. **Brod E**, Øgaard AF, Krogstad T, Haraldsen TK, Frossard E, Oberson A (2016) Drivers of phosphorus uptake by barley following secondary resource application. *Frontiers in Nutrition* 3(12): doi: 10.3389/fnut.2016.00012
7. **Brod E**, Øgaard AF, Hansen E, Wragg D, Haraldsen TK, Krogstad T (2015a) Waste products as alternative phosphorus fertiliser. Part I: Inorganic P species affect fertilisation effects depending on soil pH. *Nutrient Cycling in Agroecosystems* 103: 167-185
8. **Brod E**, Øgaard AF, Haraldsen TK, Krogstad T (2015b) Waste products as alternative phosphorus fertiliser. Part II: Predicting P fertilisation effects by chemical extraction. *Nutrient Cycling in Agroecosystems* 103: 187-199
9. Hanserud OS, **Brod E**, Øgaard AF, Müller D, Brattebø H (2015) A multi-regional soil phosphorus balance for exploring secondary fertilizer potential: the case of Norway. *Nutrient Cycling in Agroecosystems* 104: 307–320
10. Hamilton HA, **Brod E**, Hanserud O, Gracey E, Vestrum M, Steinhoff F, Müller D, Brattebø H (2015) Investigating cross-sectoral synergies through integrated aquaculture, fisheries and agricultural phosphorus assessments: A case study of Norway. *Journal of Industrial Ecology*, doi:10.1111/jiec.12324
11. **Brod E**, Haraldsen T, Krogstad T (2014) Combined waste resources as compound fertiliser to spring cereals. *Acta Agriculturae Scandinavica - Section B* 64: 329-340
12. Haraldsen T, **Brod E,** Krogstad T (2014) Optimising the organic components of topsoil mixtures for urban grassland. *Urban Forestry & Urban Greening* 13: 821-830
13. **Brod E,** Haraldsen T, Breland T (2012) Fertilization effects of organic waste resources and bottom wood ash: results from a pot experiment. *Agricultural and Food Science* 21: 332-347

Abstracts, posters etc.

1. **Brod E**, Øgaard AF (2018) Olsen-P can predict the plant-availability of phosphorus in recycling fertilizers. Poster presented at PSP 6 Phosphorus in Soils and Plants 10 – 13 September 2018, Leuven, Belgium
2. **Brod E**, Øgaard AF (2016) Decision tool for predicting P fertilisation effects of secondary resources. Poster presented at 8th International Phosphorus Workshop 12 – 16 September 2016, Rostock, Germany
3. **Brod E** (2016) Fosfor, det nye arvesølvet? Invited speaker at TEKSET – Innovasjon for settefisk 2 – 3 February 2016, Trondheim, Norway (in Norwegian)
4. **Brod E**, Hamilton H, Hanserud O, Haraldsen TK, Müller D (2015) The recycling potential of P in Norwegian secondary resources in a system's context. Reviewed abstract presented at RAMIRAN, 16th International Conference Rural-Urban Symbiosis 8 - 10 September 2015, Hamburg, Germany
5. **Brod E**, Øgaard AF, Haraldsen TK, Krogstad T (2014) How much P in waste is plant-available at different soil pH levels? Poster presented at 5th International Symposium on Phosphorus in Soils and Plants 26 – 29 August 2014, Montpellier, France
6. Hanserud OS, **Brod E**, Brattebø H (2014) A regional-scale soil phosphorus balance for exploring mineral fertilizer substitution potentials – the case of Norway. Abstract presented at 4th Sustainable Phosphorus Summit 1 – 3 September 2014, Montpellier, France

Reports, theses etc.

