LIST OF PUBLICATIONS - MATTHIAS SUTER

Alou, N., Schaub, S., **Suter, M.**, Lüscher, A., Finger, R. (2026) Plant diversity to cope with increased drought risk in grasslands. *Ecological Economics* 241:108852.

Lüscher, A., **Suter, M.**, Magnin, O., Huguenin-Elie, O., Klötzli, J., Ochsenbein, C., Suter, D. (2026) From research to practice: Multi-species and species-rich mixtures for sustainable agriculture. *Grass and Forage Science* 81:e70095.

Schwarz, J.M., **Suter, M.**, Pettman, S., Praz, C., Sutter, L., Varennes, Y.-D., Albrecht, M. (2027) Mowing meadows without conditioner and the availability of bee-friendly habitats synergistically benefit wild bees in agricultural landscapes. *Agriculture Ecosystems & Environment* 414:110796.

Bendalam, P., **Suter, M.**, Thivierge, M.-N., Walter, A., Huguenin-Elie, O. (2026) Effect of ley botanical composition on root biomass in temporary grasslands. *Grassland Science in Europe*, 31:260-263.

O'Malley, J., Finn, J.A., Malisch, C.S., **Suter, M.**, Meyer, S.T., Peratoner, G., . . . Brophy, C. (2026) Multispecies grasslands produce more yield from lower nitrogen inputs across a climatic gradient. ***Science*** 391:179-183.

Brophy, C., **Suter, M.**, Thivierge, M.-N., Vishwakarma, R., Komainda, M., Finn, J.A. (2025) Searching for the best-performing multi-species grassland mixtures: Evolving research questions, and experimental design and analysis. *Grassland Science in Europe* 30:37-48.

Lüscher, A., Magnin, O., Huguenin-Elie, O., Klötzli, J., **Suter, M.**, Ochsenbein, C., Suter, D. (2025) From research to practice: Multi-species and species-rich mixtures for sustainable agriculture. *Grassland Science in Europe*, 30:23-36.

Suter, M., Vishwakarma, R., Bendalam, P., Lüscher, A., Huguenin-Elie, O. (2025) Multispecies mixtures enhance yield and trampling resistance. *Grassland Science in Europe* 30:55-58.

Finn, J.A., **Suter, M.**, Vishwakarma, R., Oram, N.J., Lüscher, A., Brophy, C. (2024) Design principles for multi-species productive grasslands: Quantifying effects of diversity beyond richness. *Journal of Ecology* 112:2471-2479.

Richter, F.J., **Suter, M.**, Lüscher, A., Buchmann, N., El Benni, N., Feola Conz, R., . . . Klaus, V.H. (2024) Effects of management practices on the ecosystem-service multifunctionality of temperate grasslands. *Nature Communications* 15:3829.

Klötzli, J., **Suter, M.**, Beaumont, D., Kolmaňic, A., Leskovšek, R., Schaffner, U., Storkey, J., Lüscher, A. (2024) Key management practices to reduce the risk of the occurrence of *Rumex obtusifolius* in productive grasslands. *Weed Research* 64:76-88.

Klötzli, J., **Suter, M.**, Beaumont, D., Kolmaňic, A., Leskovšek, R., Schaffner, U., Storkey, J., Lüscher, A. (2024) Finding a needle in a haystack: case-control studies can identify measures to prevent weeds in grassland. *Grassland Science in Europe* 29:434-436.

Suter, M., Klötzli, J., Beaumont, D., Kolmaňic, A., Leskovšek, R., Schaffner, U., Storkey, J., Lüscher, A. (2023) Can the soil seed bank of *Rumex obtusifolius* in productive grasslands

be explained by management and soil properties? *PLOS ONE* 18, e0286760. DOI: 10.1371/journal.pone.0286760

Klötzli, J., **Suter, M.**, Schaffner, U., Müller-Schärer H., Lüscher, A. (2023) Synergistic effects of grass competition and insect herbivory on the weed *Rumex obtusifolius* in an inundative biocontrol approach. *Scientific Reports* 13:18508. DOI:10.1038/s41598-023-45609-y

Klötzli, J., **Suter, M.**, Lüscher, A., Müller-Schärer H., Schaffner, U. (2023) Competitive interactions affect larval survival of two root-boring weed biocontrol candidates of *Rumex* spp. *BioControl* 68:207-220.

