

# Curriculum vitae

Dr. Thomas Nemecek  
Agroscope  
Sustainability Assessment and Agricultural Management  
LCA group  
Reckenholzstrasse 191  
CH-8046 Zurich, Switzerland  
phone +41 (0)58 468 72 54 / fax +41 (0)58 468 72 01  
[www.agroscope.ch](http://www.agroscope.ch)  
e-mail : [thomas.nemecek@agroscope.admin.ch](mailto:thomas.nemecek@agroscope.admin.ch)



## Curriculum vitae :

3 April 1962    born in Ostrava (CZ)  
since 1970    living in Switzerland  
1982-87      studies on agricultural science at the Swiss Federal Institute of Technology in Zurich, Switzerland (ETH)  
1987          diploma as agricultural engineer, specialisation in plant production, ETH Zurich  
1987-1992    PhD student at ETH Zurich in systems analysis of agricultural systems  
1993          PhD degree in technical sciences  
1992-1994    Swiss Federal Agricultural Research Station in Changins  
Development of a simulation system for forecasting of virus diseases and yield of seed potatoes  
since 1994    working at Agroscope, Zurich  
since 2000    Deputy leader of the Life Cycle Assessment group at Agroscope

## Current functions:

- Deputy leader of the Life Cycle Assessment group at Agroscope
- Responsible for methodological development of SALCA (Swiss Agricultural Life Cycle Assessment)
- Project manager of the Agroscope project "Environmental impacts of nutrition"
- Subject Editor for Agriculture in the International Journal of Life Cycle Assessment
- Editor for Journal animal
- Member of the scientific committee of Donau-Soja
- Member of the advisory board of the EU project PATHWAYS

## Former functions:

- Coordinator of the EU project OptiSignFood (2021-2024)
- Research peer for the strategic research field protein supply at Agroscope
- Member of the expert group of the Swiss Centre of Life Cycle Inventories ecoinvent (2000-2012)
- Member of the scientific committee of the European Association of Grain Legumes (2007-2012)
- Editor for agriculture and food of the Swiss Centre of Life Cycle Inventories ecoinvent
- Editor for the journal Agronomy
- Associate Editor for the Food Research International Journal (2013-2015)
- WP leader in the OLCA-Pest project ("Operationalising Life Cycle Assessment of Pesticides")

### Fields of experience:

- LCA of cropping and farming systems, with particular reference to organic and low-input farming systems, and cropping systems including legumes
- LCA of farms
- LCA of animal production systems
- Life cycle inventory modelling and database building
- LCA in the food sector

### Finished international projects:

- Concerted action “European extension network for the development of grain legume production in the EU” (GL-Pro, EC Contract: QLK5-CT-2002-02418), leader of WP 4 “Environmental analysis”
- Integrated project “New strategies to improve grain legumes for food and feed” (Grain Legumes, EC Contract: FP6-506223), leader of WP 2.2 “Economic and Environmental analysis”
- Concerted action “Agricultural Research for Improving Arable Crop Competitiveness” (EUROCROP, EC Contract: SSPE-CT-2006-022757), leader of working group 3.5 (Environmental Impacts).
- Task leader in the French CASDAR pea-rape seed-wheat project
- Task leader in the FP7 project Strategies for Organic and Low-input Integrated Breeding and Management (SOLIBAM)

### Relevant publications:

- Zingale S., Ingrao C., Reguant-Closa A., Guarnaccia P. & **Nemecek T.**, 2024. A multifunctional life cycle assessment of durum wheat cropping systems. *Agronomy for Sustainable Development*, 44(5), 45. <https://doi.org/10.1007/s13593-024-00982-4>
- Mehner E., Ehlers M.-H., Herrmann M., Höchli B., Holenweger G., Mann S., Messner C., **Nemecek T.**, Reguant Closa A., Schäfer O., Stämpfli A., Walther B., Douziech M., 2024. Fleisch- und Milchersatzprodukte - besser für Gesundheit und Umwelt? Auswirkungen auf Ernährung und Nachhaltigkeit, die Sicht der Konsumentinnen und Konsumenten sowie ethische und rechtliche Überlegungen. Ed. TA-SWISS, vdf Hochschulverlag AG. 300 p. <https://doi.org/10.3218/4194-1>
- Keel S., Ammann C., Bretscher D., Gross T., Guillaume T., Huguenin-Elie O., Moll J., **Nemecek T.**, Roesch A., Volk M., Wüst C., Leifeld J., 2024. Dauergrünlandböden der Schweiz: Quelle oder Senke von Kohlendioxid? *Agroscope Science*, 189, 21p. <https://doi.org/10.34776/as189g>
- Zingale, S., Cimini, A., Guarnaccia, P., Reguant-Closa, A., Lagioia, G., **Nemecek, T.**, M. Moresi & Ingrao, C., 2024. Durum wheat pasta cooking: A combined assessment of the relevant quality, energy and environmental indicators. *Environmental Impact Assessment Review*, 109, 107640. <https://doi.org/10.1016/j.eiar.2024.107640>
- Furrer C., Sieh D., Jank A. M., le Bras G., Herrmann M., Reguant-Closa A., & **Nemecek T.**, 2024. Interlinking environmental and food composition databases: an approach, potential and limitations. *Journal of Cleaner Production*, 143198. <https://doi.org/10.1016/j.jclepro.2024.143198>
- Herrmann M., Mehner E., Egger L., Portmann R., Hammer L., **Nemecek T.**, 2024. A Comparative Nutritional Life Cycle Assessment of Processed and Unprocessed Soy-Based Meat and Milk Alternatives Including Protein Quality Adjustment. *Frontiers in Sustainable Food Systems*, 8, 1413802. <https://doi.org/10.3389/fsufs.2024.1413802>
- Goglio P., Moakes S., Knudsen M.T., Van Mierlo K., Adams N., Maxime F., Maresca A., Romero-Huelva M., Waqas M.A., Smith L.G., Grossi G., Smith W., De Camillis C., **Nemecek T.**, Tei F. & Oudshoorn F.W., 2024. Harmonizing methods to account for soil nitrous oxide emissions in Life Cycle Assessment of agricultural systems. *Agricultural Systems*, 219: 104015. <https://doi.org/10.1016/j.agsy.2024.104015>
- Douziech M., Bystrycky M., Furrer C., Gaillard G., Lansche J., Roesch A., **Nemecek T.** (2024). Recommended impact assessment method within Swiss Agricultural Life Cycle Assessment (SALCA): v2.01. *Agroscope Science*, 183. <https://doi.org/10.34776/as183e>
- Roesch A., Lansche J., **Nemecek T.**, 2024. Regionalisation of environmental impacts and emissions models in agricultural LCA. *Agroscope Science*, 184, 79p. <https://doi.org/10.34776/as184e>
- Reguant-Closa, A., Pedolin, D., Herrmann, M. & **Nemecek, T.** 2024. Review of Diet Quality Indices that can be Applied to the Environmental Assessment of Foods and Diets. *Current Nutrition Reports*, 1-12. <https://doi.org/10.1007/s13668-024-00540-0>

