

Prof. Dr. Klaus Dittert

Publikationen in begutachteten Zeitschriften und begutachteten Tagungsbänden.

2018

Chen, Q.; Wang, Z.-L.; Zou, C.B.; Fan, Y.; **Dittert, K.** & Lin, S. (2018) Legacy effects of historical grazing affect the response of vegetation dynamics to water and nitrogen addition in semi-arid steppe. *Applied Vegetation Science*.

Guo, L.; Liu, M.J.; Zhang, Y.A.; Tao, Y.Y.; Zhang, F.; Li, G.Y.; **Dittert, K.** & Lin, S. (2018) Yield differences get large with ascendant altitude between traditional paddy and water-saving ground cover rice production system. *Eur. J. Agron.* 92, 9-16.

Jákli, B.; Hauer-Jákli, M.; Böttcher, F.; Meyer zur Müdehorst, J.; Senbayram, M. & **Dittert, K.** (2018) Leaf, canopy and agronomic water-use efficiency of field-grown sugar beet in response to potassium fertilization. *Journal of Agronomy and Crop Science* 204, 99-110.

Köbke, S.; Senbayram, M.; Pfeiffer, B.; Nacke, H. & **Dittert, K.** (2018) Post-harvest N₂O and CO₂ emissions related to plant residue incorporation of oilseed rape and barley straw depend on soil NO₃⁻ content. *Soil and Tillage Research* 179, 105-113.

Suriyagoda, L.D.B.; **Dittert, K.** & Lambers, H. (2018) Mechanism of arsenic uptake, translocation and plant resistance to accumulate arsenic in rice grains. *Agriculture Ecosystems & Environment* 253, 23-37.

2017

Chen, Q.; Hooper, D.U.; Li, H.; Gong, X.Y.; Peng, F.; Wang, H.; **Dittert, K.** & Lin, S. (2017) Effects of resource addition on recovery of production and plant functional composition in degraded semiarid grasslands. *Oecologia* 184, 13-24.

Dittert, K. & Bürkert, A. (2017) Spezielle Probleme der Düngung. In *Ökologische Landwirtschaft*. Eds. M Wachendorf, A Bürkert and R Graß. pp. 338-351. Verlag Eugen Ulmer, Stuttgart, Germany.

Jakli, B.; Tavakol, E.; Tränkner, M.; Senbayram, M. & **Dittert, K.** (2017) Quantitative limitations to photosynthesis in K deficient sunflower and their implications on water-use efficiency. *Journal of Plant Physiology* 209, 20-30.

Ruser, R.; Fuss, R.; Andres, M.; Hegewald, H.; Kesenheimer, K.; Köbke, S.; Rabiger, T.; Quinones, T.S.; Augustin, J.; Christen, O.; **Dittert, K.**; Kage, H.; Lewandowski, I.; Prochnow, A.; Stichnothe, H. & Flessa, H. (2017) Nitrous oxide emissions from winter oilseed rape cultivation. *Agriculture, Ecosystems & Environment* 249, 57-69.

Wu, D.; Senbayram, M.; Well, R.; Brüggemann, N.; Pfeiffer, B.; Loick, N.; Stempfhuber, B.; **Dittert, K.** & Bol, R. (2017) Nitrification inhibitors mitigate N₂O emissions more effectively under straw-induced conditions favoring denitrification. *Soil Biology & Biochemistry* 104, 197-207.

2016

Avenhaus, U.; Cabeza, R.A.; Liese, R.; Sulieman, S.; Lingner, A.; **Dittert, K.**; Salinas-Riester, G.; Pommerenke, C. & Schulze, J. (2016) Short-term molecular acclimation processes of legume nodules to increased external oxygen concentration. *Frontiers in Plant Science* 6, 1133.

Gong, X.Y.; Giese, M.; **Dittert, K.**; Lin, S. & Taube, F. (2016) Topographic influences on shoot litter and root decomposition in semiarid hilly grasslands. *Geoderma* 282, 112-119.

