

Quality improvement in vegetable production through robot-assisted slug control - MORE-Bot

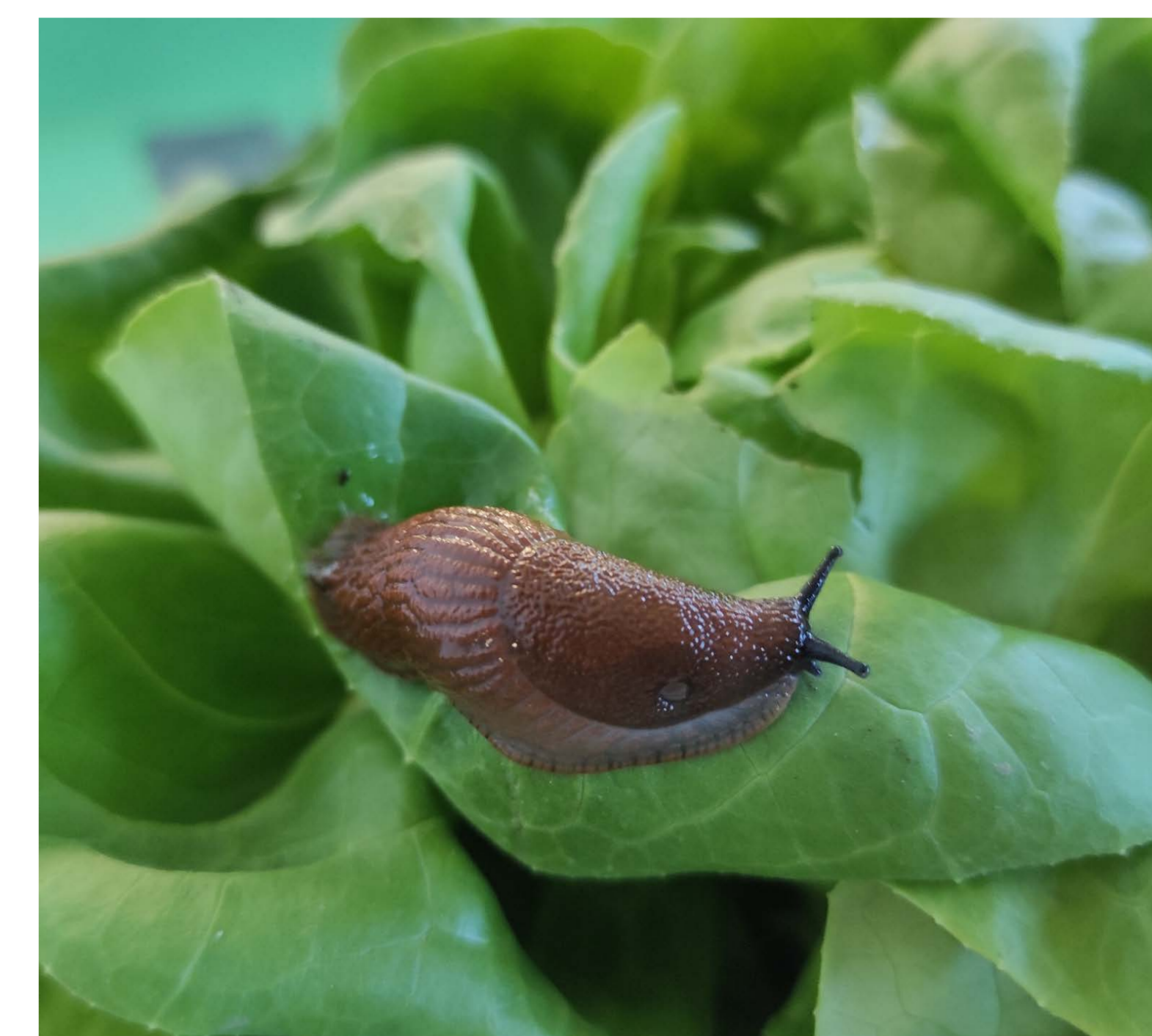
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Introduction

