

***Dr. Khadim Dawar***

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***Curriculum vitae***

Department of Soil and environmental Sciences,  
Khyber Pakhtunkhwa Agricultural University Peshawar,  
Pakistan

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***Email: khadimdawar@yahoo.com***

## **Qualifications**

**2011 Doctorate in Plant Biology**

*University of Canterbury, New Zealand*

- Thesis: "The impacts of urease inhibitor and method of application on the bioavailability of urea fertiliser in ryegrass (*Lolium perenne* L.)"
  - Research compared the bioavailability of the granular form of various nitrogen fertilisers with fine particle application on bovine pasture crop production and gaseous losses via NH<sub>3</sub> and N<sub>2</sub>O emissions, both with and without the inclusion of urease inhibitor, providing fundamental data on the relatively new technology of fine particle application and its economic value
  - Methodology included tracking the hydrolysis, movement and dispersion of urea in the soil, and measuring the greenhouse gas emissions
  - Field and laboratory research utilised an absorption colorimeter, QuantiChrom urea assay kit, and the Kissel et al quantitative active flow method and Saggart et al static chamber method, and relied on external laboratories for the use of a CNS-2000 Carbon Nitrogen Sulphur elemental analyser, Dumass elemental analyser, isotope mass spectrometer and atomic absorption spectroscope
  - Data management included the general linear model, regression modelling, multiple linear regressions and Pearson's correlation, and the factorial experimental design included analysis of variance and least significant difference values, utilising Minitab, GenStat, Sigma Plot and Excel
  - The doctoral research is expected to generate 4 papers
- Awarded a three-year University of Canterbury Doctoral Scholarship and a one-year extension, and a School of Biological Sciences Research Writing Scholarship for academic excellence

**2006 Master of Soil and Environmental Sciences with First Class Honours**

*North-West Frontier Province Agricultural University, Peshawar, Pakistan*

- Thesis: "Fertilizer use efficiency and corn yield as influenced by urease and nitrification inhibitors and compost"
  - Research tracked urea hydrolysis and compared the corn yield in plots with and without urease inhibitor, nitrification inhibitor and compost, contributing to the introduction of urease and nitrification inhibitors in commercial crop farming in Pakistan
  - Field and laboratory research utilised an absorption colorimeter, ultraviolet-visible spectrophotometer, mass spectrophotometer, gas chromatograph, chemiluminescence analyser, photoelectric flame photometer, Kjeldahl apparatus, atomic absorption spectroscope, pH meter and conductivity meter, and included calibration and standardisation of instruments
  - The factorial experimental design included analysis of variance and least significant difference values, and utilised Minitab, Sigma Plot and Excel
- Awarded a four-year Government Tribal Area Student Scholarship

**2004 Honours Bachelor of Science in Agriculture**

*University of Arid Agriculture, Rawalpindi, Pakistan*

- Research project investigated the effect of mulching on wheat crop yield
- Awarded a four-year Government Tribal Area Student Scholarship

## Academic Outputs

### • Journal

- Dawar, K., Zaman, M., Rowarth, J. S., Blennerhassett, J. D., Turnbull, M. H., (2011). Urease inhibitor (NBPT) reduces N losses and improves bioavailability of urea applied in fine particle and granular forms under field conditions. *Agriculture, Ecosystems and Environment*. 144, 41-50.
- Dawar, K., Zaman, M., Rowarth, J. S., Blennerhassett, J. D., Turnbull, M. H., (2011). Urea hydrolysis and lateral and vertical movement in the soil: effects of urease inhibitor and irrigation. *Biology and Fertility of Soils*. 47, 139-146.
- Dawar, K., Zaman, M., Rowarth, J. S., Blennerhassett, J. D., Turnbull, M. H., (2010). The impact of urease inhibitor on the bioavailability of nitrogen in urea and in comparison with other nitrogen sources in ryegrass (*Lolium perenne* L.). *Crop & Pasture Science*. 61, 214–221.
- Dawar, K., Zaman, M., Rowarth, J. S., Blennerhassett, J. D., Turnbull, M. H., (2011). Applying urea with urease inhibitor N-(n-butyl) thiophosphoric triamide in fine particle application on N uptake in ryegrass (*Lolium perenne* L.). *Soil Science and Plant Nutrition*. (In press).
- Dawar, K., I. Khan, S. Khan, M.I. Khan.2011. Effect of urea with or without urease inhibitor (NBPT) and herbicide on maize yield. *Pak. J. Weed Sci. Res.* 17(2): 207-213.
- Dawar, K., I. Khan, S. Khan, M.I. Khan.2011. The impact of urease inhibitor (NBPT) and herbicide on wheat yield and quality. *Pak. J. Weed Sci. Res.* 17(2): 187-194.
- Khan, I., K. B. Marwat, I. A. Khan, H. Ali, H. Khan, **K. Dawar**. 2011. Invasive weeds of southern districts of Khyber Pakhtunkhwa, Pakistan. *Pak. J. Weed Sci. Res.* 17(2): 161-172.
- Khan, I., K. B. Marwat, **K. Dawar**, I. A. Khan, H. Ali, S. Ali, 2011. Ethnobotanical studies of invasive weeds of southern districts of Khyber Pakhtunkhwa, Pakistan. *Pak. J. Weed Sci. Res.* (in press).

