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Authentication of grazing-related farming practices

Improvement and evaluation of a risk-based selection strategy for on-site farm inspections in the Netherlands



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Authentication of grazing-related farming practices

It all begins here



Authentication of grazing-related farming practices

- In the Netherlands: **on-site farm inspections**
- **Limitations:**
 1. **Who?** Which farm to select for an inspection?
 2. **When?** What is the optimal moment to perform the inspection?
 3. **And then?** On-site inspections only provide snapshot information.

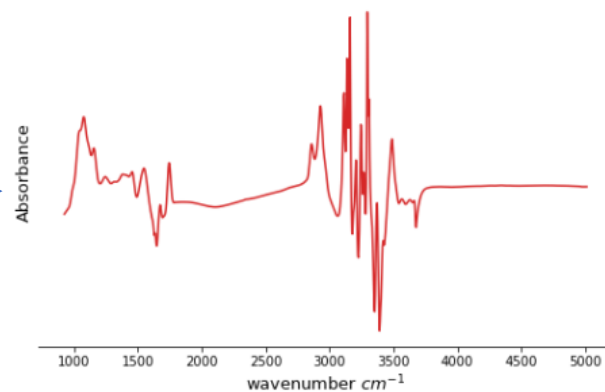
Meadow vs. non-meadow milk

- Differences in composition between (non-)meadow milk

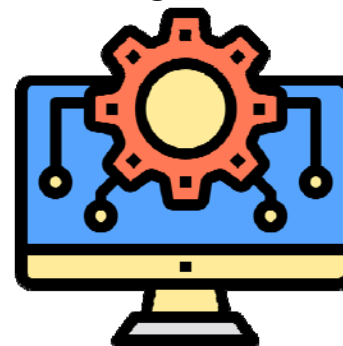
Herd bulk milk sample



FT-IR milk spectrum



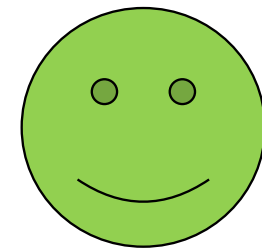
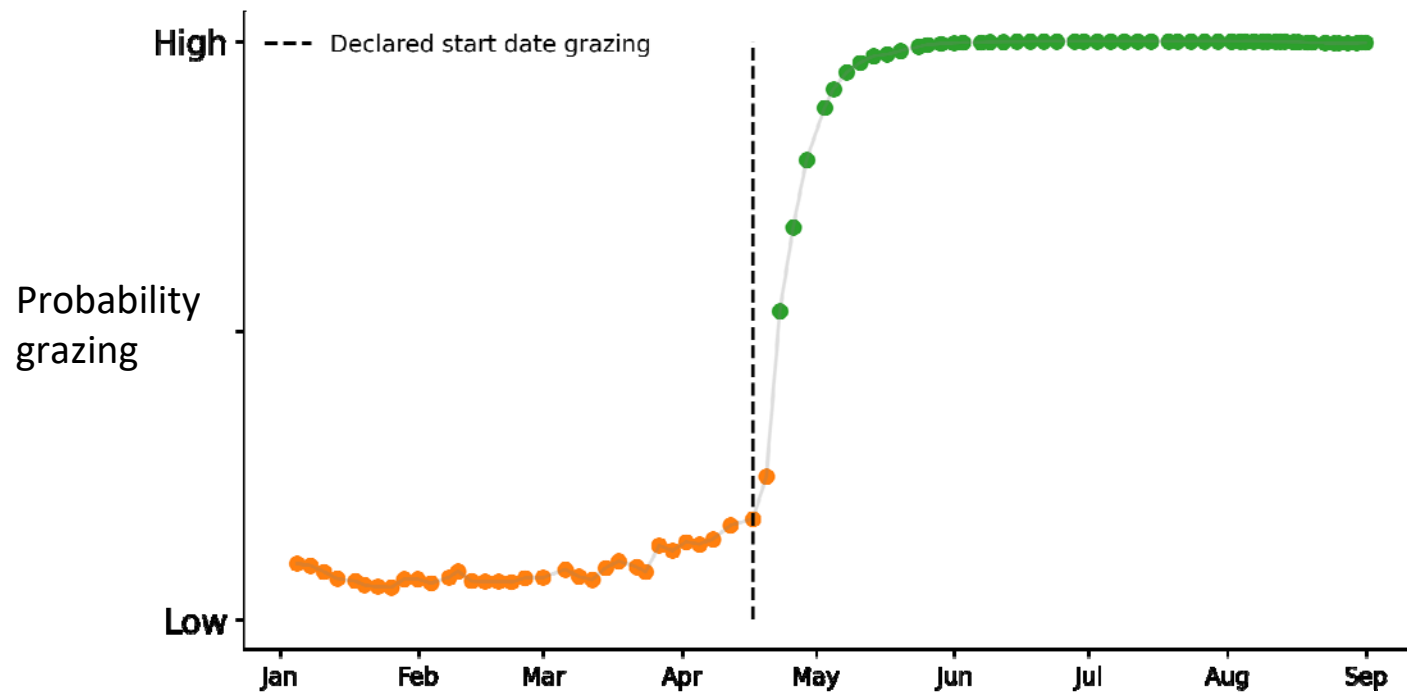
Grazing indicator



