

# Impact of Sheep Grazing on Heterogeneity of Vegetation Index in Temporary Pastures

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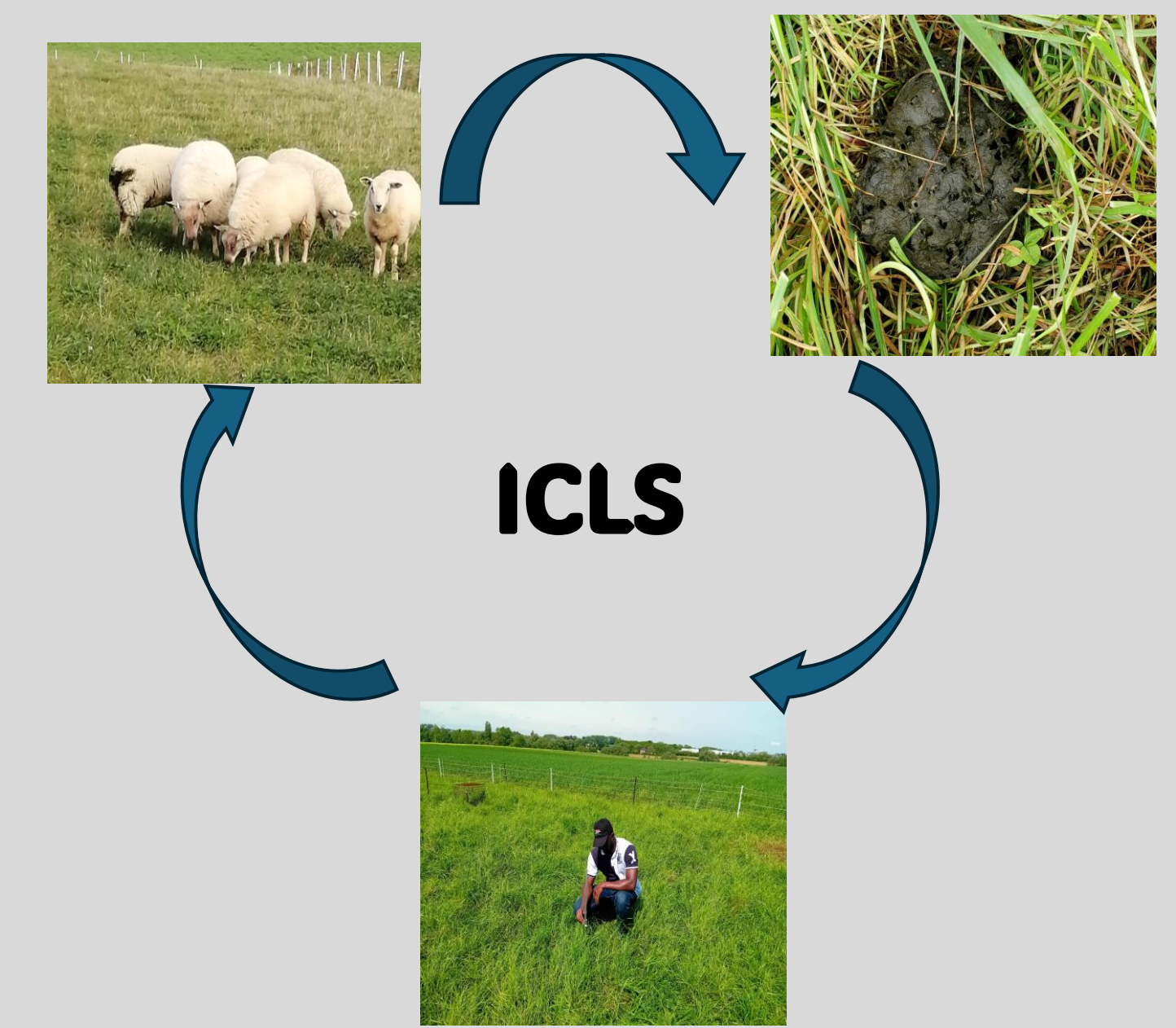
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## BACKGROUND

- Integrated crop-livestock systems (ICLS) enhance agricultural sustainability by optimizing resource use through temporary pastures .
- Grazing generates spatial heterogeneity in vegetation structure and nutrient distribution .
- Grazing could further complicate subsequent management operation in terms of fertilization and weed management.



Integrated Crop-Livestock Systems

## QUESTION

HOW DOES SHEEP GRAZING ON A TEMPORARY PASTURE OF AN ICLS CROP ROTATION IMPACT VEGETATION COVER VARIABILITY AND GRASS REGROWTH?