Jákli, B.; Tränkner, M.; Senbayram, M. & **Dittert, K.** (2016): Adequate supply of potassium improves plant water-use efficiency but not leaf water-use efficiency of spring wheat. *J. Plant Nutr. Soil Sci.* 179, 733-745.

Tränkner, M.; Jakli, B.; Tavakol, E.; Geilfus, C.M.; Cakmak, I.; **Dittert, K.** & Senbayram, M. (2016) Magnesium deficiency decreases biomass water-use efficiency and increases leaf water-use efficiency and oxidative stress in barley plants. *Plant Soil* 406, 409-423.

Wiesler, F.; Hund-Rinke, K.; Gäth, S.; George, E.; Greef, J.M.; Hölzle, L.E.; Holz, F.; Hülsbergen, K.J.; Pfeil, R.; Severin, K.; Frede, H.G.; Blum, B.; Schenkel, H.; Horst, W.; **Dittert, K.**; Ebertseder, T.; Osterburg, B.; Philipp, W. & Pietsch, M. (2016) Use of organic fertilizers and organic wastes in agriculture. *Berichte über Landwirtschaft – Zeitschrift für Agrarpolitik und Landwirtschaft* 94: 1-25, doi: <http://dx.doi.org/10.12767/buel.v94i1.124.g251>

2015

Cabeza, R.A.; Liese, R.; Fischinger, S.A.; Sulieman, S.; Avenhaus, U.; Lingner, A.; Hein, H.; Koester, B.; Baumgarten, V.; **Dittert, K.** & Schulze, J. (2015) Long-term non-invasive and continuous measurements of legume nodule activity. *Plant Journal* 81, 637-648.

- Gong, X.Y.; Fanselow, N.; **Dittert, K.**; Taube, F. & Lin, S. (2015) Response of primary production and biomass allocation to nitrogen and water supplementation along a grazing intensity gradient in semiarid grassland. *Europ J Agronomy* 63. *Eur. J. Agron.* 63, 27-35.
- Köster, J.R.; Cardenas, L.; Bol, R.; Lewicka-Szczebak, D.; Senbayram, M.; Well, R.; Gieseemann, A. & **Dittert, K.** (2015) Anaerobic digestates lower N₂O emissions compared to cattle slurry by affecting rate and product stoichiometry of denitrification - an N₂O isotopomer case study. *Soil Biology & Biochemistry* 84, 65-74.
- Senbayram, M.; Tränkner, M.; **Dittert, K.** & Brück, H. (2015) Daytime leaf water use efficiency does not explain the relationship between plant N status and biomass water-use efficiency of tobacco under non-limiting water supply. *J. Plant Nutr. Soil Sci.* 178, 682-692.
- Tao, Y.; Zhang, Y.; Jin, X.; Saiz, G.; Jing, R.; Guo, L.; Liu, M.; Shi, J.; Zuo, Q.; Tao, H.; Butterbach-Bahl, K.; **Dittert, K.** & Lin, S. (2015) More rice with less water - evaluation of yield and resource use efficiency in ground cover rice production system with transplanting. *Eur. J. Agron.* 68, 13-21.
- Xiao, Q.Y.; De Gernier, H.; Kupcsik, L.; De Pessemier, J.; **Dittert, K.**; Fladung, K.; Verbruggen, N. & Hermans, C. (2015) Natural genetic variation of *Arabidopsis thaliana* root morphological response to magnesium supply. *Crop & Pasture Science* 66, 1249-1258.

