

# Curriculum vitae

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## Odd Arne Rognli

### Personal:

- Odd Arne Rognli, born Aug 4, 1954 in Bardu, Troms, Norway
- Married to Trine Hvoslef-Eide, 5 children.

### Academic education:

- Cand. agric (1979) in Plant Science at the Agricultural University of Norway, AUN (from 01.01.2005: Norwegian University of Life Sciences, UMB)
- Ph.D. in Genetics and Plant Breeding (1986) at the Agricultural University of Norway

### Positions:

- Agricultural extension service (Gisund Forsøks- og driftsplanring, Troms) 1979-81
- Ph.D.-student (scholarship from National Research Council (NRC) 1981-86
- Research scientist (Post.doc funded by NRC) 1987-92;
- Associate professor at the Department of Biotechnological Sciences, UMB (from 01.01.1999 Department of Chemistry and Biotechnology, from 01.09.2003 Department of Plant and Environmental Sciences) from 1992.
- Professor at the Department of Plant and Environmental Sciences, from 2007

### Research profile:

- Population genetics and evolutionary biology
- Genomics of abiotic stress tolerance, feed quality and seed production in forage grass species
- Natural variation, genetic diversity and adaptation of plants

### Current major research grants:

- Understanding the genetic and physiological basis for adaptation of Norwegian perennial forage crops to future climates (Research Council of Norway) (2010-2014), project leader
- NORFOCGRAN – Nordic Forage Crops Genetic Resource Adaptation Network (Nordforsk) (2011-2013)
- *Festulolium* with improved forage quality and winter survival for Norwegian farming (Research Council of Norway) (2006-2011), project leader
- Phenotypic and molecular characterisation of genetic resources of Nordic timothy (*Phleum pratense* L.) (Nordic Joint Committee for Agricultural Research – NKJ) (2007-2011), project leader

### Current PhD students:

- Wendy Waalen, Project: “Physiology of winter hardiness: A study of the variation among varieties of rapeseed and turnip rapeseed in winter survival and frost tolerance”.
- Chuan Li, Project: “*Brachypodium* as a model for functional genomics studies in forage grasses”
- Sigridur Dalmansdottir, Project: “Understanding the genetic and physiological basis for adaptation of Norwegian perennial forage crops to future climates”
- Helga Amdahl, Project: “Improving seed yield potential in tetraploid red clover (*Trifolium pratense* L.)”

### Former PhD students:

- Minna Nurminiemi, Dr. Scient. 1995, thesis: “Environmental Stability of Nordic Barley Materials”
- Merethe Aasmo-Finne, Dr. Scient. 1996, thesis: “Genetic variation in a Norwegian germplasm collection of white clover (*Trifolium repens* L.)”
- Vibeke Alm, Dr. Scient. 2001, thesis: “Comparative genome analyses of meadow fescue (*Festuca pratensis* Huds.): Genetic linkage mapping and QTL analyses of frost and drought tolerance”
- Cheng Fang, Dr. Scient. 2003, thesis: “Comparative genome analyses, QTL mapping and genetic analyses of seed yield and related traits in meadow fescue (*Festuca pratensis* Huds.)”
- Siri Fjellheim, Dr. Scient. 2004, thesis: “Molecular and phenotypic characterisation of Nordic meadow fescue (*Festuca pratensis* Huds.) with a view on phylogeographic history”.
- Elameen Abdelhameed Ali Saeed Taha, 2009: “Phenotypic and molecular diversity of clonal germplasm collections of roseroot (*Rhodiola rosea* L.) and sweet potato (*Ipomoea batatas* (L.) Lam)”.

- Anna Monica Lewandowska-Sabat, 2010: “Vernalization and photoperiodic regulation of flowering time and population genetic structure of Norwegian populations of *Arabidopsis thaliana*”.
- Simen Rød Sandve, 2010: “Genes and molecular mechanisms involved in freezing tolerance in Pooideae grasses; An evolutionary perspective”.