- Ran Y., Cederberg C., Jonell M., Bergman K., De Boer I.J.M., Einarsson R., Karlsson J., Potter H.K., Martin M., Metson G.S., **Nemecek T.**, Nicholas K.A., Strand Å., Tidåker P., Van der Werf H., Vanham D., Van Zanten H.H.E., Verones F. & Röss E., 2024. Environmental assessment of diets: overview and guidance on indicator choice. *The Lancet Planetary Health*, 8: e172-e187. [https://doi.org/10.1016/S2542-5196\(24\)00006-8](https://doi.org/10.1016/S2542-5196(24)00006-8)
- Nemecek T.**, Roesch A., Bystricky M., Jeanneret P., Lansche L., Stüssi M., Gaillard G., 2024. Swiss Agricultural Life Cycle Assessment: A method to assess the emissions and environmental impacts of agricultural systems and products. *Int. J LCA* 29, 433–455. <https://doi.org/10.1007/s11367-023-02255-w>
- Ineichen S.M., Zumwald J., Reidy B., **Nemecek T.**, 2023. Feed-food and land use competition of lowland and mountain dairy cow farms, *Animal* 17 (12), 101028. doi: <https://doi.org/10.1016/j.animal.2023.101028>
- Green, A., **Nemecek, T.** & Mathys, A., 2023. A proposed framework to develop nutrient profiling algorithms for assessments of sustainable food: the metrics and their assumptions matter. *The International Journal of Life Cycle Assessment*, 2210. <https://doi.org/10.1007/s11367-023-02210-9>.
- Roesch A., Flury C., **Nemecek T.**, Mann S., Ritzel C., Gilgen A., 2023. Indicator-based agri-environmental direct payments: Assessment of three systems of different complexity levels. *Ecological Indicators*, 147, 109886, <https://doi.org/10.1016/j.ecolind.2023.109886>.
- Ammann J., Arbenz A., Mack G., **Nemecek T.**, El Benni N., 2023. A review on policy instruments for sustainable food consumption. *Sustainable Production and Consumption*, 36, 338-353. <https://doi.org/10.1016/j.spc.2023.01.012>.
- Pedolin D., Jan P., Roesch A., Six J. & **Nemecek, T.**, 2023. Farm diversity impacts on food production, income generation and environmental preservation: The Swiss case. *Journal of Cleaner Production*, 135851. <https://doi.org/10.1016/j.jclepro.2023.135851>
- Muñoz-Liesa J., Cuerva E., Parada F., Gasso S., Gabarrell X., **Nemecek T.**, Josa A. 2022. Guidelines to optimize covering and structural materials in a rooftop-integrated greenhouses: an environmental assessment. *Acta Horticulturae* 1356, 285-294. <https://doi.org/10.17660/ActaHortic.2022.1356.34>
- Pedolin D., Six J., **Nemecek T.**, 2022. Assessment of environmental and economic performance on Swiss farms. In: Proc. 13<sup>th</sup> Int. Conf. LCA Food, 12-14 October 2022, Lima, Peru. PELCAN-PUCP, 57-60.
- Reguant-Closa A., Roesch A., Lansche J., **Nemecek T.**, Lohman T. & Meyer N., 2022. Are athletes environmental champions? LCA case study in sports nutrition. In: Proc. 13<sup>th</sup> Int. Conf. LCA Food, 12-14 October 2022, Lima, Peru. PELCAN-PUCP, 299-302.
- Green A., **Nemecek T.**, Mathys A., 2022. Using nutrient profiling algorithms to compare nutritionally-invested environmental impacts of cow's milk and plant-based beverages. In: Proc. 13<sup>th</sup> Int. Conf. LCA Food, 12-14 October 2022, Lima, Peru. PELCAN-PUCP, 407-408.
- Reguant-Closa A., Furrer C., Pedolin D., **Nemecek T.**, 2022. Assessing the nutritional health and environmental dimensions of foods and diets: comparison of nutritional metrics. In: Proc. 13<sup>th</sup> Int. Conf. LCA Food, 12-14 October 2022, Lima, Peru. PELCAN-PUCP, 469-472.
- Muñoz-Liesa J., Cuerva E., Parada F., Gassó-Domingo S., Josa A., **Nemecek T.**, 2022. Multifunctionality in rooftop greenhouses: Increasing energy and crop yields through improved covering materials. In: Proc. 13<sup>th</sup> Int. Conf. LCA Food, 12-14 October 2022, Lima, Peru. PELCAN-PUCP, 501-504.
- Nemecek T.** & Lansche J., 2022. Consistent modelling of heavy metal balances in LCA on field and farm level. In: Proc. 13<sup>th</sup> Int. Conf. LCA Food, 12-14 October 2022, Lima, Peru. PELCAN-PUCP, 563-567.
- Smetana S., Ristic S., Pleissner D., Tuomisto H., Parniakov O., Scherer L., **Nemecek T.**, Heinz V., 2022. Meat analogs: technological demands substitution of nutrients and environmental impacts. In: Proc. 13<sup>th</sup> Int. Conf. LCA Food, 12-14 October 2022, Lima, Peru. PELCAN-PUCP, 737-738.
- Nemecek T.**, Auner D., van Altena J., Furrer C., Gentgen K., Höhnel A., Jank A.M., Kollo M., Müller M., Racz R., Reguant Closa A., Sieh D., 2022. OptiSignFood: developing more sustainable food products through artificial Intelligence. In: Proc. 13<sup>th</sup> Int. Conf. LCA Food, 12-14 October 2022, Lima, Peru. PELCAN-PUCP, 1-5.
- Diogo, V., Helfenstein, J., Mohr, F., Varghese, V., Debonne, N., Levers, C., Swart, R., Sonderegger, G., **Nemecek, T.**, Schader, C., Walter, A., Ziv, G., Herzog, F., Verburg, P. H., & Bürgi, M. (2022). Developing context-specific frameworks for integrated sustainability assessment of agricultural intensity change: An application for Europe. *Environmental Science & Policy*, 137, 128-142. <https://doi.org/https://doi.org/10.1016/j.envsci.2022.08.014>
- Muñoz-Liesa J., Cuerva E., Parada F., Volk D., Gassó-Domingo S., Josa A., **Nemecek T.**, 2022. Urban greenhouse covering materials: Assessing environmental impacts and crop yields effects, *Resources, Conservation and Recycling*, 186, 106527. <https://doi.org/10.1016/j.resconrec.2022.106527>
- Ineichen S., Schenker U., **Nemecek T.**, Reidy B. (2022) Allocation of environmental burdens in dairy systems: Expanding a biophysical approach for application to larger meat-to-milk ratios. *Livestock Science*, 104955, <https://doi.org/10.1016/j.livsci.2022.104955>.
- Nemecek T.**, Antón A., Basset-Mens C., Gentil-Sergent C., Renaud-Gentié C., Melero C., Naviaux P., Peña N., Roux P. & Fantke P., 2022. Operationalising emission and toxicity modelling of pesticides in LCA: the

