

Offering: Bachelor thesis in agroecology



Synthesis of stockless farming research – literature review

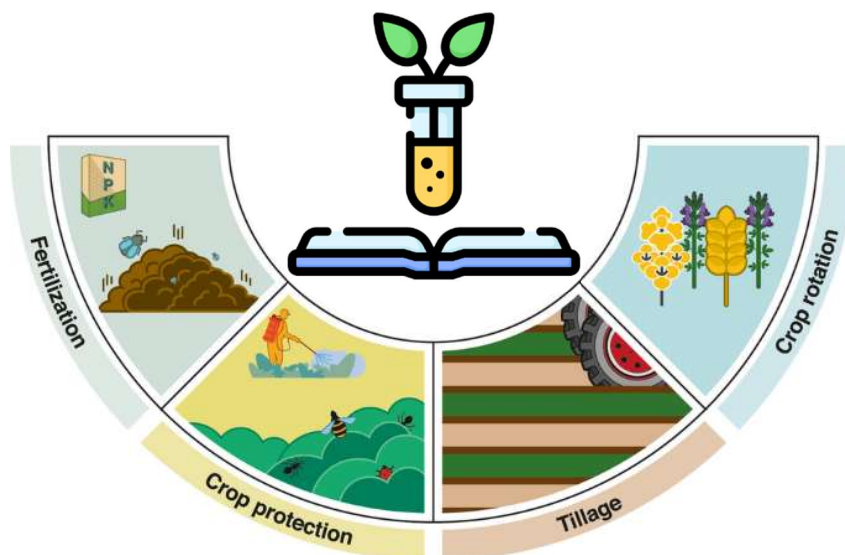
In the light of the multiple crises humanity is facing, including climate change, soil degradation and biodiversity loss, the need to drastically reduce livestock production and move towards plant-based diets is undeniable. Sustainably increasing plant production while substantially reducing animal production unveils the need of alternatives to both chemical-based conventional and animal-based organic agriculture. However, stockless farming is often considered challenging in terms of long-term soil fertility and plant nutrition. Yet, research on this topic is rare and widely scattered.

Therefore, we are looking for a highly motivated Bachelor student who would like to search for and synthesize the existing research literature on soil fertility in stockless farming. The aims are (1) to gain a comprehensive knowledge of stockless farming research, (2) to investigate best management practices within stockless farming, and (3) to identify knowledge gaps and future research directions.

Prerequisites: (basic) knowledge of soil fertility and drivers, interest in the topic, basic knowledge of literature search and R

Further readings: Ellssel et al. (2024) Building a solid foundation: advancing evidence synthesis in agri-food systems science. *Front. Sustain. Food Syst.* 8:1410205; Watson et al. (2002) Managing soil fertility in organic farming systems. *Soil Use and Management* 18: 239–247.

Contact: If you're interested in writing your thesis on this topic, please contact: Dr. Ulrike Schwerdtner (uli.schwerdtner@uni-bayreuth.de).



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Properties and yield impacts of plant-based fertilizers – literature review

In the light of the multiple crises humanity is facing, including climate change, soil degradation and biodiversity loss, the need to drastically reduce livestock production and move towards plant-based diets is undeniable. Sustainably increasing plant production while substantially reducing animal production unveils the need of alternatives to both chemical-based conventional and animal-based organic agriculture. However, stockless farming is often considered challenging in terms of long-term soil fertility and plant nutrition. Yet, research on this topic is rare and widely scattered.

Therefore, we are looking for a highly motivated Bachelor student who would like to search for and synthesize the existing research literature on plant-based fertilization (and potentially recycled fertilizers from food processing and/or human feces). The aims are (1) to identify and classify plant-based fertilizers that have already been investigated, (2) to determine their plant yield impacts and potential drivers, and (3) to identify knowledge gaps and future research directions.

Prerequisites: (basic) knowledge of plant nutrition and fertilization, interest in the topic, basic knowledge of literature search and R

Further readings: Ellssel et al. (2024) Building a solid foundation: advancing evidence synthesis in agri-food systems science. *Front. Sustain. Food Syst.* 8:1410205; Sorensen et al. (2011) Plant-based fertilizers for organic vegetable production. *J. Plant Nutr. Soil Sci.* 174:321–332

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