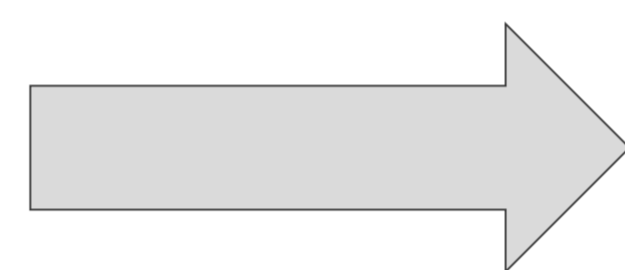
- Several slug species (*Arion* sp., *Deroceras* sp.) are important pests in horticultural crops
- Damage is caused by slugs due to feeding activity and contamination with slime or faeces, leading to lower quality of the products and financial loss
- The most common method for slug control is the spreading of slug pellets containing either metaldehyde or iron-III-phosphate as a molluscicide
- Besides preventive methods, manual collection of slugs in the field remains the alternative to chemical treatments



Slug on cabbage (left) and salad plant (right)

Aims and objectives

Development of a robot-assisted solution to control slugs in horticultural crops as alternative to the manual collection



- Navigate autonomously in the field
- Detect slugs on the plants using a camera
- Control slugs using a physical method
- Gather data on their occurrence in the field