- OLCA-Pest project contribution. *Int J Life Cycle Assess* 27, 527-542. <https://doi.org/10.1007/s11367-022-02048-7>
- Mathis, M., Blom, J. F., **Nemecek, T.**, Bravin, E., Jeanneret, P., Daniel, O., & de Baan, L. (2022). Comparison of exemplary crop protection strategies in Swiss apple production: Multi-criteria assessment of pesticide use, ecotoxicological risks, environmental and economic impacts. *Sustainable Production and Consumption* 31, 512-528, <https://doi.org/10.1016/j.spc.2022.03.008>
- Thoma G., Tichenor Blackstone N., **Nemecek T.**, Jolliet O., 2022. Life cycle assessment of food systems and diets. pp. 37-61 in: *Food System Modelling*, eds. Peter C.J. & Thilmany D.D., Academic Press, Elsevier, 390p. <https://doi.org/10.1016/C2019-0-03225-6>
- Grassauer F., Herndl M., **Nemecek T.**, Fritz C., Guggenberger T., Steinwider A., Zollitsch W., 2022. Assessing and improving eco-efficiency of multifunctional dairy farming: The need to address farms' diversity. *Journal of Cleaner Production*, 130627, <https://doi.org/10.1016/j.jclepro.2022.130627>
- Chai, Q., **Nemecek, T.**, Liang, C., Zhao, C., Yu, A., Coulter, J.A., Wang, Y., Hu, F., Wang, L., K. H.M. Siddiquee, Gan, Y., 2021. Integrated farming with intercropping increases food production while reducing environmental footprint. *Proc. Natl. Acad. Sci.* 118 (38) e2106382118. <https://doi.org/10.1073/pnas.2106382118>
- Pedolin, D., Six J., **Nemecek, T.**, 2021. Assessing between and within product group variance of environmental efficiency of Swiss agriculture using life cycle assessment and data envelopment analysis. *Agronomy*, 1330526. <https://doi.org/10.3390/agronomy11091862>
- Wittwer R.A., Bender S.F., Hartman K., Hydbom S., Lima R.A., Loaiza V., **Nemecek T.**, Oehl F., Olsson P.A., Petchey O. and Prechsl U.E., Schlaeppi K., Scholten T., Seitz S., Six J. & van der Heijden M.G., 2021. Organic and conservation agriculture promote ecosystem multifunctionality. *Science Advances*, 7(34), p.eabg6995. <https://doi.org/10.1126/sciadv.abg6995>
- Green, A., **Nemecek, T.**, Smetana, S., & Mathys, A., 2021. Reconciling regionally-explicit nutritional needs with environmental protection by means of nutritional life cycle assessment. *Journal of Cleaner Production*, 127696. <https://doi.org/10.1016/j.jclepro.2021.127696>
- Grassauer F., Herndl M., **Nemecek T.**, Guggenberger T., Fritz C., Steinwider A., Zollitsch W., 2021. Eco-efficiency of farms considering multiple functions of agriculture: Concept and results from Austrian farms, *Journal of Cleaner Production*, 297, 126662, <https://doi.org/10.1016/j.jclepro.2021.126662>
- Green A., **Nemecek T.**, Mathys A., 2020. Testing the use of nutritional-LCA for estimating nutritional and environmental sustainability dimensions of agri-food production. *Proc. 12<sup>th</sup> Int. Conf. Life Cycle Assessment of Food 2020 (LCA Food 2020)*, 13-16 October 2020, 279-283.
- Pedolin D., Six J., **Nemecek T.**, 2020. Aggregating midpoint indicators for eco-efficiency using data envelopment analysis. *Proc. 12<sup>th</sup> Int. Conf. Life Cycle Assessment of Food 2020 (LCA Food 2020)*, 13-16 October 2020, 490-493.
- Roesch A., Weisskopf P., Bystricky M., Schüpbach B., Jeanneret P., **Nemecek T.**, 2020. Modelling foreground and background land use impacts in agricultural systems: the dilemma of highly detailed or universally applicable. *Proc. 12<sup>th</sup> Int. Conf. Life Cycle Assessment of Food 2020 (LCA Food 2020)*, 13-16 October 2020, 584-589.
- Nemecek T.**, Zumwald J., Ineichen S., Reidy R., 2020. Reconsidering the land resource for food production: quantifying feed-food competition in dairy systems. *Proc. 12<sup>th</sup> Int. Conf. Life Cycle Assessment of Food 2020 (LCA Food 2020)*, 13-16 October 2020, 559-563.
- Nemecek T.**, Thoma G., 2020. Allocation between milk and meat in dairy LCA: critical discussion of the International Dairy Federation's standard methodology. *Proc. 12<sup>th</sup> Int. Conf. Life Cycle Assessment of Food 2020 (LCA Food 2020)*, 13-16 October 2020, 86-89.
- Green A., **Nemecek T.**, Chaudhary A., Mathys A., 2020. Assessing nutritional, health, and environmental sustainability dimensions of agri-food production. *Global Food Security* 26, 100406. <https://doi.org/10.1016/j.gfs.2020.100406>
- Reguant-Closa A., Roesch A., Lansche J., **Nemecek T.**, Lohman T.G., Meyer N.L., 2020. The environmental impact of the Athlete's Plate nutrition education tool. *Nutrients*, 12, 2484; doi:10.3390/nu12082484.
- Meyer, N. L., Reguant-Closa, A., & **Nemecek, T.**, 2020. Sustainable Diets for Athletes. *Current Nutrition Reports*, 9, 147-162. <https://doi.org/10.1007/s13668-020-00318-0>
- Bystricky M., **Nemecek T.**, Krause S., Gaillard G., 2020. Potenzielle Umweltfolgen einer Umsetzung der Trinkwasserinitiative. *Agroscope Science*, 99, 221p.
- Bystricky M., Jeanneret P., **Nemecek T.**, 2020. Biodiversity impact assessment of low-pesticide scenarios for the Swiss food sector: How can we broaden our vision to include impacts abroad when addressing domestic food consumption? *Proceedings of the SETAC Europe 2020 conference*, 3-7 May 2020.
- Nemecek T.**, Basset-Mens C., Gentil C., Renaud-Gentié C., Roux P., Peña N., Antón A., Melero C., Fantke P., 2020. Emission and toxicity modelling for pesticides: operationalising the pesticide consensus. *Proceedings of the SETAC Europe 2020 conference*, 3-7 May 2020.
- von Ow A., Waldvogel T. & **Nemecek T.**, 2020. Environmental optimization of the Swiss population's diet using domestic production resources, *J. Clean. Prod.*, 248, 119241. <https://doi.org/10.1016/j.jclepro.2019.119241>.



