



Jobbnoorge ID: 278527

Deadline: 4/23/2025

Website: <http://www.nmbu.no>

Scope: Fulltime

Duration: Fixed Term

Are you passionate about sustainable agriculture and cutting-edge plant genomics?

PhD scholarship within plant genomics to improve nitrogen use efficiency in perennial ryegrass

About the position

The Department of Plant Sciences Faculty of Biosciences at the Norwegian University of Life Sciences (NMBU) has a vacant 3-year PhD-position related to improving Nitrogen Use Efficiency (NUE) in perennial ryegrass for sustainable farming.

Perennial ryegrass is widely cultivated across Norwegian farms and is vital for livestock feeding. However, excessive nitrogen fertilization contributes to severe environmental concerns, including nitrate pollution and greenhouse gas emissions. This project addresses these issues by utilizing advance genomics, phenomics and data models to improve perennial ryegrass cultivars with enhanced NUE to significantly reduce fertilizer inputs, mitigate environmental impacts, and promote sustainable agricultural practices.

The project uniquely integrates field trials, advanced phenomics (e.g., drone imaging, IoT sensors), genomics, and innovative CRISPR-Cas9 genome editing methods. The candidate will utilize these interdisciplinary approaches to uncover genetic mechanisms controlling NUE in perennial ryegrass.

The successful candidate will work within a multidisciplinary team dedicated to resolving critical sustainability challenges in agriculture through innovation and cutting-edge technology.

The applicant is made aware that an application for a PhD position at NMBU is at the same time an application for admission to a PhD programme at the institution. The documentation that is necessary to ensure that the admission requirements are met must be uploaded as an attachment.

Main tasks

- Conduct field trials and controlled hydroponic experiments to identify perennial ryegrass varieties with superior NUE.
- Perform GWAS and transcriptomic analyses to elucidate molecular mechanisms involved in nitrogen uptake and metabolism.
- Validate key genes responsible for nitrogen utilization using genome editing (CRISPR-Cas9).

The successful candidate is expected to enter a plan for the progress of the work towards a PhD degree during the first months of the appointment, with a view to completing a doctorate within the PhD scholarship period.

Competence

The successful applicant must meet the conditions defined for admission to a PhD programme at NMBU. The applicant must have an academically relevant education corresponding to a five-year master's degree or a cand.med.vet. degree, with a learning outcome corresponding to the descriptions in the Norwegian Qualification Framework, second cycle. The applicant must have a documented strong academic background relevant to the position and be able to document proficiency in both written and oral English. For more detailed information on the admission criteria please see the [PhD Regulations and the relevant PhD programme description](#).

The applicant must document expertise and interest in the research subject.

Required Academic qualifications

- Master's degree in plant science, plant biology, plant genetics, computational biology, or a similar field.
- Good scientific writing skills in English.
- Experience with computer programming, preferably in R or Python
- Candidates finishing their education within the spring of 2025 can also apply but must provide documentation of their degree before employment.

The following experiences and skills will be emphasized:

- Knowledge in plant genetics
- Experience with hydroponics systems
- Knowledge and practical experience related to Nitrogen Use Efficiency
- Experience with handling large sequencing datasets and using R and other relevant bioinformatics tools.
- Experience with lab work particularly molecular methods such as DNA, RNA extraction, qPCR and cloning.

- Experience with plant transformation using cell culture or other relevant methods.

You need to:

- Be motivated to learn new skills and methods
- Be able to work independently and collaboratively
- Strong communication and cooperation skills.
- Proactive attitude towards problem-solving.

Remuneration and further information

The position is placed in government pay scale position code 1017 PhD. Fellow. PhD. Fellows are normally placed in a pay grade of 536 200NOK per year (Statens lønnstabell) on the Norwegian Government salary scale upon employment and follow ordinary meriting regulations.

Employment is conducted according to national guidelines for University and Technical College PhD scholars.

For further information, please contact Dr. Mallikarjuna Rao Kovi, Research Scientist

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[Information for PhD applicants](#) and [general information to applicants](#)

Application

To apply online for this vacancy, please click on the 'Apply for this job' button above. This will route you to the University's Web Recruitment System, where you will need to register an account (if you have not already) and log in before completing the online application form.

Application deadline: 23.04.2025

Your CV must be entered in JobbNorge's CV form and not just included as an attachment. This is to be able to comply with the regulations of §15 of the Public Administration Act.

In the application, the candidate must confirm that information and documentation (in the form of attachments) submitted via the job application can also be used by NMBU in a possible admission process.

Applicants invited for an interview are expected to present original diplomas and certificates.

The following documents must be attached to the application:

- Motivation letter (maximum 1 page)
- Complete CV
- Certified copies of academic diplomas and certificates. (i.e. Diploma, transcript. Diploma supplement for both bachelor and master). Diplomas, transcripts and diploma supplements that are not in Norwegian or English must be uploaded in the original language. An English translation of these documents must also be attached.
- Applicants from universities outside Norway are kindly requested to send a diploma supplement, or a similar document, which describes in detail the study program and grading system.
- Documentation of proficiency in written and oral English in accordance with [NMBU PhD regulation section 5-2 \(3\)](#).
- Names and contact details for two references

Additional relevant documentation of professional knowledge (for example, list of scientific works). If it is difficult to judge the applicant's contribution for publications with multiple authors, a short description of the applicant's contribution must be included.

About The Faculty of Biosciences

The Faculty of Biosciences (BIOVIT) aims to shape the future of food and bioproduction through teaching and research in biology and sustainable production and use of plants, livestock and fish. The faculty has a large project portfolio and an annual turnover of approximately NOK 250 million.

BIOVIT is organized into seven research groups: Genome Biology, Breeding, Genetics and Food Production Systems, Ruminant Nutrition and Physiology, Ethology and Animal Welfare, Nutrition and Physiology for Monogastric Animals, Plant Biology, Sustainable Food Systems and Integrated Plant Protection, and Genetics, Evolution and Sustainable Plant Production. Additionally, the faculty has seven research support and laboratory units.

BIOVIT is responsible for bachelor's and master's programs in aquaculture, biology, animal science, and plant science, as well as English-language master's programs in Agroecology, Plant Sciences, Feed Manufacturing Technology, and Genome Sciences. BIOVIT also offers Ph.D. programs in animal science and plant science. Currently, the faculty has about 550 bachelor's and master's students and 90 Ph.D. students. BIOVIT employs approximately 230 staff members and has its own faculty administration.

The Norwegian University of Life Sciences (NMBU)

NMBU will contribute to securing the future of life through outstanding research, education, communication and innovation. We have the country's most satisfied university students, who receive research-based education in a unique student environment. Our graduates gain a high level of competence in interdisciplinary collaboration and are popular in the labor market.

NMBU has internationally leading research environments in several subjects. Together with our partners in society and business, we contribute to solving some of the biggest societal challenges of our time. We focus on innovation, communication and entrepreneurship because we

believe these challenges are best solved with joint efforts. We believe that a good working environment is characterized by diversity. If necessary, workplace adaptations will be made for persons with disabilities. More information about NMBU is available at www.nmbu.no/en

Additional information

Contact person:

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