1. Henriksen TM, Kristoffersen AØ, **Brod E**, Øgaard AF (2019) Nitrogeneffekt av organisk avfall til korn – et forsøk i laboratoriet. NIBIO bok 5(1), 140-145 (in Norwegian)
2. **Brod E** (2018) Manure-based recycling fertilisers – A literature review of treatment technologies and their effect on phosphorus fertilisation effects. NIBIO report 91 (4) 25 p.
3. **Brod E**, Haraldsen TK (2017) Miljøvennlige jordblandinger – klima, resirkulering og bruksområder. NIBIO rapport 151 (3) 40 p. (in Norwegian)
4. Blytt LD, **Brod E**, Øgaard AF, Johannessen E, Estevez MM, Paulsrud B (2017) Bedre utnyttelse av fosfor. Miljødirektoratet rapport M-846 64 p. (in Norwegian)
5. **Brod E**, Haraldsen TK, Krogstad T (2016) Fiskeslam som nitrogengjødsel. Effekt av ulike behandlingsteknologier. NIBIO Rapport 118 19 p. (in Norwegian)
6. **Brod E** (2016) The recycling potential of phosphorus in secondary resources. Doctoral thesis. Ås, Norwegian University of Life Sciences. 37 p. + appendix
7. Haraldsen TK, **Brod E**, Stabbetorp J (2014) Oppkonsentrert biorest som gjødsel til korn. In: Jord- og Plantekultur 2014: 164-173 (in Norwegian)
8. **Brod E**, Haraldsen TK, Krogstad T (2012) Efficiency of combined waste resources as N and P fertiliser to spring cereals. Bioforsk Rapport 184 (7) 31 p.

Popular-scientific dissemination

1. Fenstad A (2020) Disse gjødseltypene kan hindre fosformangel - Den mest klimavennlige gjødselen gir lite fosfor til plantene. Article in *Teknisk Ukeblad Klima* based on interview with **Eva Brod** 10.2.2020 (in Norwegian)
2. Fenstad A (2019) Her gjødsler de åkeren med fiskeskitt – Tester om lakseslam kan erstatte mineralgjødsel. Article in *Teknisk Ukeblad Maritim* based on interview with **Eva Brod**, 13.5. 2019 (in Norwegian)
3. Gulden KT (2017) Ikke mulig å erstatte torven helt. Article in *Nationen* based on interview with **Eva Brod**, 19.2.2018 (in Norwegian)
4. **Brod E**, Haraldsen TK (2017) Oppdrettsnæringen kan bli en viktig gjødselprodusent. *Norsk Fiskeoppdrett* 2: 28-32 (in Norwegian)

5. **Brod E**, Krogstad T (2017) Norsk fiskeslam til gjødseleksport. *Dagens Næringsliv*, 20.7.2017 (in Norwegian)
6. **Brod E**, Hanserud O (2017) Fosfor må brukes smartere. *Økologisk Landbruk* 2: 8-10 (in Norwegian)
7. Gulden KT (2017) Tørket fiskebæsj gir god kornvekst. Article in *Nationen* based on interview with **Eva Brod**, 9.1.2017 (in Norwegian)
8. Gulden KT (2017) Bedre gjødsel og billigere i transport. Article in *Nationen* based on interview with **Eva Brod**, 9.1.2017 (in Norwegian)
9. Petersen M (2017) Tørket fiskeslam gir god gjødselseffekt. Article on *kyst.no* based on interview with **Eva Brod**, 3.1.2017 (in Norwegian)
10. Dybdal SE (2016) Meiner landbruket må satse på resirkulering av fosfor. Article in *Nationen* based on interview with **Eva Brod**, 18.5.2016 (in Norwegian)
11. Jensen PM (2016) Næringen må reguleres enda strengere. Article on *kyst.no* based on interview with **Eva Brod**, 3.2.2016 (in Norwegian)
12. Gulden KT (2015) Oppdrettsnæringen sløser med fosfor. Article in *Nationen* based on interview with **Eva Brod**, 19.10.2015 (in Norwegian)
13. Grønlund A, **Brod E**, Hanserud OS (2015) Potensial for gjenvinning og resirkulering av fosfor. *VANN* 50: 197-200 (in Norwegian)