- Zimmermann A. & **Nemecek T.**, 2019. Stellung der Milch hinsichtlich der Umweltwirkungen der Ernährung in der Schweiz. Schweizerische Zeitschrift für Ernährungsmedizin 3/2019, 6-7.
- Roesch, A., Weisskopf, P., Oberholzer, H., Valsangiacomo, A., & **Nemecek, T.**, 2019. An approach for describing the effects of grazing on soil quality in life-cycle assessment. Sustainability, 11(18), 4870, <https://doi.org/10.3390/su11184870>
- Nemecek T.**, Haupt C., Hofer N., Roesch A. and Gazzarin A., 2019. Analysis of options to increase the sustainability in the Swiss dairy sector – a literature review. Grassland Science in Europe 24, 170-172.
- Mathis M., Waldvogel T., Haupt C., de Baan L., **Nemecek T.**, 2019. Evaluation of plant protection strategies with LCA and risk assessment for five crops in Switzerland. Proceedings of the SETAC Europe 29<sup>th</sup> Annual Meeting, Helsinki, 26-29 May 2019, 2p.
- Nemecek T.**, Poore J., 2019. Environmental impacts of food: variability and potentials for reduction through producers and consumers. Proceedings of the SETAC Europe 29<sup>th</sup> Annual Meeting, Helsinki, 26-29 May 2019, 2p.
- Zumwald J., **Nemecek T.**, Ineichen S., Reidy B., 2019. Indikatoren für die Flächen- und Nahrungsmittelkonkurrenz in der Schweizer Milchproduktion: Entwicklung und Test zweier Methoden. Agroscope Science 85, 66p.
- Jan P., Repar N., **Nemecek, T.**, & Dux, D., 2019. Production intensity in dairy farming and its relationship with farm environmental performance: empirical evidence from the Swiss alpine area. Livestock Science, 224, 10-19. <https://doi.org/10.1016/j.livsci.2019.03.019>
- Zimmermann A. & **Nemecek, T.** 2018. Switzerland: Eco-friendly, resource-conserving food and feed production, IDF Dairy Sustainability Outlook, 2018, Issue 1, 7-9.
- Nemecek T.**, 2019. Environmental impacts of the production and use of grain legumes. Legume Perspectives 15, 31-32.
- Nemecek T.**, Waldvogel T., Haupt C., Mathis M., de Baan L., 2018. Assessing environmental impacts and risks of pesticide application in Swiss crops by combining LCA and risk analysis. Proceedings of the 11th International Conference on Life Cycle Assessment of Food (LCA Food 2018), 16-20 October 2018, Bangkok, Thailand, 166-169.
- Nemecek T.**, Zimmermann A. & Waldvogel T., 2018. How to supply food for the Swiss population in an environmentally optimal way by using domestic production resources best? Proceedings of the 11th International Conference on Life Cycle Assessment of Food (LCA Food 2018), 16-20 October 2018, Bangkok, Thailand, 313-316.
- Bystricky M., **Nemecek T.**, Möhring A., Prasuhn V., Gaillard G., 2018. Effects of measures to reduce nutrient losses on the overall environmental impact of the Swiss farming sector. Proceedings of the 11th International Conference on Life Cycle Assessment of Food (LCA Food 2018), 16-20 October 2018, Bangkok, Thailand, 247-250.
- Roesch A., Weisskopf P., Oberholzer H.R., Valsangiacomo A., **Nemecek T.**, 2018. Describing effects of grazing on soil quality in LCA. Proceedings of the 11th International Conference on Life Cycle Assessment of Food (LCA Food 2018), 16-20 October 2018, Bangkok, Thailand, 48-51.
- Nemecek, T.**, 2018. Umweltwirkungen der Milchproduktion und -verarbeitung. Newsletter Swissmilk für Ernährungsfachleute Oktober 2018, 4p.
- Ingrao C, Bacenetti J., Bezama A., Blok V., Goglio P., Koukios E.G., Lindner M., **Nemecek T.**, Siracusa V., Zabaniotou A., Huisingh D., 2018. The potential roles of bio-economy in the transition to equitable, sustainable, post fossil-carbon societies: Findings from this virtual special issue. J. Cleaner Prod. 204: 471-488. <https://doi.org/10.1073/pnas.2106382118>
- Repar N., Jan P., **Nemecek T.**, Dux D., Doluschitz R., 2018. Factors Affecting Global versus Local Environmental and Economic Performance of Dairying: A Case Study of Swiss Mountain Farms. Sustainability, 10(8): 2940. <https://doi.org/10.3390/su10082940>
- Waldvogel, T., Mathis, M., de Baan, L., Haupt, C. & **Nemecek, T.**, 2018. Reduktion der Umweltauswirkungen von Pflanzenschutzmitteln ist möglich. Agrarforschung Schweiz 9 (7–8): 270–272.
- Waldvogel T., Mathis M., de Baan L., Haupt Ch. & **Nemecek T.**, 2018. Bewertung der Umweltwirkungen und Risiken verschiedener Pflanzenschutzstrategien für fünf Kulturen in der Schweiz. Agroscope Science 64, Agroscope, Zürich. <http://www.agroscope.ch/science>.
- Poore J. & **Nemecek T.**, 2018. Reducing food's environmental impacts through producers and consumers. Science 360, 987-998. <https://doi.org/10.1126/science.aag0216>
- Zumwald J., Braunschweig M., **Nemecek T.**, Schüpbach B., Jeanneret Ph., Roesch A., Hofstetter P. & Reidy B., 2018. Life cycle assessment of grassland-based dairy production systems in Switzerland. Grassland Science in Europe, 23, 541-543.
- Zumwald J., Braunschweig M., Hofstetter P., Reidy B. & **Nemecek T.**, 2018. Ökobilanzanalyse weide- und graslandbasierter Milchproduktionssysteme. Agrarforschung Schweiz 9 (5), 156-163.
- Zumwald J., Braunschweig M. & **Nemecek T.**, 2018. Ökobilanz von drei Milchproduktionssystemen unterschiedlicher Intensität auf Basis von Eingrasen und Vollweide. Agroscope Science 61, 97p.
- Haupt C., Hofer N., Roesch A., Gazzarin C. & **Nemecek T.**, 2018. Nachhaltigkeit der Schweizer Milchproduktion: Analyse ausgewählter Massnahmen, Agrarforschung Schweiz 9 (3): 98–101.