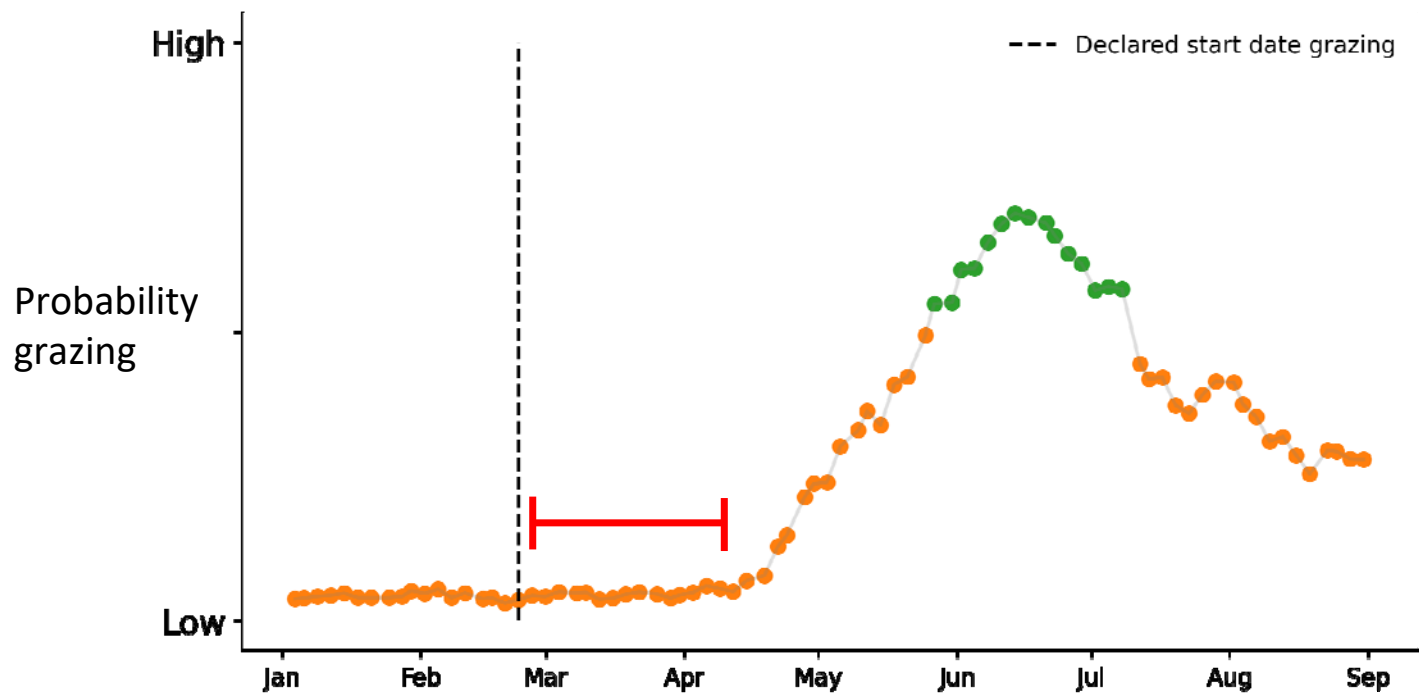
Meadow milk

Non-meadow milk

Grazing indicator



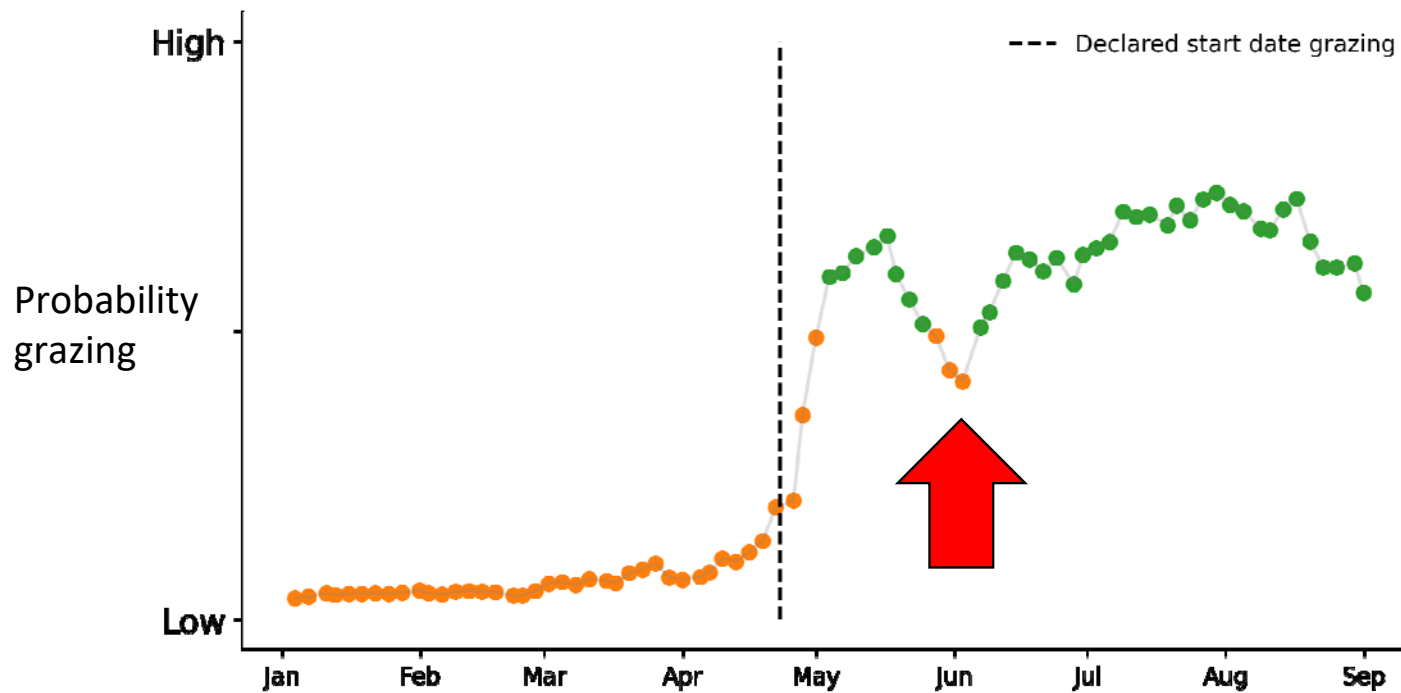
Grazing indicator



Out of 41 farms that were visited, 8 (= 19,5 %) received a negative assessment



Grazing indicator



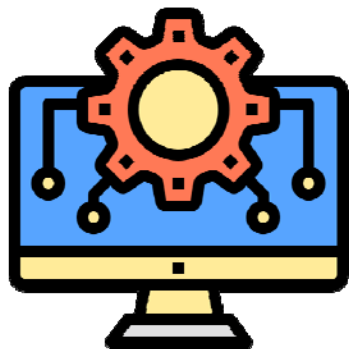
Out of 65 farms that were visited, 18 (= 27,7 %) received a negative assessment



From grazing indicator to automatic selection strategy

- Manual checking of >12500 dairy meadow farms not possible
- Solution:
 - Automatic risk-based selection strategy

