

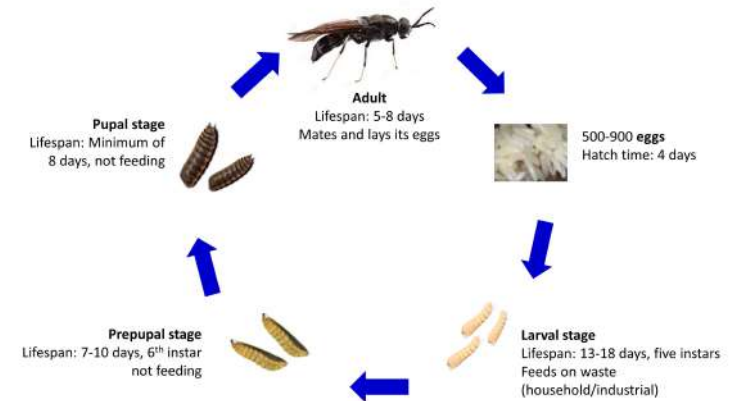
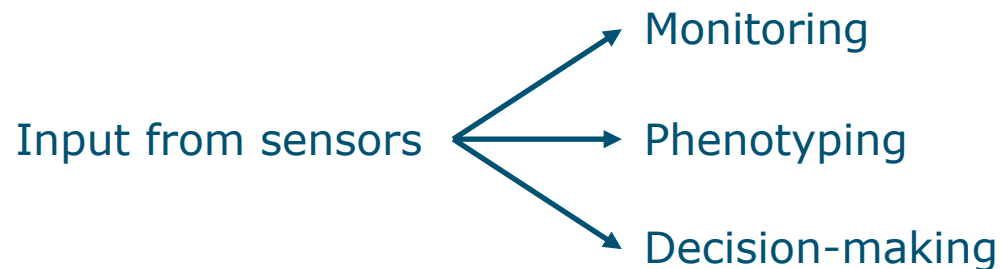
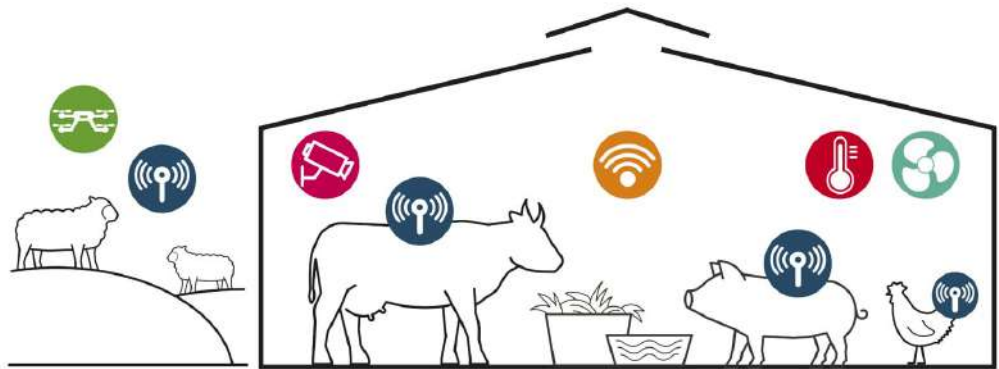
High-throughput phenotyping of Black Soldier Flies – A survey of challenges and needs in the industry

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Motivation for this exploratory project



BSF

Evolutional distance
Size, lifestyle, ...
Management

- Did not benefit from "traditional" PLF
- Difficult to get data on animals

Aims

- Gain a deeper understanding of BSF breeding/producing companies' challenges
- Role of sensor-based measurements (for phenotyping or monitoring) during the life cycle of BSF in addressing some of these challenges