2014

- Cabeza, R.; Koester, B.; Liese, R.; Lingner, A.; Baumgarten, V.; Dirks, J.; Salinas-Riester, G.; Pommerenke, C.; **Dittert, K.** & Schulze, J. (2014) A RNA sequencing transcriptome analysis reveals novel insights into molecular aspects of the nitrate impact on the nodule activity of *Medicago truncatula*. *Plant Physiol.*, 164, 400-411.
- Cabeza, R.A.; Liese, R.; Lingner, A.; von Stieglitz, I.; Neumann, J.; Salinas-Riester, G.; Pommerenke, C.; **Dittert, K.** & Schulze, J. (2014) RNA-seq transcriptome profiling reveals that *Medicago truncatula* nodules acclimate N₂ fixation before emerging P deficiency reaches the nodules 3. *J. Exp. Bot.* 65, 6035-6048.
- Cabeza, R.A.; Lingner, A.; Liese, R.; Sulieman, S.; Senbayram, M.; Tränkner, M.; **Dittert, K.** & Schulze, J. (2014) The Activity of Nodules of the Supernodulating Mutant Mt(sunn) Is not Limited by Photosynthesis under Optimal Growth Conditions, 5. *International Journal of Molecular Sciences* 15, 6031-6045.
- Chen, R.R.; Senbayram, M.; Blagodatsky, S.; Myachina, O.; **Dittert, K.**; Lin, X.G.; Blagodatskaya, E. & Kuzyakov, Y. (2014) Soil C and N availability determine the priming effect: microbial N mining and stoichiometric decomposition theories. *Global Change Biology*, in press.

Claus, S.; Taube, F.; Wienforth, B.; Svoboda, N.; Sieling, K.; Kage, H.; Senbayram, M.; **Dittert, K.**; Gericke, D.; Pacholski, A. & Herrmann, A. (2014) Life-cycle assessment of biogas production under the environmental conditions of northern Germany: greenhouse gas balance. *J. Agric. Sci.*, in press.

Köster, J.R.; **Dittert, K.**; Mühling, K.H.; Kage, H. & Pacholski, A. (2014) Cold season ammonia emissions from land spreading with anaerobic digestates from biogas production. *Atmospheric Environment*, 84, 35-38.

Lewicka-Szczebak, D.; Well, R.; Köster, J.R.; Fuß, R.; Senbayram, M.; **Dittert, K.** & Flessa, H. (2014) Experimental determinations of isotopic fractionation factors associated with N₂O production and reduction during denitrification. *Geochim. Cosmochim. Acta* in press.

Schmeer, M.; Loges, R.; **Dittert, K.**; Senbayram, M.; Horn R. & Taube, F. (2014) Legume-based forage production systems reduce nitrous oxide emissions. 1. *Soil & Tillage Research* 143, 17-25.

2013

Dittert, K.; Senbayram, M. & Köster, J.R. (2013) N-fertilizer related nitrous oxide emissions – what we know, what we can do. In XVII. International Plant Nutrition Colloquium and Boron Satellite Meeting Proceedings Book. pp. 87-88. Sabanci University, Istanbul.

Köster, J.R.; Pacholski, A.; **Dittert, K.**; Kage, H.; Denmead, O.T.; Griffith, D.W.T.; Chen, D. & Mühling, K.H. (2013) Cold season ammonia and methane emissions from anaerobic digestates during land spreading and storage determined by Open Path FTIR and a micrometeorological model. In XVII. International Plant Nutrition Colloquium and Boron Satellite Meeting Proceedings Book. pp. 917-918. Sabanci University, Istanbul.

Köster, J.R.; Well, R.; **Dittert, K.**; Giesemann, A.; Lewicka-Szczebak, D.; Mühling, K.H.; Herrmann, A.; Lammel, J. & Senbayram, M. (2013) Soil denitrification potential and its influence on N₂O reduction and N₂O isotopomer ratios. *Rapid Comm. Mass Spectrom.*, 27, 2363-2373.

Köster, J.R.; Well, R.; Tuzson, B.; Bol, R.; **Dittert, K.**; Giesemann, A.; Emmenegger, L.; Manninen, A.; Cárdenas, L. & Mohn, J. (2013) Novel laser spectroscopic technique for continuous analysis of N₂O isotopomers - application and inter-comparison with isotope ratio mass spectrometry. *Rapid Comm. Mass Spectrom.*, 27, 216-222.

Senbayram, M.; Tränkner, M.; **Dittert, K.** & Brück, H. (2013) Nitrogen supply enhances intrinsic but not biomass water use efficiency. In XVII. International Plant Nutrition Colloquium and Boron Satellite Meeting Proceedings Book. pp. 477-479. Sabanci University, Istanbul.