Klötzli, J., **Suter, M.**, Schaffner, U., Müller-Schärer H., Lüscher, A. (2022) Joint effects of biocontrol herbivory and plant competition greatly reduce the growth of *Rumex obtusifolius*. *Grassland Science in Europe* 27:415-417.

Lüscher, A., Barkaoui, K., Finn, J.A., Suter, D., **Suter, M.**, Volaire, F. (2022) Using plant diversity to reduce vulnerability and increase drought resilience of permanent and sown productive grasslands. *Grass and Forage Science* 77:235–246.

Volk, M., **Suter, M.**, Wahl, A.-L., Bassin, S. (2022) Massive warming-induced carbon loss from subalpine grassland soils in an altitudinal transplantation experiment. *Biogeosciences* 19:1921-2937.

Suter, M., Huguenin-Elie, O., Lüscher, A. (2021) Multispecies for multifunctions: combining four complementary species enhances multifunctionality of sown grassland. *Scientific Reports* 11:3835. DOI:10.1038/s41598-021-82162-y

Hahn, C., Lüscher, A., Ernst-Hasler, S., **Suter, M.**, Kahmen, A. (2021) Timing of drought in the growing season and strong legacy effects determine the annual productivity of temperate grasses in a changing climate. *Biogeosciences* 18:585-604.

Volk, M., **Suter, M.**, Wahl, A.-L., Bassin, S. (2021) Sub-alpine grassland productivity increased with warmer and drier conditions, but not with higher N-deposition, in an altitudinal transplantation experiment. *Biogeosciences* 18:2075-2090.

Fox, A., **Suter, M.**, Widmer, F., Lüscher, A. (2020) Positive legacy effect of previous legume proportion in a ley on the performance of a following crop of *Lolium multiflorum*. *Plant and Soil* 447:497-506.

Pauler, C.M., Isselstein, J., **Suter, M.**, Bérard, J., Braunbeck, T., Schneider, M.K. (2020) Choosy grazers: Influence of plant traits on forage selection by three cattle breeds. *Functional Ecology* 34:980-992.

Suter, M., Huguenin-Elie, O., Lüscher, A. (2019) Species diversity enhances multi-functionality in sown grass–legume mixtures. *Grassland Science in Europe* 24:96.

Suter, M., Hofer, D., Lüscher, A. (2018) Higher yields in formerly drought-stressed *Lolium perenne* and *Cichorium intybus* due to increased carbohydrate reserves, higher root biomass, and increased mineral soil N. *Grassland Science in Europe* 23:357-359.

Cong, W.-F., **Suter, M.**, Lüscher, A., Eriksen, J. (2018) Species interactions between forbs and grass-clover contribute to yield gains and weed suppression in forage grassland mixtures. *Agriculture Ecosystems & Environment* 268:154-161.

Connolly, J., Sebastià, M.-T., Kirwan, L., Finn, J. A., Llurba, R., **Suter, M.**, Collins, R. A., Porqueddu, C., Helgadóttir, A., Baadshaug, O. H., *et al.* (2018) Weed suppression greatly increased by plant diversity in intensively managed grasslands: A continental-scale experiment. *Journal of Applied Ecology* 55:852-862.

Finn, J.A., **Suter, M.**, Haughey, E., Hofer, D., Lüscher, A. (2018) Greater gains in annual yields from increased plant diversity than losses from experimental drought in two temperate grasslands. *Agriculture Ecosystems & Environment* 258:149-153.

Fox, A., **Suter, M.**, Widmer, F., Lüscher, A (2018) Yield stimulating legacy effect of sown legume abundance in a ley on the performance of a *Lolium multiflorum* following crop *Grassland Science in Europe* 23:60-62.