- Haupt C., Hofer N., Roesch A., Gazzarin C., **Nemecek T.**, 2018. Analyse ausgewählter Massnahmen zur Verbesserung der Nachhaltigkeit in der Schweizer Milchproduktion – eine Literaturstudie. *Agroscope Science*, 58, 75p.
- Zimmermann A., **Nemecek T.**, Waldvogel T., 2017. Eine optimierte Ernährung schont die Umwelt. *Agrarforschung Schweiz* 9(1), 32-36.
- Zimmermann A., **Nemecek T.**, Waldvogel T., 2017. Umwelt- und ressourcenschonende Ernährung: Detaillierte Analyse für die Schweiz. *Agroscope Science* 55, 170p.
- Prasuhn V., Möhring A., Bystricky M., **Nemecek T.** & Gaillard G., 2017. Ökonomische und ökologische Beurteilung von Gewässerschutzszenarien. *Agrarforschung Schweiz* 8 (9): 340–347.
- Goglio P., Brankatschk G., Trydeman Knudsen M., Williams A.G., **Nemecek T.**, 2017. Addressing crop interactions within cropping systems in LCA. *Int.J.Life Cycle Assess.*, <https://doi.org/10.1007/s11367-017-1393-9>, 9p.
- Prechsl U.E., Wittwer R., van der Heijden M.G.A., Lüscher G., Jeanneret P. & **Nemecek T.**, 2017. Assessing the environmental impacts of cropping systems and cover crops: Life cycle assessment of FAST, a long-term arable farming field experiment. *Agricultural Systems*, 157: 39-50. <https://doi.org/10.1016/j.agsy.2017.06.011>
- Bystricky M., **Nemecek T.** & Gaillard G., 2017. Gesamt-Umweltwirkungen als Folge von Gewässerschutzmassnahmen im Schweizer Agrarsektor. *Agroscope Science*. 50, 67p.
- Nemecek T.**, 2017. Umweltwirkungen der Milchproduktion und Milchverarbeitung. *Schweiz. Zeitschrift für Ernährungsmedizin*, 2/2017, 19-20.
- Watson C.A., Reckling M., Preissel S., Bachinger J., Bergkvist G., Kuhlman T., Lindström K., **Nemecek T.**, Topp C.F.E., Vanhatalo A., Zander P., Murphy-Bokern D. & Stoddard F.L., 2017. Grain Legume Production and Use in European Agricultural Systems. *Advances in Agronomy*, 144: 235-303. <https://doi.org/10.1016/j.gfs.2023.100723>
- Roesch A., Gaillard G., Isenring J., Jurt C., Keil N., **Nemecek T.**, Rufener C., Schüpbach B., Umstätter C., Waldvogel T., Walter T., Werner J., Zorn A., 2017. Comprehensive farm sustainability assessment. *Agroscope Science*. 47, 248p.
- Lüscher G., **Nemecek T.**, Arndorfer M., Balázs K., Dennis P., Fjellstad W., Friedel J.K., Gaillard G., Herzog F., Sarthou J.P., Stoyanova S., Wolfrum S. & Jeanneret P., 2017. Biodiversity assessment in LCA: a validation at field and farm scale in eight European regions. *International Journal of Life Cycle Assessment* 22: 1483–1492. <https://doi.org/10.1007/s11367-017-1278-y>
- Goglio, P., Smith, W. N., Grant, B. B., Desjardins, R. L., Gao, X., Hanis, K., M. Tenuta, C.A. Campbell, B.G. McConkey, **T. Nemecek**, P.J. Burgess, A.G. & Williams., 2017. A comparison of methods to quantify greenhouse gas emissions of cropping systems in LCA. *Journal of Cleaner Production*, 172, 4010-4017. <https://doi.org/10.1016/j.jclepro.2017.03.133>
- Repar N., Jan P., Dux D., **Nemecek T.** & Doluschitz R., 2017. Implementing farm-level environmental sustainability in environmental performance indicators: A combined global-local approach. *Journal of Cleaner Production*, 140: 692-704. <https://doi.org/10.1016/j.jclepro.2016.07.022>
- Repar, N., Jan, P., **Nemecek T.**, Dux, D., Alig Ceesay, M., & Doluschitz, R., 2016. Local versus Global Environmental Performance of Dairying and Their Link to Economic Performance: A Case Study of Swiss Mountain Farms. *Sustainability*, 8(12), 1294. <https://doi.org/10.3390/su8121294>
- Nemecek T.**, Jeanneret P., Oberholzer H.R., Schüpbach B., Roesch A., Alig M., Hofstetter P. & Reidy B., 2016. Evaluating ecosystem services in the life cycle assessment of grass-land-based dairy systems. *Grassland Science in Europe*, 21, 621-623.
- Nemecek T.** & Ledgard S., 2016. Modelling farm and field emissions in LCA of farming systems: the case of dairy farming. In: *Proc. of 10th International Conference on Life Cycle Assessment of Food 2016*, Dublin. UCD, 1135-1144.
- Repar N., Jan P., **Nemecek T.** & Dux-Bruggmann D., 2016. Synergies and trade-offs between farm local and global environmental performance: a case study of Swiss alpine dairy farms. In: 26. Jahrestagung der Österreichischen Gesellschaft für Agrarökonomie. 15.-16. September, Hrsg. Hochschule für Agrar- und Umweltpädagogik, Wien. 2016, 69-70.
- Wolff V., Alig Ceesay M., **Nemecek T.**, Gaillard G., 2016. Ökobilanz verschiedener Fleischprodukte - Geflügel-, Schweine- und Rindfleisch: Schlussbericht Projekt „EnviMeat“. Hrsg. *Agroscope INH*, Zürich. Juni, 2016, 51p.
- Roesch A., Gaillard G., Isenring J., Jurt Vicuña Muñoz C., Keil N., **Nemecek T.**, Rufener C., Schüpbach B., Umstätter C., Waldvogel T., Walter T., Werner J., Zorn A., 2016. Umfassende Beurteilung der Nachhaltigkeit von Landwirtschaftsbetrieben. *Agroscope Science*. 33, 278p.
- Nemecek T.**, Schnetzer J. & Reinhard J., 2016. Updated and harmonised greenhouse gas emissions for crop inventories. *Int J Life Cycle Assess*, 21: 1361-1378, <https://doi.org/10.1007/s11367-014-0712-7>
- Nemecek T.**, Jungbluth N., Milà i Canals L. & Schenck R., 2016. Environmental impacts of food consumption and nutrition: where are we and what's next? *Int J Life Cycle Assess* 21, 607-620. <https://doi.org/10.1007/s11367-016-1071-3>