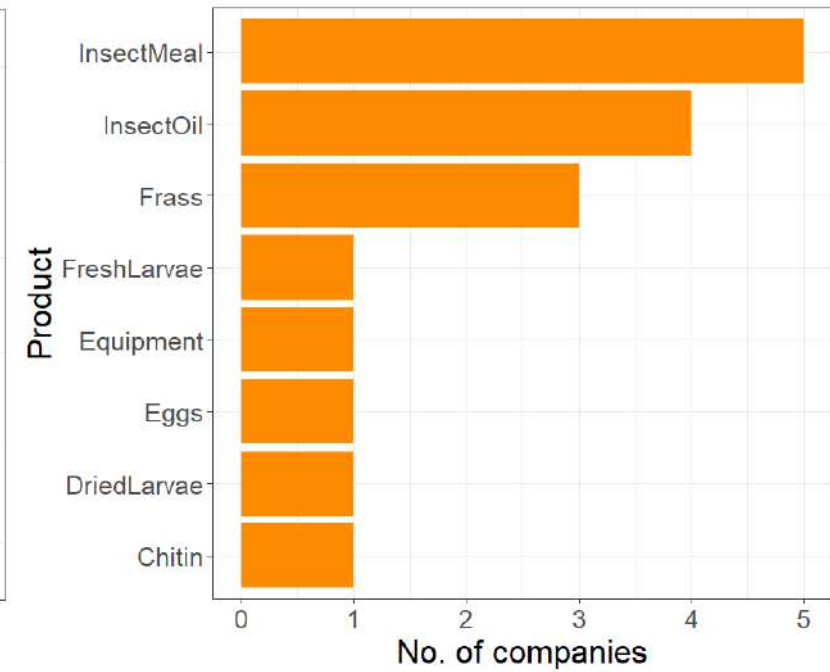
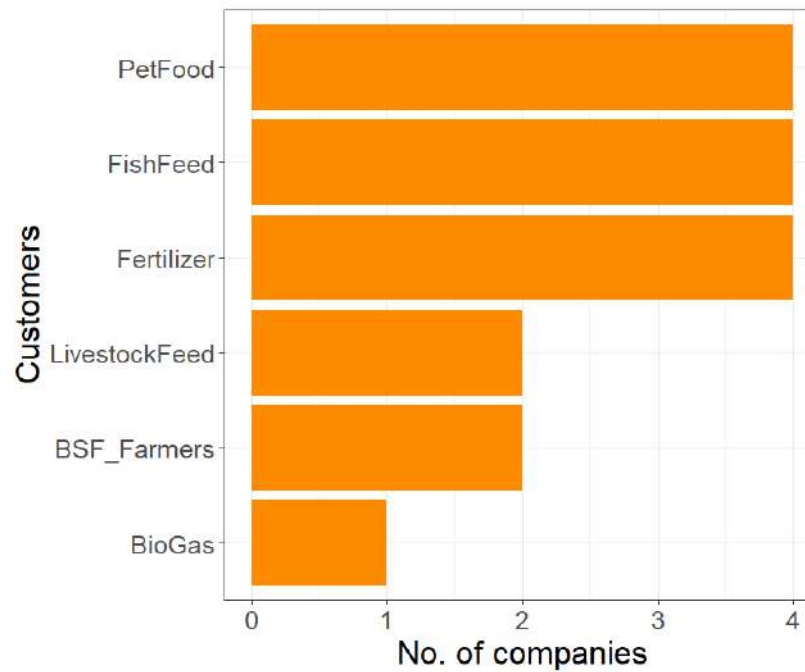
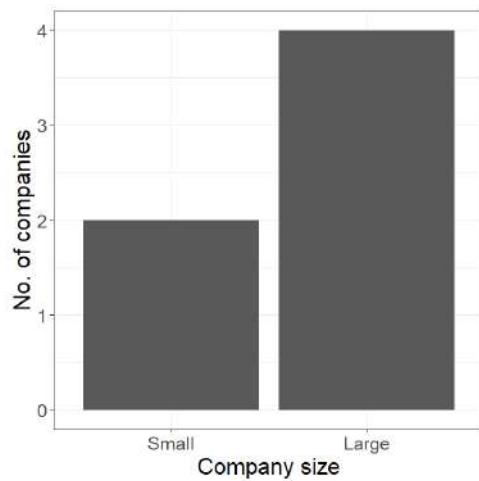
Company interviews

- October – December 2024
 - 6 companies
 - Europe & Asia
 - Questionnaire-based interviews
 - 21 questions, mostly open
- Responses grouped and summarized afterwards
- Companies anonymized