Haughey, E., **Suter, M.**, Hofer, D., Hoekstra, N. J., McElwain, J. C., Lüscher, A., Finn, J. A., (2018) Higher species richness enhances yield stability in intensively managed grasslands with experimental disturbance. *Scientific Reports* 8:15047. DOI:10.1038/s41598-018-33262-9.

Helgadóttir, A., **Suter, M.**, Gylfadóttir, T. O., Kristjánsdóttir, T. A., Lüscher, A. (2018) Grass–legume mixtures sustain strong yield advantage over monocultures under cool maritime growing conditions over a period of 5 years. *Annals of Botany* 122:337-348.

Suter, M., Hofer, D., Lüscher, A. (2017) Weed suppression enhanced by increasing functional trait dispersion and resource capture in forage ley mixtures. *Agriculture Ecosystems & Environment* 240:329-339.

Suter, M., Hofer, D., Lüscher, A. (2017) Drought resistance of functionally different forage species is related to their nitrogen acquisition and deficiency. *Grassland Science in Europe* 22:431-433.

Brophy, C., Finn, J. A., Lüscher, A., **Suter, M.**, Kirwan, L., Sebastià, M.-T., Helgadóttir, A., Baadshaug, O. H., Bélanger, G., Black, A., *et al.* (2017) Major shifts in species' relative abundance in grassland mixtures alongside positive effects of species diversity in yield: a continental-scale experiment. *Journal of Ecology*, 105:1210-1222.

Finn, J.A., **Suter, M.**, Haughey, E., Hofer, D., Lüscher, A. (2017) Short- and long-term effects on yield of grassland monocultures and mixtures exposed to simulated drought. *Grassland Science in Europe* 22:320-322.

Hofer, D., **Suter, M.**, Buchmann, N., Lüscher, A. (2017) Severe water deficit restricts biomass production of *Lolium perenne* L. and *Trifolium repens* L. and causes foliar nitrogen but not carbohydrate limitation. *Plant and Soil* 421:367-380.

Hofer, D., **Suter, M.**, Buchmann, N., Lüscher, A. (2017) Nitrogen status of functionally different forage species explains resistance to severe drought and post-drought overcompensation. *Agriculture Ecosystems & Environment* 236:312-322.

Suter, M., Hofer, D., Lüscher, A. (2016) High functional dispersion of forage mixtures suppresses weeds in intensively managed grassland. *Grassland Science in Europe* 21:591-593.

Hofer, D., **Suter, M.**, Haughey, E., Finn, J. A., Hoekstra, N. J., Buchmann, N., Lüscher, A. (2016) Yield of temperate forage grassland species is either largely resistant or resilient to experimental summer drought. *Journal of Applied Ecology* 53:1023-1034.

Hofer, D., **Suter, M.**, Haughey, E., Finn, J. A., Lüscher, A. (2016) Annual yields of intensively managed grassland mixtures only slightly affected by experimental drought events. *Grassland Science in Europe* 21:877-879.

Lüscher, A., **Suter, M.**, Finn, J. A. (2016) Legumes and grasses complement each other ideally for sustainable forage production. *Legume Perspectives* 12:8-10.

Suter, M., Connolly, J., Finn, J. A., Loges, R., Kirwan, L., Sebastià, M. T., Lüscher, A. (2015) Nitrogen yield advantage from grass–legume mixtures is robust over a wide range of legume proportions and environmental conditions. *Global Change Biology* 21:2424-2438.

Hoekstra, N. J., **Suter. M.**, Finn, J. A., Husse, S., Lüscher, A. (2015) Do belowground vertical niche differences between deep- and shallow-rooted species enhance resource uptake and drought resistance in grassland mixtures? *Plant and Soil* 394:21-34.

Hofer, D., **Suter, M.**, Hoekstra, N. J., Haughey, E., Eickhoff, B., Finn, J. A., Buchmann, N., Lüscher, A. (2014) Important differences in yield responses to simulated drought among four species and across three sites. *Grassland Science in Europe* 19:166-168.