- Nemecek, T.,** Alig, M., 2016. Life cycle assessment of dairy production systems in Switzerland: strengths, weaknesses and mitigation options. In: Integrated nutrient and water management for sustainable farming. (Eds L.D. Currie and R.Singh). <http://flrc.massey.ac.nz/publications.html>. Occasional Report No. 29. Fertilizer and Lime Research Centre, Massey University, Palmerston, North, New Zealand. 10 p.
- Nemecek T.,** 2016. Effiziente Ressourcennutzung in der Landwirtschaft im Kontext der gesamten Wertschöpfungskette. Ressourcen effizienter nutzen. In: Eckel H. & Molnar C., Tagungsband der KTBL-Tagung vom 18.-20. April 2016, Kassel, Ressourcen effizienter nutzen, 11-15.
- Boone L., van Linden V., de Meester S., Vandecasteele B., Muylle H., Roldán-Ruiz I., **Nemecek T.** & Dewulf J., 2016. Environmental life cycle assessment of grain maize production: An analysis of factors causing variability. *Science of the Total Environment*, 553: 551-564. <https://doi.org/10.1016/j.scitotenv.2016.02.089>
- Baumgartner, D.U., Bystricky M. & **Nemecek T.,** 2015. Konzept der betrieblichen Ökobilanzierung. Bericht Abschlusstagung des Projektes Farmlife – Ökobilanzierung landwirtschaftlicher Betriebe in Österreich. 22.-23.9.2015, HBLFA Raumberg-Gumpenstein, Austria, 13-22.
- Bystricky M. & **Nemecek T.,** 2015. SALCA-Emissionsmodelle: Anwendung in Österreich. Bericht Abschlusstagung des Projektes Farmlife – Ökobilanzierung landwirtschaftlicher Betriebe in Österreich. 22.-23.9.2015, HBLFA Raumberg-Gumpenstein, Austria, 23-32.
- Kulak M., **Nemecek T.,** Frossard E. & Gaillard G., 2015. Eco-efficiency improvement by using integrative design and life cycle assessment. The case study of alternative bread supply chains in France. *Journal of Cleaner Production*, 112, 2452-2461. <http://dx.doi.org/10.1016/j.jclepro.2015.11.002>
- Goglio P., Smith W.N., Grant B.B., Desjardins R.L., McConkey B.G., Campbell C.A. & **Nemecek T.,** 2015. Accounting for soil carbon changes in agricultural life cycle assessment (LCA): a review. *Journal of Cleaner Production*, 104: 23-39. <https://doi.org/10.1016/j.jclepro.2015.05.040>
- Bystricky M., Alig M., **Nemecek T.** & Gaillard G., 2015. Life-cycle assessment of Swiss agricultural products compared with imports. *Agrarforschung Schweiz*, 6: 264-269.
- Brito de Figueirêdo M.C., Potting J., Lopes Serrano L.A., Bezerra M.A., da Silva Barros V., Gondim R.S. & **Nemecek T.,** 2015. Environmental assessment of tropical perennial crops: the case of the Brazilian cashew. *Journal of Cleaner Production*, 112, 131-140. <https://doi.org/10.1016/j.jclepro.2015.05.134>
- Rosenbaum R.K., Anton A., Bengoa X., Björn A., Brain R., Bulle C., Cosme N., Dijkman T.J., Fantke P., Felix M., Geoghegan T.S., Gottesbüren B., Hammer C., Humbert S., Jolliet O., Juraske R., Lewis F., Maxime D., **Nemecek T.,** Payet J., Räsänen K., Roux P., Schau E.M., Sourisseau S., Zelm R.v., von Streit B. & Wallman M., 2015. The Glasgow consensus on the delineation between pesticide emission inventory and impact assessment for LCA. *Int. J. LCA*, 20 (6): 765-776. <https://doi.org/10.1007/s11367-015-0871-1>
- Nemecek T.,** Hayer F., Bonnin E., Carrouée B., Schneider A., Vivier C., 2015. Designing eco-efficient crop rotations using life cycle assessment of crop combinations. *Eur. J. Agr.*, 65, 40-51. <https://doi.org/10.1016/j.eja.2015.01.005>
- Kulak M., **Nemecek T.,** Frossard E., Chable V. & Gaillard, G., 2015. Life cycle assessment of bread from several alternative food networks in Europe. *J. Cleaner Prod.*, 90, 104-113. <https://doi.org/10.1016/j.jclepro.2014.10.060>
- Nemecek T.,** Alig Ceesay M., Sutter M., 2014. Ökobilanz der graslandbasierten Milchproduktion: Stärken, Schwächen und Verbesserungspotenziale. *Mitteilungen der Arbeitsgemeinschaft Grünland und Futterbau*. 16, 11-16.
- Nemecek T.,** Bengoa X., Lansche J., Mouron P., Rossi V., Humbert S., 2014. Methodological guidelines for the Life Cycle Inventory of agricultural products. Version 2.0, July 2014: World Food LCA Database (WFLDB). Quantis and Agroscope, Lausanne and Zurich. 79p.
- Markussen M.V., Kulak M., Smith L.G., **Nemecek T.** & Ostergard H., 2014. Evaluating the Sustainability of a Small-Scale Low-Input Organic Vegetable Supply System in the United Kingdom. *Sustainability*, 6: 1913-1945. <https://doi.org/10.3390/su6041913>
- Bystricky M., Alig M., **Nemecek T.** & Gaillard G., 2014. Ökobilanz ausgewählter Schweizer Landwirtschaftsprodukte im Vergleich zum Import. Agroscope, Zürich, Agroscope Science 2, available at [www.agroscope.admin.ch](http://www.agroscope.admin.ch).
- Richner W., Oberholzer H.-R., Freiermuth Knuchel R., Huguenin-Elie O., Ott S., **Nemecek T.,** Walther U., 2014. Modell zur Beurteilung der Nitratauswaschung in Ökobilanzen - SALCA-NO<sub>3</sub>, unter Berücksichtigung der Bewirtschaftung (Fruchtfolge, Bodenbearbeitung, N-Düngung), der mikrobiellen Nitratbildung im Boden, der Stickstoffaufnahme durch die Pflanzen und verschiedener Bodeneigenschaften. Version 2.0; Juni 2014. *Agroscope Science*, 5, 28p.
- Nemecek T.,** Alig M. and Grandl F., 2013. Environmental impacts of beef production systems (bull fattening and suckler cows) in different countries. *Grassland Science in Europe* 18: 88-91.
- Kulak M., **Nemecek T.,** Frossard E. & Gaillard G., 2013. How eco-efficient are low-input cropping systems in Western Europe, and what can be done to improve their eco-efficiency? *Sustainability*, 5, 1-30, <https://doi.org/10.3390/su5093722>