#### **Member of PhD evaluation committees**

- Dr. Scient.-degree: Abebe Demisse, Department of Horticulture and Crop Sciences, UMB: “Morphological and molecular markers diversity in Ethiopian landrace barleys: implications to *in situ* and *ex situ* conservation of landrace materials”, 12.06.96
- Dr. Scient.-degree: Kåre Magne Nielsen, Institute of Botany, The Norwegian University for Science and Technology, Trondheim: “An evaluation of possible horizontal gene transfer from plants to soil bacteria by studies of natural transformation in *Acinetobacter calcoaceticus*”, 10.09.97
- PhD degree: James Cockram, John Innes Centre, Crop Genetics, 2003
- PhD degree: Weston Fredrick Mwase, Norwegian University of Life Sciences (UMB): “Characterisation of genetic diversity of *Uapaca kirkiana* Muell. Arg using morphological traits and molecular markers”, 23.11.2007
- PhD degree: Fetien Abay Abera, Norwegian University of Life Sciences (UMB): “Diversity, adaptation and G x E interaction of barley (*Hordeum vulgare* L.) varieties in Northern Ethiopia”, 29.06.2007
- PhD degree: Andargachew Gebedo Abitea, Norwegian University of Life Sciences (UMB): “Indigenous Knowledge and Genetic Diversity of Cultivated Amochi (*Arisaema schimperianum* Schott)”, 11.12.2007
- PhD degree: Berhanu Abate Jember, Norwegian University of Life Sciences (UMB): “Variability of traits in maize under stress and non-stress environments (moisture and nitrogen) and heterotic effect of maize genotypes for moisture stress areas”, 25.08.2008
- PhD degree: Solomon Eyob Ferenje, Norwegian University of Life Sciences (UMB): “Potential of Korarima (*Aframomum corrorima* (Braun) P.C.M. Jansen) as a crop plant in Southern Ethiopia”, 24.04.2009
- PhD degree: Nadeem Yaqoob, Norwegian University of Life Sciences (UMB): “Local and systemic defence responses in trees against pathogenic fungi: Differences revealed at the transcriptional level”, 23.08.2011

#### **Internal elected positions and committees:**

- Deputy Head of department 1996-1998
- Head of department 1999-2001
- Head of Genetics Division 1996-2002
- Head of Research Committee at the Department of Plant and Environmental Sciences, 2004-
- Member of the Research Committee at UMB
- Head of the FUGE-NARC (Norwegian Arabidopsis Research Centre) activity at UMB ([www.UMB.no/research/narc](http://www.UMB.no/research/narc))
- Associate member of CIGENE (Centre for Integrative Genetics) ([www.cigene.no](http://www.cigene.no)).
- Member of 5 PhD evaluation committees the last 5 yrs

#### **External committees:**

- Editorial board of Plant Breeding
- Associate editor of Plant Biology International
- National representative to EPSO (European Plant Science Organization)
- Member of the National Committee on the Ethics of Science and Technology (NENT) 1997-2000
- Norwegian representative on EPSO (European Plant Science Organization)
- Member of the Advisory Board of the EU-funded Centre of Excellence in Plant Agrobiolgy and Molecular Genetics (PAGEN), Poznan, Poland, 2003-2006 ([www.pagen.poznan.pl](http://www.pagen.poznan.pl))
- Member of the International Scientific Board of the International Symposiums “Molecular Breeding of Forage and Turf”

#### **Reviewing work:**

Plant Breeding, Theoretical and Applied Genetics, Molecular Ecology, Plant Genetic Resources, Molecular Genetics and Genomics, Plant Biotechnology Journal, Annals of Botany, New Phytologist, Bioresource Technology, Canadian Journal of Botany, Environmental Biosafety Research, Euphytica, Grass and Forage Science, Crop Science, Plant Genetic Resources, Heredity, Euphytica, Molecular Breeding, Plant Pathology, Molecular Biotechnology.