2012

- Chen, R.R.; Blagodatskaya, E.; Senbayram, M.; Blagodatsky, S.; Myachina, O.; **Dittert, K.** & Kuzyakov, Y. (2012) Decomposition of biogas residues in soil and their effects on microbial growth kinetics and enzyme activities. *Biomass Bioenerg.*, 45, 221-229.
- Senbayram, M.; Chen, R.R.; Budai, A.; Bakken, L.; & **Dittert, K.** (2012): N₂O emission and the N₂O/(N₂O+N₂) product ratio of denitrification as controlled by available carbon substrates and nitrate concentrations. *Agriculture, Ecosystem and Environment.*, 147:4-12.

2011

- Chen, R. R.; Hu, J. L.; **Dittert, K.**; Wang, J. H.; Zhang, J. B. & Lin, X. G. (2011) Soil total nitrogen and natural ¹⁵N in response to long-term fertilizer management of a maize-wheat cropping system in northern China. *Commun. Soil Sci. Plant Anal.*, 42, 322-331.
- Chen, R.R.; Senbayram, M.; Lin, X.G. & **Dittert, K.** (2011) Origin of positive d¹³C of emitted CO₂ from soils after application of biogas residues. *Soil Biology & Biochemistry* 43, 2194-2199.
- Fanselow, N.; Schönbach, P.; Gong, X.Y.; Lin, S.; Taube, F.; Loges, R.; Pan, Q. & **Dittert, K.** (2011) Short-term regrowth responses of four steppe grassland species to water, nitrogen, and grazing intensity in Inner Mongolia. *Plant and Soil*, 340, 279-289.
- Gong, X.Y.; Chen, Q.; **Dittert, K.**; Taube, F. & Lin, S. (2011) Nitrogen, phosphorus and potassium nutritional status of semiarid steppe grassland in Inner Mongolia. *Plant and Soil*, 340, 265-278.
- Gong, X.Y.; Chen, Q.; Lin, S.; Brueck, H.; **Dittert, K.**; Taube, F. & Schnyder, H. (2011) Tradeoffs between nitrogen and water use efficiency in dominant species of the semiarid steppe of Inner Mongolia. *Plant and Soil*, 340, 227-238.
- Köster, J.R.; Cárdenas, L.; Senbayram, M.; Bol, R.; Well, R.; Butler, M.; Mühling, K.H. & **Dittert, K.** (2011) Rapid shift from denitrification to nitrification in soil after biogas residue application as indicated by nitrous oxide isotopomers. *Soil Biology & Biochemistry* 43, 1671-1677.
- Li, J.; Lin, S.; Taube, F.; Pan, Q. & **Dittert, K.** (2011) Above and belowground net primary productivity of grassland influenced by supplemental water and nitrogen in Inner Mongolia. *Plant and Soil*, 340, 253-264.
- Liu, Y.; Pan, Q.M.; Liu, H.D.; Bai, Y.F.; Simmons, M.; **Dittert, K.** & Han, X.G. (2011) Plant responses following grazing removal at different stocking rates in an Inner Mongolia grassland ecosystem. *Plant and Soil*, 340, 199-213.

Nannen, D.U.; Hermann, A.; Loges, R.; Dittert, K. & Taube, F. (2011) Recovery of mineral fertiliser N and slurry N in continuous silage maize using the ^{15}N and difference methods. *Nutrient Cycling in Agroecosystems*, 89, 269-280.

Wu, H.; Dannenmann, M.; Fanselow, N.; Wolf, B.; Yao, Z.; Wu, X.; Brüggemann, N.; Zhen, X.; Han, X.; **Dittert, K.** & Butterbach-Bahl, K. (2011) Feedback of grazing on gross rates of N mineralization and inorganic N partitioning in steppe soils of Inner Mongolia. *Plant and Soil*, 340, 1127-139.

2010

Herrmann, A.; Senbayram, M. & **Dittert, K.** (2010) Treibhausgasemissionen aus der Landwirtschaft. *Biogas Journal*, 3/2010, 90-94.

