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HypoWave: Resource Efficient Water Reuse in Hydroponic Systems

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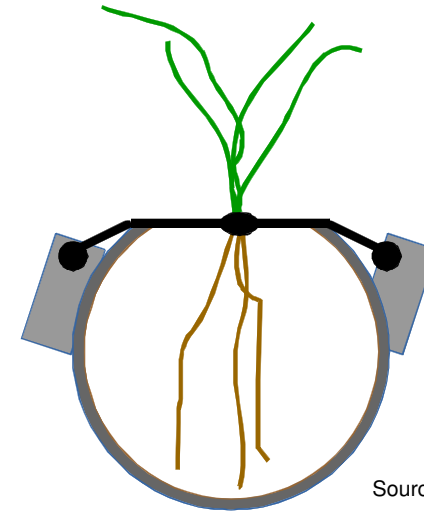


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What is hydroponics?

- Agricultural production in a system without soil
- Irrigation with an appropriate nutrient solution



Source: J. Germer

Project objectives

- Production of high quality products (→ pollutants and hygiene)
- High resource efficiency (→ water and nutrients)
- High transferability (→ location and scales)
- Water treatment: as much as necessary but as little as possible!
(→ determination of the limits of the system)

The HypoWave pilot-site (2017-2019): Treatment of irrigation water and production of crops (lettuce)



HypoWave pilot-site at Wolfsburg Hattorf



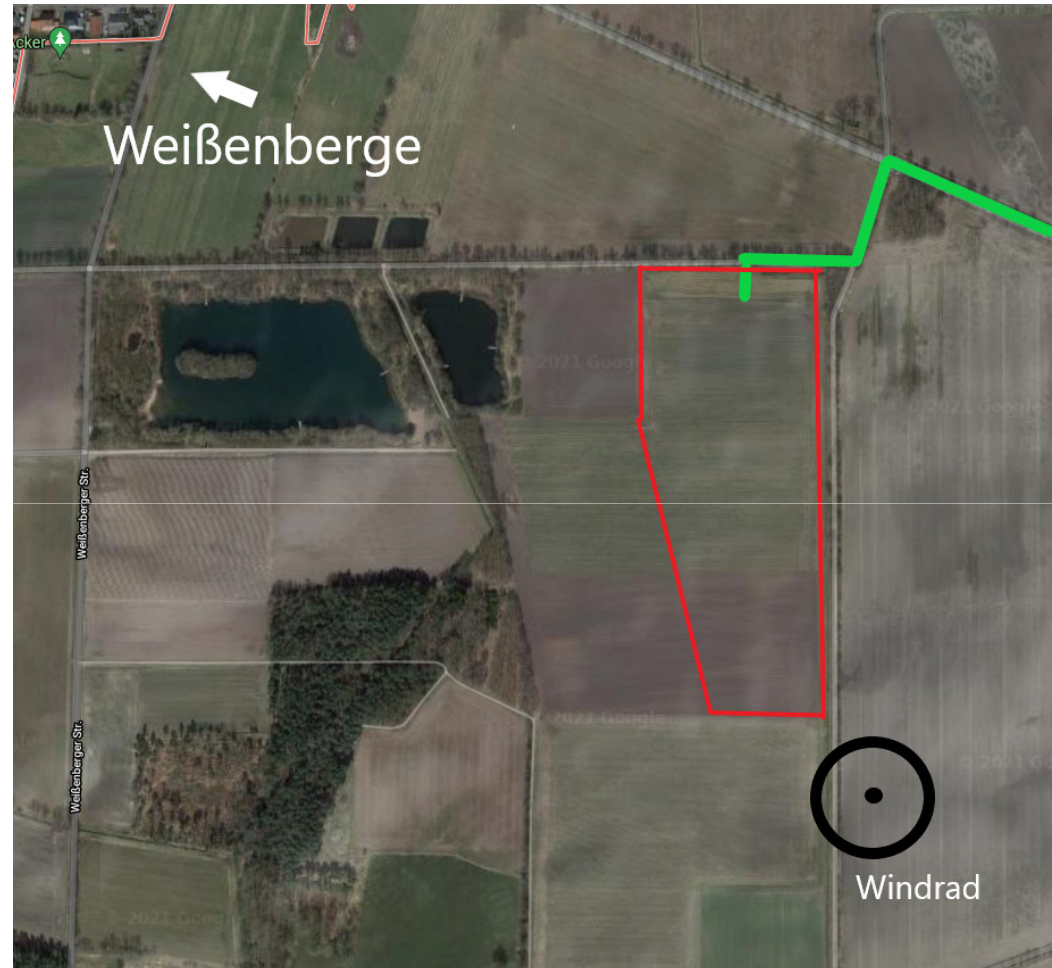
The HypoWave-case-study Weißenberge and the first full scale implementation



Nutzung des Ablaufs eines Klärteichs zur Gemüseproduktion im Landkreis Gifhorn

Eine HypoWave-Fallstudie

M. Mohr, B. Ebert, E. Schramm, J. Germer, G. Bürgow



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HypoWave+: First drawing of the full scale greenhouse (1 ha)



Source: Gefoma (2021)



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Products

- Water reuse: high quality irrigation water
- Nutrient recycling: Resource efficient reuse of nutrients
- GAC-Biofilter as new treatment option for removal of organic micropollutants
- Regional food production of high quality
- Biointelligent integrated system of water treatment and food production (artificial intelligence)
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Thank you for your attention!



water reuse,
regional products,
resource efficient,
sustainable innovation,....



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