Grazing indicator



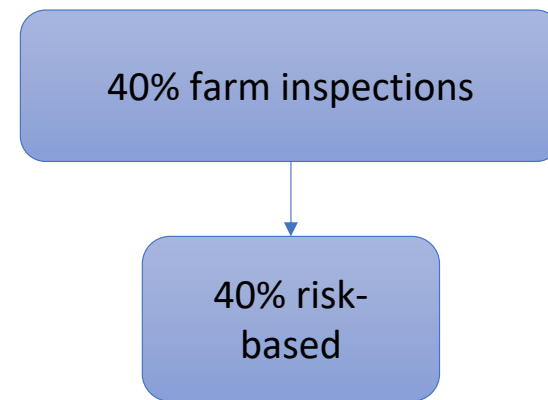
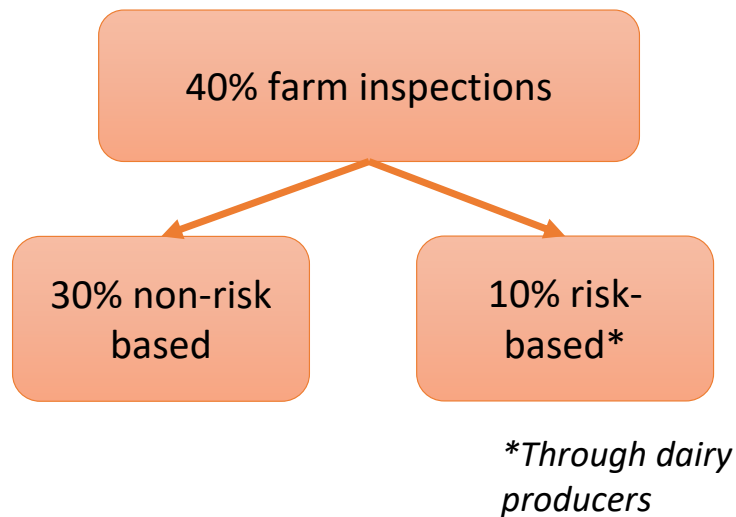
Selection
strategy

Risk farm 1
Risk farm 2
Risk farm 3
...

Evaluation of an automatic selection strategy

Experiment

Traditional inspection regime in NL **vs.** Proposed selection strategy



Evaluation of an automatic selection strategy

Results

Selecting farms with our proposed selection strategy resulted in twice as many inspections with a negative assessment

- Cost reduction
- Continuous monitoring of all farms (i.e., more than snapshot information)
- Automatic and objective procedure
- Identifying both: risk farms and those who do well
- It is 'just' software – no extra hardware required



Getting in the field

2022 Agreement with Dutch Grazing Foundation

Dairy producers can now choose between

- Option 1: 40% inspections with traditional inspection regime
- Option 2: 20% inspections with proposed selection strategy



Aknowledgments

- Development
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Thank you for your attention!