#### **Reviewing grant proposals:**

- The United States - Israel Binational Agricultural Research and Development Fund (BARD, US)
- Biotechnology and Biological Sciences Research Council (BBSRC, UK)
- Research Council of Norway (RCN)
- The Swedish Research Council (Formas)
- The Netherlands Organisation for Scientific Research (NWO)

#### Guest research:

- Institute of Grassland and Environmental Research, 1983 (2 months)
- John Innes Centre, Cereals Research Dept. (Dr. M.D. Gale), 1991-92
- John Innes Centre, Comparative Genetics Unit (Dr. M.D. Gale), 2002-2003
- JSPS Fellowship, Japan, March 2004
- China Agricultural University, August 2006
- University of Minnesota, St Paul (from Aug 2009-Sept 2010)

#### Professional membership:

- Member of the Genetical Society of Britain
- EUCARPIA – European Association for Plant Breeding Research
- Nordic Association of Agricultural Scientists (NJF)

#### Publications (last 5 yrs):

- Lewandowska-Sabat AM, Winge P, Fjellheim S, Dørum G, Bones AM, Rognli OA (2011) Genome wide transcriptional profiling of acclimation to photoperiod in high-latitude accessions of *Arabidopsis thaliana*. Plant Sci. doi:10.1016/j.plantsci.2011.10.009
- Waalén W, Tanino K, Olsen JE, Eltun R, Rognli OA, Gusta LV (2011) Differences in frost tolerance within cultivars of *Brassica rapa* and *B. napus* are revealed by a prolonged freeze test and shoot regrowth, in contrast to a short-term freeze test. Crop Sci 51:1988-1996
- Alm V, Busso CS, Ergon Å, Rudi H, Larsen A, Humphreys MW, Rognli OA (2011) QTL analyses and comparative genetic mapping of frost tolerance, winter survival and drought tolerance in meadow fescue (*Festuca pratensis* Huds.). Theor Appl Genet 123:369–382
- Heidari B, Matre P, Nemie-Feyissa D, Meyer C, Rognli OA, Møller SG, Lillo C (2011) Protein phosphatase 2A B55 and A regulatory subunits interact with nitrate reductase and are essential for nitrate reductase activation. Plant Physiology 156:165-172
- Bartoš J, Sandve SR, Kölliker R, Kopecký D, Němcová P, Stočes S, Kilian A, Rognli OA, Doležel J (2011) Genetic mapping of DArT markers in the *Festuca-Lolium* complex and their use in freezing tolerance association analysis. Theor Appl Genet 122:1133–1147.
- Sandve SR, Kosmala A, Rudi H, Fjellheim S, Rapacz M, Yamada T, Rognli OA (2011) Molecular mechanisms underlying frost tolerance in perennial grasses adapted to cold climates. A review. Plant Science 180: 69-77
- Rudi H, Sandve SR, Opseth LM, Larsen A, Rognli OA (2011) Identification of candidate genes important for frost tolerance in *Festuca pratensis* Huds. by transcriptional profiling. Plant Science 180:78-85.
- Elameen A, Larsen A, Klemsdal SS, Fjellheim S, Sundheim S, Msolla S, Masumba E, Rognli OA (2011) Phenotypic diversity of plant morphological and root descriptor traits within a sweet potato (*Ipomoea batatas* (L.) Lam) germplasm collection from Tanzania. Genet Resour Crop Evol 58:397-407.
- Lewandowska-Sabat AM, Fjellheim S, Rognli OA (2010) Extremely low genetic variability and highly structured local populations of *Arabidopsis thaliana* at higher latitudes. Mol Ecol 19: 4753-4764
- Sandve SR, Rudi H, Dørum G, Berg PR, Rognli OA (2010) High throughput genotyping of unknown genomic terrain in complex plant genomes; lessons from a case study. Mol Breeding 26:711–718.
- Rognli OA, Saha MC, Bhamidimarri S, van der Heijden S (2010) Fescues. In 'B. Boller et al. (eds.), Fodder Crops and Amenity Grasses, Handbook of Plant Breeding 5, DOI 10.1007/978-1-4419-0760-8\_11, Springer Science+Business Media, pp 261-292
- Sandve SR, Rudi H, Dørum G, Vigeland MD, Berg PR, Rognli OA (2010) Genotyping Unknown Genomic Terrain in Complex Plant Genomes. In C. Huyghe (ed.), Sustainable Use of Genetic Diversity in Forage and Turf Breeding, DOI 10.1007/978-90-481-8706-5\_67, Springer Science+Business Media B.V. 2010, pp 455-459
- Kopecký D, Bartoš J, Lukaszewski AJ, Baird JH, Cernoch V, Kölliker R, Sandve SR, Rognli OA, Blois H, Caig V, Doležel J, Kilian A (2010) DarTFest – A Platform for High-Throughput Genome Profiling Within the *Festuca-Lolium* Complex. In C. Huyghe (ed.), Sustainable Use of Genetic Diversity in Forage and Turf Breeding, DOI 10.1007/978-90-481-8706-5\_67, Springer Science+Business Media B.V. 2010,