- Schader C., Lampkin N., Christie M., **Nemecek T.**, Gaillard G. & Stolze M., 2013. Evaluation of cost-effectiveness of organic farming support as an agri-environmental measure at Swiss agricultural sector level. *Land Use Policy*, 31: 196-208.
- Lütke Börding S., **Nemecek T.**, Ellmer F., Honermeier B. und Schäfer B.C., 2013. Einfluss der Bodenbearbeitung und Fruchtfolgegestaltung auf die Umweltwirkungen der Biogaserzeugung. *Mitt. Ges. Pflanzenbauwiss.* 25: 102–103.
- Sutter M., **Nemecek T.**, Thomet P., 2013. Vergleich der Ökobilanzen von stall- und weidebasierter Milchproduktion. *Agrarforschung Schweiz*. 4, (5), 2013, 230-237.
- Alig M., Grandl F., Mieleitner J., **Nemecek T.**, Gaillard G. 2012. Ökobilanz von Rind-, Schweine- und Geflügelfleisch. Report ART, September 2012, 151p.
- Nemecek, T.**, Weiler, K., Plassmann, K., Schnetzer, J., Gaillard, G., Jefferies, D., García-Suárez, T., King, H. & Milà i Canals, L., 2012. Estimation of the variability in global warming potential of worldwide crop production using a modular extrapolation approach. *J. Cleaner Prod.*, 31: 106-117. <https://doi.org/10.1016/j.jclepro.2012.03.005>
- Deytieux, V., **Nemecek, T.**, Freiermuth Knuchel, R., Gaillard, G. & Munier-Jolain, N.M., 2012. Is Integrated Weed Management efficient for reducing environmental impacts of cropping systems? A case study based on life cycle assessment. *Eur. J. Agronomy*, 36: 55-65. <https://doi.org/10.1016/j.eja.2011.08.004>
- Nemecek, T.**, Huguenin, O., Dubois, D. & Gaillard, G., 2011. Life cycle assessment of Swiss farming systems: I. Integrated and organic farming. *Agricultural Systems*, 104: 217-232. <https://doi.org/10.1016/j.agsy.2010.10.002>
- Nemecek, T.**, Huguenin, O., Dubois, D., Gaillard, G., Schaller, B. & Chervet, A., 2011. Life cycle assessment of Swiss farming systems: II. Extensive and intensive production. *Agricultural Systems*, 104: 233-245. <https://doi.org/10.1016/j.agsy.2010.07.007>
- Nemecek, T.**, Weiler, K., Plassmann, K., Schnetzer, J., Gaillard, G., Jefferies, D., García-Suárez, T., King, H. & Milà i Canals, L., 2011. Modular extrapolation approach for crop LCA MEXALCA: global warming potential of different crops and its relationship to the yield. In: Finkbeiner, M., *Towards Life Cycle Sustainability Management*, 309-317. Springer, Dordrecht a.o.
- Bartl, K., Gomez, C.A. & **Nemecek, T.**, 2011. Life cycle assessment of milk produced in two smallholder dairy systems in the highlands and the coast of Peru. *J. Cleaner Prod.*, 19: 1494-1505. <https://doi.org/10.1016/j.jclepro.2011.04.010>
- de Boer, I.J.M., Cederberg, C., Eady, S., Gollnow, S., Kristensen, T., Macleod, M., Meul, M., **Nemecek, T.**, Phong, L.T., Thoma, G., van der Werf, H.M.G., Williams, A.G. & Zonderland-Thomassen, M.A., 2011. Greenhouse gas mitigation in animal production: towards an integrated life cycle sustainability assessment. *Current Opinion in Environmental Sustainability*, 3: 423-431. <https://doi.org/10.1016/j.cosust.2011.08.007>
- Pelletier, N., Audsley, E., Brodt, S., Garnett, T., Henriksson, P., Kendall, A., Kramer, K.J., Murphy, D., **Nemecek, T.** & Troell, M., 2011. Energy Intensity of Agriculture and Food Systems. In: Gadgil, A. & Liverman, D.M., *Annual Review of Environment and Resources*, 36: 223-246. <https://doi.org/10.1146/annurev-environ-081710-161014>
- Milà i Canals, L., Sim, S., Azapagic, A., Doka, G., Frischknecht, R., Jefferies, D., King, H., Mutel, C., **Nemecek, T.**, Roches, A., Stichnothe, H., Thoma, G. & Williams, A., 2011. Approaches for addressing Life Cycle Assessment data gaps for bio-based products. *J. Ind. Ecol.*, 15: 707-725. <https://doi.org/10.1111/j.1530-9290.2011.00369.x>
- Zimmermann, A., Baumgartner, D., **Nemecek, T.** & Gaillard, G., 2011. Are public payments for organic farming cost-effective? Combining a decision-support model with LCA. *Int. J. LCA*, 16: 548-560. <https://doi.org/10.1007/s11367-011-0286-6>
- Alig M., Baumgartner D., Mieleitner J., **Nemecek T.**, 2011. Swiss milk production in the mountain region. In: *Grassland Farming and Land Management Systems in Mountainous Region*, 29.08.-31.08.2011. Hrsg. European Grassland Federation, Grassland Science in Europe, Raumberg-Gumpenstein. Vol. 16, 2011, 305-307.
- Nemecek T.**, Schmid, A., Alig M., Schnebli, K., Vaihinger, M., 2011. Variability of the global warming potential and energy demand of Swiss cheese. In: Proc. SETAC Europe 17th Case Study Symposium "Sustainable Lifestyles", Budapest. 28 February - 1 March 2011, 57-58.
- Hersener J.-L., Baumgartner D.U., Dux D., Aeschbacher U., Alig M., Blaser S., Gaillard G., Glodé M., Jan P., Jenni M., Mieleitner J., Müller G., **Nemecek T.**, Rötheli E. & Schmid D., 2011. Zentrale Auswertung von Ökobilanzen landwirtschaftlicher Betriebe (ZA-ÖB) - Schlussbericht. Forschungsanstalt Agroscope Reckenholz-Tänikon ART, Zürich, 148 p.
- Davis, J., Sonesson, U., Baumgartner, D.U. & **Nemecek, T.**, 2010. Environmental impact of four meals with different protein sources: Case studies in Spain and Sweden. *Food Res. Int.* 43: 1874-1884. <https://doi.org/10.1016/j.foodres.2009.08.017>
- Roches, A., **Nemecek, T.**, Gaillard, G., Plassmann, K., Sim, S., King, H. & Milà i Canals, L., 2010. MEXALCA: a modular method for the extrapolation of crop LCA. *Int. J. LCA*, 15: 842-854. <https://doi.org/10.1007/s11367-010-0209-y>