## MATERIALS AND METHODS

ICLS Rotation tested

Three Drone flights with DJI Mavic 3 M:  
• Flight before grazing  
• Flight at the end of grazing  
• Flight 15 days after grazing

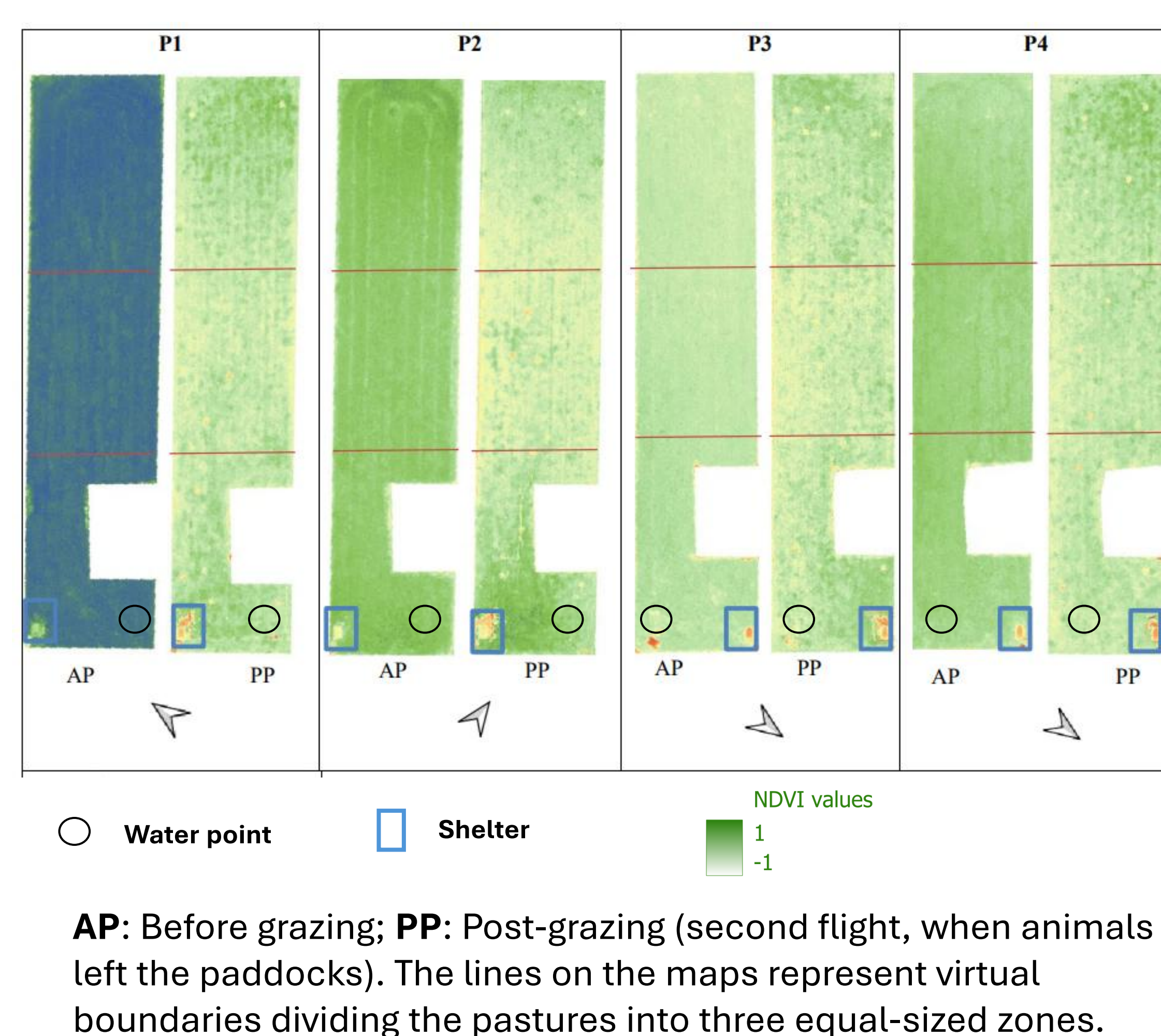
Sheep grazing in temporary pasture  
• Temporary pastures, part of an ICLS rotation

GPS RTK  
• Geolocation of sheep excretions in temporary pastures

**Activities carried out during the study**

## RESULTS AND DISCUSSION

- Decline of the NDVI value mostly in the central zone of the pasture.
- Heterogeneous distribution of sheep excretion in the pastures, with an average of  $660 \pm 62.85$  feces per pasture and a density of  $0.48$  feces  $m^{-2}$ .
- A positive correlation ( $r = 0.697$ ) between fecal density and minimum NDVI measured 15 days post-grazing, highlighted the influence of excretions on intra-plot variability.



## CONCLUSION

Sheep grazing induces spatial heterogeneity in temporary pastures, affecting both vegetation structure and nutrient distribution. Understanding these patterns is essential for optimizing pasture management strategies and improving nutrient cycling in integrated crop-livestock systems.