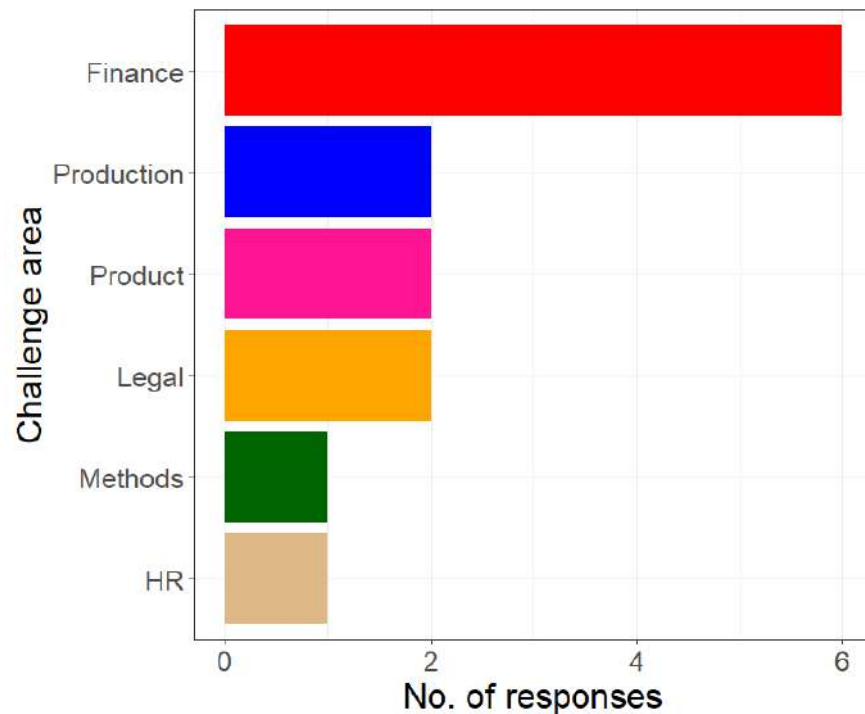
Results

Company profiles



Company challenges

Challenge areas

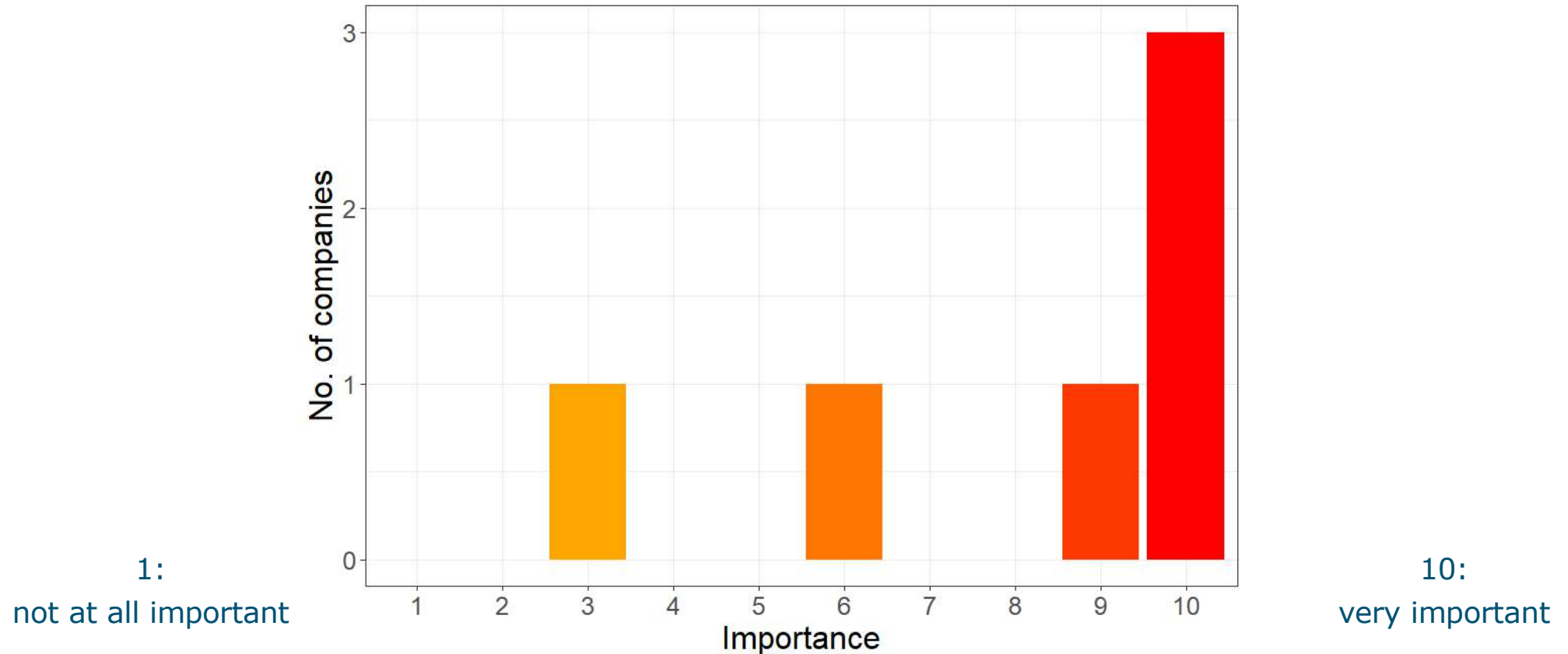


Specific challenges



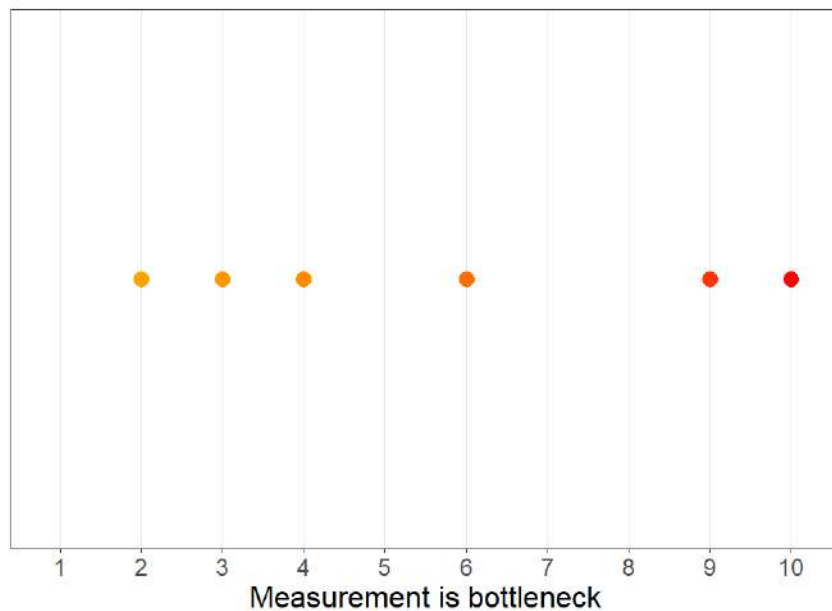
Finances as general problem