2009

Dittert, K. & Mühlhng, K.H. (2009) Emission of climate relevant trace gases in intensive plant production. *Journal für Verbraucherschutz und Lebensmittelsicherheit*, 4, 207-211.

Gevrek, M.N.; Beser, N.; **Dittert, K.** & Tatar, Ö. (2009) Effects of plastic film mulching cultivation system on some agronomic characters of rice in relation with the increase of paddy acreage. *Turkish Journal of Field Crops*, 14, 15-29.

Senbayram, M.; Chen, R.R. & **Dittert, K.** (2009) Contribution of nitrification and denitrification to nitrous oxide emissions from soils amended with biogas waste compared to other fertilizers. *Rapid Commun. Mass Spectrom.*, 23, 2489-2498.

Zhang, L.; Lin, S.; Bouman, B.A.M.; Xue, C.Y.; Wei, F.T.; Tao, H.B.; Yang, X.G.; Wang, H.Q.; Zhao, D.L. & **Dittert, K.** (2009) Response of aerobic rice growth and grain yield to N fertilizer at two contrasting sites near Beijing, China. *Field Crops Res.*, 114, 45-53.

2008

Chen, R.R. & **Dittert, K.** (2008) Diffusion technique for ^{15}N and inorganic N analysis of low-N aqueous solutions and Kjeldahl digests. *Rapid Commun. Mass Spectrom.*, 22, 1727-1734.

Wachendorf, C.; Lampe, C.; Taube, F. & **Dittert, K.** (2008) Nitrous oxide emissions and dynamics of soil nitrogen under ^{15}N -labeled cow urine and dung patches on a sandy grassland soil. *J. Plant Nutr. Soil Sci.*, 171, 171-180.

2007

- Kreye, C.; Dittert, K.; Zheng, X.H.; Zhang, X.; Lin, S.; Tao, H.B. & Sattelmacher, B. (2007) Fluxes of methane and nitrous oxide in water-saving rice production in north China. *Nutrient Cyc. Agroecosyst.*, 77, 293-304.
- Tao, H.B.; **Dittert, K.**; Zhang, L.M.; Lin, S.; Römheld, V. & Sattelmacher, B. (2007): Effects of soil water content on growth, tillering, and manganese uptake of lowland rice grown in the water-saving ground-cover rice-production system (GCRPS). *Journal of Plant Nutrition and Soil Science*, 170, 7-13.

2006

- Dittert, K.**; Wötzel, J. & Sattelmacher, B. (2006): Responses of *Alnus glutinosa* to anaerobic conditions – mechanisms and rate of oxygen flux into the roots. *Plant Biology*, 8, 212-223.
- Lampe, C.; **Dittert, K.**; Sattelmacher, B.; Wachendorf, M.; Loges, R. & Taube, F. (2006) Sources and rates of nitrous oxide emissions from grazed grassland after application of ¹⁵N-labelled mineral fertilizer and slurry. *Soil Biol. Biochem.*, 38, 2602-2613.
- Tao, H.; Brück, H.; **Dittert, K.**; Kreye, C.; Lin, S. & Sattelmacher, B. (2006) Growth and yield formation of rice (*Oryza sativa* L.) in the water-saving ground cover rice production system (GCRPS). *Field Crops Research*, 95, 1-12.

2005

- Dittert, K.**; Lampe, C.; Gasche, R.; Butterbach-Bahl, K.; Wachendorf, M.; Papen, H.; Sattelmacher, B. & Taube, F. (2005) Short-term effects of single or combined application of mineral N fertilizer and cattle slurry on the fluxes of radiatively active trace gases from grassland soil. *Soil Biology and Biochemistry*, 37, 1665-1674.

2004

- Bol, R.; Petersen, S.; Christofides, C.; **Dittert, K.** & Hansen, M.N. (2004) Short-term N₂O, CO₂, NH₃ fluxes, and N/C transfers in a Danish grass-clover pasture after simulated urine deposition in autumn. *Journal of Plant Nutrition and Soil Science*, 167, 568-576.
- Lin, S.; **Dittert, K.** Wu, W.L. & Sattelmacher, B. (2004) Added nitrogen interaction as affected by soil nitrogen pool size and fertilisation - significance of displacement of fixed ammonium. *Journal of Plant Nutrition and Soil Science*, 167, 138-146.