- Kjos M, Fjellheim S, Rognli OA, Hvoslef-Eide T (2010) Amplified fragment length polymorphism (AFLP) markers for fingerprinting of *Argyranthemum frutescens* cultivars. *Scientia Horticulturae* 124: 506-510
- Kopecký D, Bartoš J, Lukaszewski AJ, Baird JH, Černoč V, Kölliker R, Rognli OA, Blois H, Caig V, Lübberstedt T, Studer B, Doležel J, Kilian A (2009) Development and mapping of DArT markers within the *Festuca-Lolium* complex. *BMC Genomics* 10: 473 doi:10.1186/1471-2164-10-473
- Fjellheim S, Pasakinskiene I, Grønnerød S, Paplauskiene V, Rognli OA (2009) Genetic Structure of Local Populations and Cultivars of Meadow Fescue from the Nordic and Baltic Regions. *Crop Sci.* 49:200-210
- Elameen A, Klemsdal SS, Dragland S, Fjellheim S, Rognli OA (2008) Genetic diversity in a germplasm collection of roseroot (*Rhodiola rosea*) in Norway studied by AFLP. *Biochemical Systematics and Ecology* 36:706–715
- Sandve SR, Rudi H, Asp T, Rognli OA (2008) Tracking the evolution of a cold stress associated gene family in cold tolerant grasses. *BMC Evolutionary Biology* 8:245 doi:10.1186/1471-2148-8-245
- Darginaviciene D, Pasakinskiene I, Gemir M, Rognli OA, Sigita J, Vaidevutis S, Nijole B (2008) Changes in plasmalemma K<sup>+</sup>Mg<sup>2+</sup>-ATPase activity and H<sup>+</sup> transport in relation to freezing tolerance and seasonal growth of *Festuca pratensis* in the field. *Journal of Plant Physiology* 165: 825-832
- Elameen A, Fjellheim S, Larsen A, Rognli OA, Sundheim L, Msolla S, Masumba E, Mtunda K, Klemsdal SS (2008). Analysis of genetic diversity in a sweet potato (*Ipomoea batatas* L.) germplasm collection from Tanzania as revealed by AFLP. *Genet Resour Crop Evol* 55:397-408
- Fjellheim S, Blomlie ÅB, Marum P, Rognli OA (2007) Phenotypic variation in local populations and cultivars of meadow fescue – potential for improving cultivars by utilizing wild germplasm. *Plant Breeding* 126: 279-286
- Saski C, Lee SB, Fjellheim S, Guda C, Jansen RK, Luo H, Tomkins J, Rognli OA, Daniell H, Clarke JL (2007) Complete chloroplast genome sequences of *Hordeum vulgare*, *Sorghum bicolor* and *Agrostis stolonifera*, and comparative analyses with other grass genomes. *Theor Appl Genet* 115:571-590
- Rognli OA 2007. Genetic analysis of seed yield components. In 'Proceedings of the XXVII'th EUCARPIA Symposium on Improvement of Fodder Crops and Amenity Grasses', Denmark, August 19-23, 2007, Copenhagen, Denmark, pp 83-87, [www.eucarpia.org/01sections/foddercrops/section\\_meetings2/sm2.html](http://www.eucarpia.org/01sections/foddercrops/section_meetings2/sm2.html).