Huguenin-Elie, O., Husse, S., **Suter, M.**, Hoekstra, N. J., Lüscher, A. (2014) Final report describing options for improving the environmental roles of grassland at the field level through the optimisation on the botanical composition of the swards. Multisward FP7-244983, Seventh Framework Programme: Food, Agriculture and Fisheries, and Biotechnologies, S. 1-44.

Lüscher, A., **Suter, M.**, Finn, J. A., Collins, R. P., Gastal, F. (2014) Quantification of the effect of legume proportion in the sward on yield advantage and options to keep stable legume proportions (over climatic zones relevant for livestock production). AnimalChange FP7-266018, Seventh Framework Programme: Food, Agriculture and Fisheries, and Biotechnologies, pp. 1-35.

Wilberts, S., **Suter, M.**, Walser, N., Edwards, P. J., Venterink, H. O., Ramseier, D. (2014) Testing experimentally the effect of soil resource mobility on plant competition. *Journal of Plant Ecology* 7:276-286.

Suter, M., Edwards, P. J. (2013) Convergent succession of plant communities is linked to species' functional traits. *Perspectives in Plant Ecology, Evolution and Systematics* 15:217-225.

Suter, M., Connolly, J., Finn, J. A., Helgadóttir, A., Golinski, P., Kirwan, L., Loges, R., Kadziuliene, Z., Sebastià, M. T., Taube, F., Lüscher, A. (2013) Grass-legume mixtures enhance yield of total nitrogen and uptake from symbiotic N_2 fixation: Evidence from a three-year multisite experiment. *Grassland Science in Europe* 18:76-78.

Connolly, J., Bell, T., Bolger, T., Brophy, C., Carnus, T., Finn, J. A., Kirwan, L., Isbell, F., Levine, J., Lüscher, A., Picasso, V., Roscher, C., Sebastià, M. T., **Suter, M.**, Weigelt, A. (2013) An improved model to predict the effects of changing biodiversity levels on ecosystem function. *Journal of Ecology* 101:344-355.

Finn, J. A., Kirwan, L., Connolly, C., Sebastià, M. T., Helgadottir, A., Baadshaug, O. H., Bélanger, G., Black, A., Brophy, C., Collins, R. P., Čop, J., Dalmannsdóttir, S., Delgado, I., Elgersma, A., Fothergill, M., Frankow-Lindberg, B. E., Ghesquiere, A., Golinska, B., Golinski, P., Grieu, P., Gustavsson, A. M., Höglind, M., Huguenin-Elie, O., Jørgensen, M., Kadziuliene, Z., Kurki, P., Llurba, R., Lunnan, T., Porqueddu, C., **Suter, M.**, Thumm, U., Lüscher, A. (2013) Ecosystem function enhanced by combining four functional types of plant species in intensively-managed grassland mixtures: a three-year continental-scale field experiment. *Journal of Applied Ecology* 50:365–375.

Meier, M. S., Trtikova, M., **Suter, M.**, Edwards, P. J., Hilbeck, A. (2013) Simulating evolutionary responses of an introgressed insect resistance trait for ecological effect assessment of transgene flow: a model for supporting informed decision-making in environmental risk assessment. *Ecology and Evolution* 3:416-423.

Suter, M., Lüscher, A. (2012) Rapid and high seed germination and large soil seed bank of *Senecio aquaticus* in managed grassland. *The Scientific World Journal*, ID 723808, DOI:10.1100/2012/723808.

Suter, M., Arnold, B., Küng, J., Nagel, R., Zollinger, A., Lüscher, A. (2012) Wasser-Kreuzkraut keimt schnell und zahlreich. *Agrarforschung Schweiz* 3:366-373.

Suter, M., Stutz, C. J., Gago, R., Lüscher, A. (2012) Lässt sich Wasser-Kreuzkraut in landwirtschaftlichem Grasland kontrollieren? *Agrarforschung Schweiz* 3:306-313.