Lin, S.; Sattelmacher, B.; Kutzmutz, E.; Mühling, K.H. & **Dittert, K.** (2004) Influence of nitrogen nutrition on tuber quality of potato with special reference to the pathway of nitrate transport into tubers. *Journal of Plant Nutrition*, 27, 341-350.

Xu, Y.C.; Shen, Q.R.; Li, M.L.; **Dittert, K.** & Sattelmacher, B. (2004) Effect of soil water status and mulching on N₂O and CH₄ emission from lowland rice field in China. Short communication. *Biology and Fertility of Soils*, 39, 215-217.

2001

Dittert, K.; Bol, R.; King, R.; Chadwick, D. and Hatch, D (2001) Use of a novel nitrification inhibitor to reduce nitrous oxide emission from ¹⁵N-labelled dairy slurry injected into soil. *Rapid Communications in Mass Spectrometry*, 15, 1291-1296.

Coester, M.; **Dittert, K.** & Sattelmacher, B. (2001) Contribution of fresh-shredded green material to the nitrogen nutrition of oilseed rape (*Brassica napus*) on a Black Earth Soil (Stagnic Phaeozem). *Nutrient Cycling in Agroecosystems*, 59, 259-267.

1999

Dittert, K.; Goerges, T.; Bless, H.G.; Lin, S. & Sattelmacher, B. (1999) Stickstoffdynamik im Boden nach Gülledüngung unter besonderer Berücksichtigung der N-Pflanzenaufnahme. *Pflanzenbauwissenschaften*, 3, 53-58.

Dilly, O.; Bach, H.J.; Blume, H.P.; Buscot, F.; **Dittert, K.**; Kappen, L.; Kutsch, W.; Middelhoff, B.; Mogge, B.; Pritsch, K.; Wötzel, J. & Munch, J.-C. (1999) Microbial processes and features of the microbiota in histosols from a Black Alder (*Alnus glutinosa* (L.) Gaertn.) forest. *Geomicrobiology Journal*, 16, 65-78.

1998

Dittert, K.; Goerges, T. & Sattelmacher, B. (1998) Nitrogen turnover in soil after application of animal manure and slurry as studied by the stable isotope ¹⁵N: a review. *Journal of Plant Nutrition and Soil Science*, 161, 453-463.

Goerges, T. & **Dittert, K.** (1998) Improved diffusion technique for ¹⁵N:¹⁴N analysis of ammonium and nitrate from aqueous samples by stable isotope spectrometry. *Commun. Soil Sci. Plant Anal.*, 3 & 4, 361-368.

Buchbeiträge

- Bouman, B.; Barker, R.; Humphreys, E.; Tuong, T.P.; Atlin, G.; Bennett, J.; Dawe, D.; **Dittert, K.**; et al. (2007) Rice Feeding the Billions. In: Comprehensive Assessment of Water Management in Agriculture. Water for Food, Water for Life: A Comprehensive Assessment of Water Management in Agriculture. Synthesis Report. Earthscan, London, and International Water Management Institute, Colombo, 515-549.
- Gerendas, J. & **Dittert, K.** (2010) 16. Düngung von Böden In: Blume, H.P.; Horn, R.; Thiele-Bruhn, S. Handbuch des Bodenschutzes: Bodenökologie und -belastung. Vorbeugende und abwehrende Schutzmassnahmen. Wiley-VCH, 242-267.
- Kappen, L.; Sattelmacher, B.; **Dittert, K.** & Buscot, F. (1998) Symbiosen in ökosystemarer Sicht. In: Fränze, O.; Müller, F.; Schröder, W. (eds.) Handbuch der Umweltwissenschaften: Grundlagen und Anwendungen der Ökosystemforschung. Ecomed Verlag, Landsberg, IV-3.5, 1-28.