- Nemecek, T.**, Freiermuth Knuchel, R., Alig, M. & Gaillard, G., 2010. The advantages of generic LCA tools for agriculture: examples SALCAcrop and SALCAfarm. In: 7th Int. Conf. on LCA in the Agri-Food Sector, Notarnicola, B. (eds.). Bari, Italy. 433-438.
- Nemecek, T.** & Gaillard, G., 2010. Challenges in assessing the environmental impacts of crop production and horticulture. In: Sonesson, U. et al. (eds). Environmental assessment and management in the food industry, 98-116. Woodhead Publishing Limited, Oxford a.o.
- Köpke, U. & **Nemecek, T.**, 2010. Ecological services of faba bean. *Field crops research*, 115: 217-233. <https://doi.org/10.1016/j.fcr.2009.10.012>
- Nemecek, T.**, von Richthofen, J.-S., Dubois, G., Casta, P., Charles, R. & Pahl, H., 2008. Environmental impacts of introducing grain legumes into European crop rotations. *European Journal of Agronomy*, 28: 380-393. <https://doi.org/10.1016/j.eja.2007.11.004>
- Nemecek, T.** & Kägi T., 2007. Life Cycle Inventories of Agricultural Production Systems. Final report ecoinvent v2.0 No. 15, Swiss Centre for Life Cycle Inventories, Duebendorf, CH, 360p.
- Nemecek, T.** & Gaillard, G., 2007. Reducing the complexity of environmental indicators for improved communication and management. In: Farming system design - an international symposium on Methodologies for Integrated Analysis of Farm Production Systems, 10-12 September 2007, Catania.
- Mouron, P., **Nemecek, T.**, Scholz, R.W. & Weber, O., 2006. Management influence on environmental impacts in an apple production system on Swiss fruit farms: Combining life cycle assessment with statistical risk assessment. *Agriculture, Ecosystems and Environment*, 114: 311-322. <https://doi.org/10.1016/j.agee.2005.11.020>
- Mouron, P., Scholz, R.W., **Nemecek, T.** & Weber, O., 2006. Life cycle management on Swiss fruit farms: relating environmental and income indicators for apple-growing. *Ecological Economics*, 58: 561-578. <https://doi.org/10.1016/j.ecolecon.2005.08.007>
- Frischknecht, R., Jungbluth, N., Althaus, H.J., Doka, G., Dones, R., Heck, T., Hellweg, S., Hischer, R., **Nemecek, T.**, Rebitzer, G. & Spielmann, M., 2005. The ecoinvent Database: Overview and Methodological Framework. *Int J LCA* 10 (1), 3-9. <https://doi.org/10.1065/lca2004.10.181.1>
- Nemecek, T.** & Erzinger, S., 2005. Modelling Representative Life Cycle Inventories for Swiss Arable Crops. *Int J LCA*, 10: 68-76. <https://doi.org/10.1065/lca2004.09.181.8>