Bassin, S., Schalajda, J., Vogel, A., **Suter, M.** (2012) Different types of subalpine grassland respond similarly to elevated nitrogen deposition in terms of productivity and sedge abundance. *Journal of Vegetation Science* 23:1024-1034.

Jacot, K., Eggenschwiler, L., Beerli, C., Bosshard, A., **Suter, M.** (2012) Significance of different types of meadow edges for plant diversity in the Swiss Alps. *Agriculture Ecosystems & Environment* 153:75-81.

Suter, M., Lüscher, A. (2011) Measures for the control of *Senecio aquaticus* in managed grassland. *Weed Research* 51:601-611.

Suter, M., Lüscher, A. (2011) Can *Senecio aquaticus* be controlled in agricultural grassland? *Grassland Science in Europe* 16:85-87.

Nyfeler, D., Huguenin-Elie, O., **Suter, M.**, Frossard, E., Lüscher, A. (2011) Grass-legume mixtures can yield more nitrogen than legume pure stands due to mutual stimulation of nitrogen uptake from symbiotic and non-symbiotic sources. A*griculture Ecosystems & Environment* 140:155-163.

Suter, M., Lüscher, A. (2010) Case-control studies for risk-assessment in ecology and agriculture. *Grassland Science in Europe* 15:94-96.

Suter, M., Lüscher, A., Kessler, W. (2010) Verhinderung der Ausbreitung von giftigen Kreuzkrautarten im Schweizer Grasland. Bericht zuhanden des Bundesamtes für Landwirtschaft. Agroscope Reckenholz-Tänikon ART, Zürich.

Suter, M., Ramseier, D., Connolly, J., Edwards, P. J. (2010) Species identity and negative density dependence lead to convergence in designed plant mixtures of twelve species. *Basic and Applied Ecology* 11:627-637.

Suter, M. (2009) Reproductive allocation of *Carex flava* reacts differently to competition and resources in a designed plant mixture of five species. *Plant Ecology* 201:481-489.

Nyfeler, D., Huguenin-Elie, O., **Suter, M.**, Frossard, E., Connolly, J., Lüscher, A. (2009) Strong mixture effects among four species in fertilized agricultural grassland led to persistent and consistent transgressive overyielding. *Journal of Applied Ecology* 46:683-691.

Suter, M., Lüscher, A. (2008) Occurrence of *Senecio aquaticus* in relation to grassland management. *Applied Vegetation Science* 11:317-324.

Suter, M., Lüscher, A. (2008) Linking *Senecio aquaticus* occurrence to grassland management. *Grassland Science in Europe* 13:1019-1021.

Siegrist-Maag, S., Lüscher, A., **Suter, M.** (2008) Reaktion von Jakobs-Kreuzkraut auf Schnitt. *Agrarforschung* 15:338-343.

Kölbener, A., Ramseier, D., **Suter, M.** (2008) Competition alters plant species response to nickel and zinc. *Plant and Soil* 303:241-251.

Suter, M., Lüscher, A. (2007) Beeinflusst die Bewirtschaftung das Wasser-Kreuzkraut? *Agrarforschung* 14:22-27.

Suter, M., Ramseier, D., Güsewell, S., Connolly, J. (2007) Convergence patterns and multiple species interactions in a designed plant mixture of five species. *Oecologia* 151:499-511.

Suter, M., Siegrist-Maag, S., Connolly, J., Lüscher, A. (2007) Can the occurrence of *Senecio jacobaea* be influenced by management practice? *Weed Research* 47:262-269.

Suter, M., Siegrist-Maag, S., Connolly, J., Lüscher, A. (2007) *Senecio jacobaea* and management practice: What are the links? *Grassland Science in Europe* 12:421-424.

Bassin, S., Volk, M., **Suter, M.**, Buchmann, N., Fuhrer, J. (2007) Nitrogen deposition but not ozone affects productivity and community composition of sub-alpine grassland after three years of treatment. *New Phytologist* 175:523-534.