Development and construction of a carrier vehicle

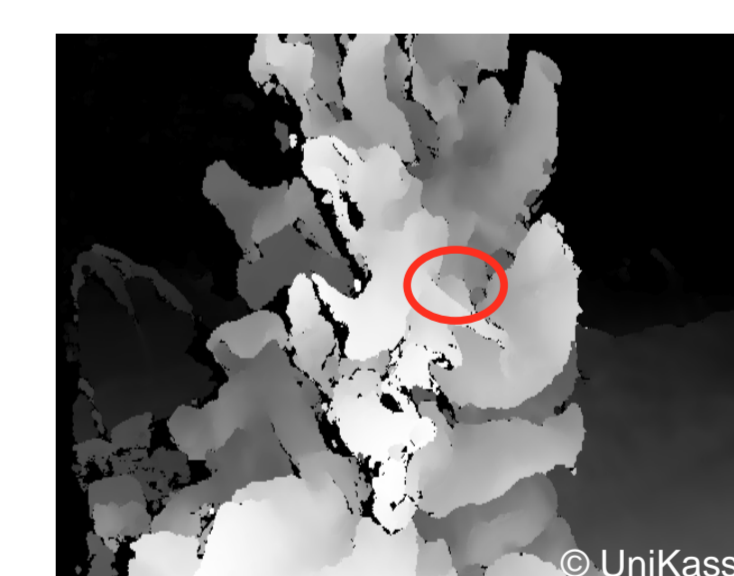
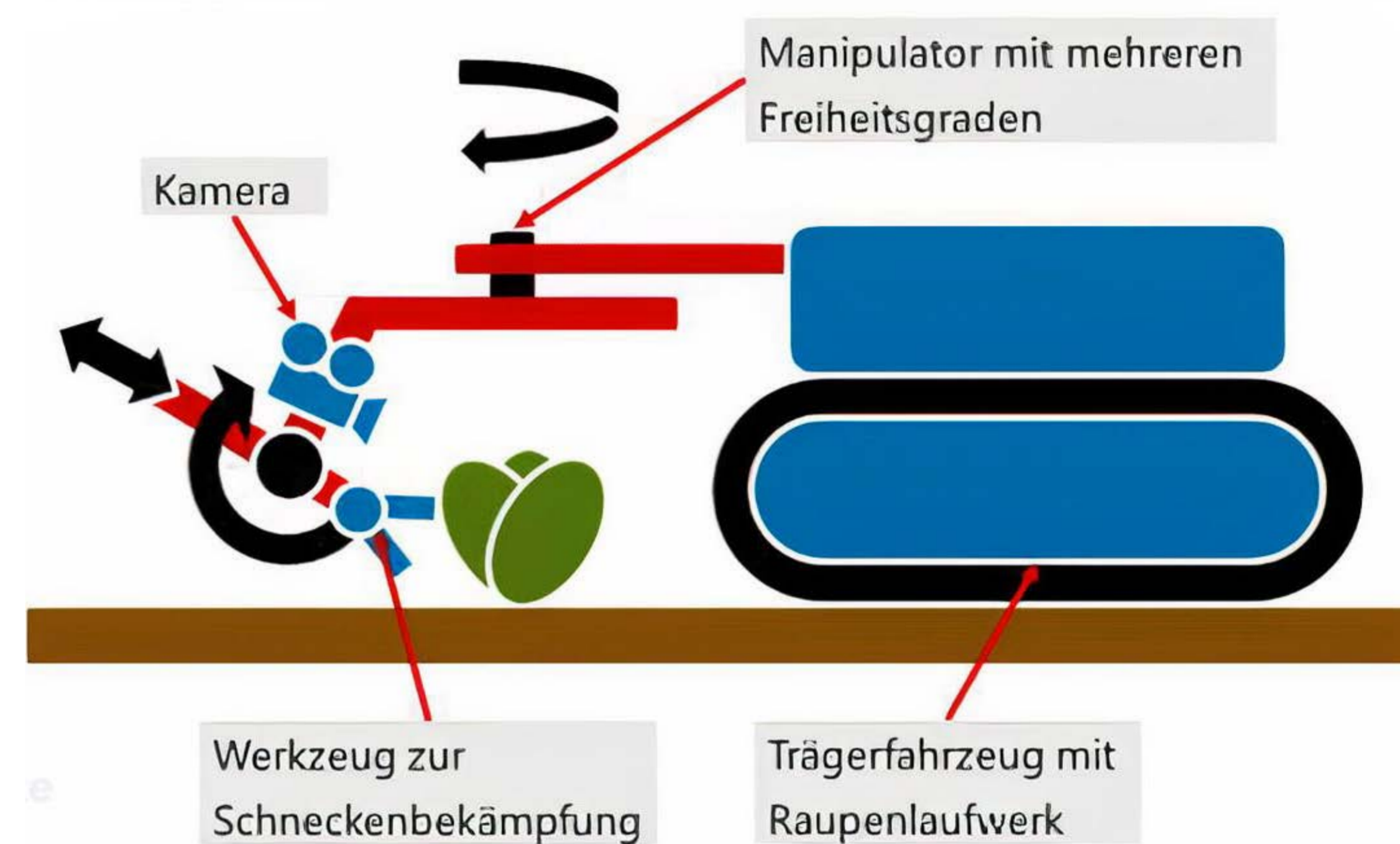
Development and construction of a robot arm to support the camera and the fighting tool

Development of a navigation unit for autonomous driving of the robot

Development of a system to detect slugs and determine their position on the plant

Development of a forecast model for temporal and spatial occurrence of slugs

Development and construction of a tool to control slugs using physical methods



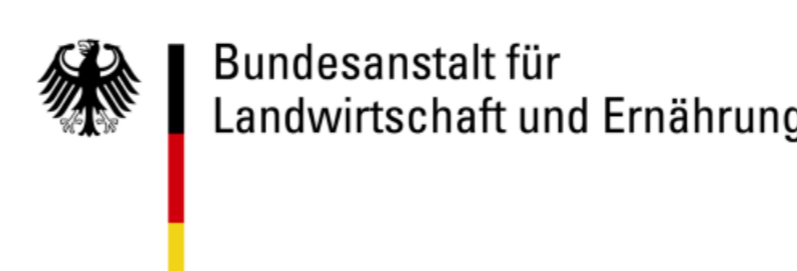
Outlook

- Practice-relevant and future oriented research topic
- Important contribution to the development and application of non-chemical plant protection methods
- Contribution to the knowledge of the behaviour of pests in the field
- Scientific progress in the field of robotics and image analysis

Project Partners



Funding



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