### • Conference

- Dawar, K., Zaman, M., Rowarth, J. S., Blennerhassett, J. D., Turnbull, M. H., (2009). The impact of urea, applied in fine particle application with or without urease inhibitor (NBPT), on nitrogen uptake of ryegrass (*Lolium perenne* L.). Poster presentation at ComBio-2009, Full Abstract in Published Proceedings, Research).
- Dawar, K., Zaman, M., Rowarth, J. S., Blennerhassett, J. D., Turnbull, M. H. (2008). Comparison of granular versus fine particle application of urea with or without urease inhibitor on N response in ryegrass. *Soils 2008*, December 1-5, Massey University, Palmerston North, NZ. [Conference Contribution - Poster, Research]
- Dawar, K., Zaman, M., Rowarth, J. S., Blennerhassett, J. D., Turnbull, M. H. (2008). Comparison of granular versus fine particle application of urea with or without urease inhibitor on N response in ryegrass. *Soils 2008* December 1-5, Massey University, Palmerston North, NZ. Australian Society of Soil Science Inc. [Conference Contribution - Full Abstract in Published Proceedings, Research]

**Khadim Dawar**

• **Oral Presentation**

Dawar, K., Zaman, M., Rowarth, J. S., Blennerhassett, J. D., Turnbull, M. H. (2006) Agronomic, Chemical and Biochemical Studies of the Optimisation of Ryegrass Response to Urea and Other Fertilisers. ABCD "Abstracts Annual Biology Colloquium for Doctoral Students". School of Biological Sciences College of Science University of Canterbury Christchurch New Zealand. 1 December (Oral Presentation)

Dawar, K., Zaman, M., Rowarth, J. S., Blennerhassett, J. D., Turnbull, M. H. (2007) Effect of fertilizer types on N uptake and pasture dry matter yield under optimum conditions. ABCD "Abstracts Annual Biology Colloquium for Doctoral Students". School of Biological Sciences College of Science University of Canterbury Christchurch New Zealand. 26 October (Oral Presentation)

Dawar, K., Zaman, M., Rowarth, J. S., Blennerhassett, J. D., Turnbull, M. H. (2008). Comparison of granular versus fine particle application of urea with or without urease inhibitor on response in ryegrass. ABCD "Abstracts Annual Biology Colloquium for Doctoral Students". School of Biological Sciences College of Science University of Canterbury Christchurch New Zealand. 26 October (Oral Presentation)

Dawar, K., Zaman, M., Rowarth, J. S., Blennerhassett, J. D., Turnbull, M. H. (2009). The impact of urea, applied in fine particle application with or without urease inhibitor (nBPT), on nitrogen uptake of ryegrass. ABCD "Abstracts Annual Biology Colloquium for Doctoral Students". School of Biological Sciences College of Science University of Canterbury Christchurch New Zealand. perenne L.) ABC "Abstracts Annual Biology Conference". School of Biological Sciences College of Science University of Canterbury Christchurch New Zealand. 22 October (Oral Presentation)

**Professional Societies**

- Member of the New Zealand Society of Plant Biologists
- Member of the NZ Institute of Agricultural & Horticultural Science
- Member of the Australian Society of Plant Scientists
- Member of the New Zealand Microbiology Society
- Member of the Soil Science Society of Pakistan

**Field of specialization**

- Soil Fertility and Plant Nutrition
- Soil Microbiology and Biochemistry
- Soil Chemistry
- Environmental Science
- Plant physiology
- Plant Botany

### ***Field of Interest***

- Soil Science.
- Environmental Science
- Soil Fertility and Plant Nutrition Losses
- Soil Microbiology and Biochemistry
- Soil Chemistry
- Methods of Soil and Plant Analysis
- Basic Crop Physiology
- General Botany
- Plant Ecology

### ***Computer Knowledge***

Can successfully operate most of the computer software's and can work online used in applied research and office automation i.e. statistical packages, word processors, spreadsheets and graphic packages etc. Full command on MS Office (MS Word, Excel and Power point) and internet.

### ***Personal background***

Full name: Khadim Muhammad Dawar. Born 4 August 1978. Married with 2 children. Excellent health. Interests include cricket, badminton, fishing and gardening.

## **Referees**

Professor Matthew Turnbull  
School of Biological Sciences  
University of Canterbury  
Christchurch  
New Zealand  
*Main doctoral thesis supervisor*

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