Herzog, F., Pfister, C., Bailey, D., Buholzer, S., Hofer, G., Riedel, S., Salamin, P.-A., **Suter, M.** (2007) Agrar-Umweltindikator "Qualität von ökologischen Ausgleichsflächen" - Varianten und Stichprobenplan. Bericht zuhanden des Bundesamtes für Landwirtschaft. Agroscope Reckenholz-Tänikon ART, Zürich.

Suter, M., Prohaska, C., Ramseier, D. (2006) Covering bare ground suppresses unwanted willows and aids a fen meadow restoration in Switzerland. *Ecological Restoration* 24:250-255.

Diekoetter, T., Walther-Hellwig, K., Conradi, M., **Suter, M.**, Frankl, R. (2006) Effects of landscape elements on the distribution of the rare bumblebee species *Bromus muscorum* in an agricultural landscape. *Biodiversity and Conservation* 15:57-68.

Jacot, K., Lüscher, A., **Suter, M.**, Nösberger, J., Hartwig, U. A. (2005) Significance of legumes for the distribution of plant species in grassland ecosystems at different altitudes in the Alps. *Plant Ecology* 180:1-12.

Suter, M., Schneller, J. J., Vogel, J. C. (2000). Investigations into the genetic variation, population structure and breeding systems of the fern *Asplenium trichomanes* subsp. *quadrivalens*. *International Journal of Plant Sciences* 161:233-244.

WEITERE PUBLIKATIONEN:

Klötzli, J., **Suter, M.**, Lüscher, A. (2025) Blacken: Neue Erkenntnisse zur Vorbeugung und Perspektiven für die biologische Regulierung. *Thurgauer Bauer* 23:17-19.

Suter, M., Lüscher, A. (2020) Gestresstes Grünland erholt sich gut. *Topagrar Südplus* 6:28-29.

Suter, M., Lüscher, A. (2018) Sommertrockenheit: Wiesen erholen sich gut. *Landfreund* 8:20-21.

Suter, M., Zehm, A., Peratoner, G., Schroeder, L., Nies, V., Huckauf, A., Bezemer, M., Kollmann, J., Bassler, G. (2017) Göttinger Erklärung zum Umgang mit Kreuzkräutern. In: *Kreuzkräuter und Naturschutz, Tagungsband internationale Fachtagung Göttingen 2017*, Deutscher Verband für Landschaftspflege DVL. pp. 93-96.

Suter, M., Lüscher, A. (2017) Habitatpräferenzen von Jakobs- und Wasser-Kreuzkraut und Risikofaktoren für deren Auftreten. In: *Kreuzkräuter und Naturschutz, Tagungsband internationale Fachtagung Göttingen 2017* (ed. Deutscher Verband für Landschaftspflege DVL), pp. 8-17.

Suter, M., Lüscher, A. (2012) Verhinderung der Ausbreitung von giftigen Kreuzkrautarten im Schweizer Grasland. Praxiszusammenfassung zuhanden der Arbeitsgemeinschaft zur Förderung des Futterbaues, Zürich**.**

Suter, M., Lüscher, A. (2010) Wenn Kreuzkräuter Lücken füllen. Bauernzeitung, 16.07.2010.

Suter, M., Ramseier, D. (2010) Konvergieren Pflanzengemeinschaften in langen Zeiträumen? *Mitteilungen der Thurgauischen Naturforschenden Gesellschaft* 64:113-120.

Suter, M., Lüscher, A. (2009) On-Farm Risikoanalysen zur Entwicklung von Kontrollmassnahmen bei Kreuzkraut-Arten. Beiträge zur 10. Wissenschaftstagung Ökologischer Landbau, Zürich. Band 1:209-212.

Suter, M., Nyfeler, D., Huguenin-Elie, O., Lüscher, A. (2007) The simplex design: A new tool to design mixtures and to study plant species interactions. Proceedings of the International Symposium Agricultural Field Trials, Stuttgart-Hohenheim, Germany. 227-231.