EU legislation also limiting external factor
(e.g., substrates allowed)

How important is the measurement of traits?

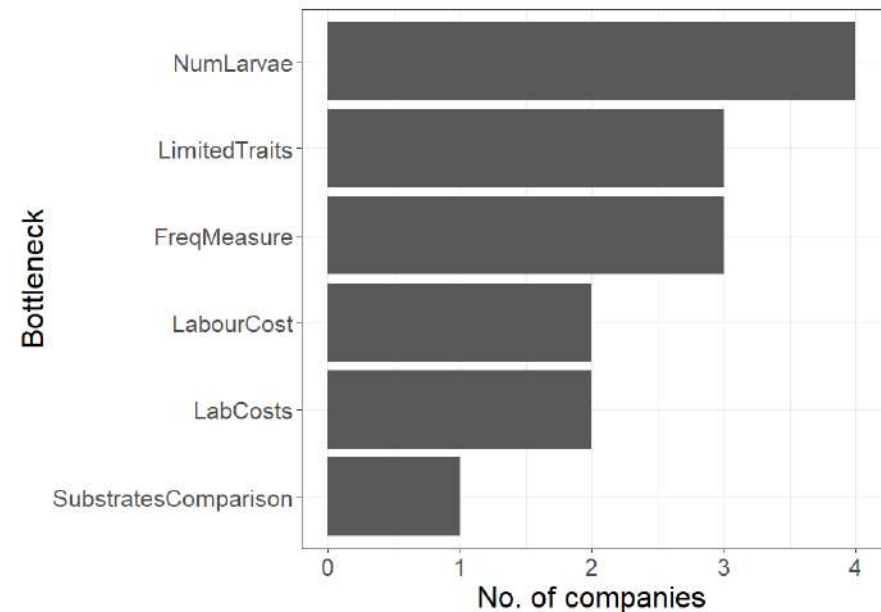


Is the measurement of traits a bottleneck for the company?

General score



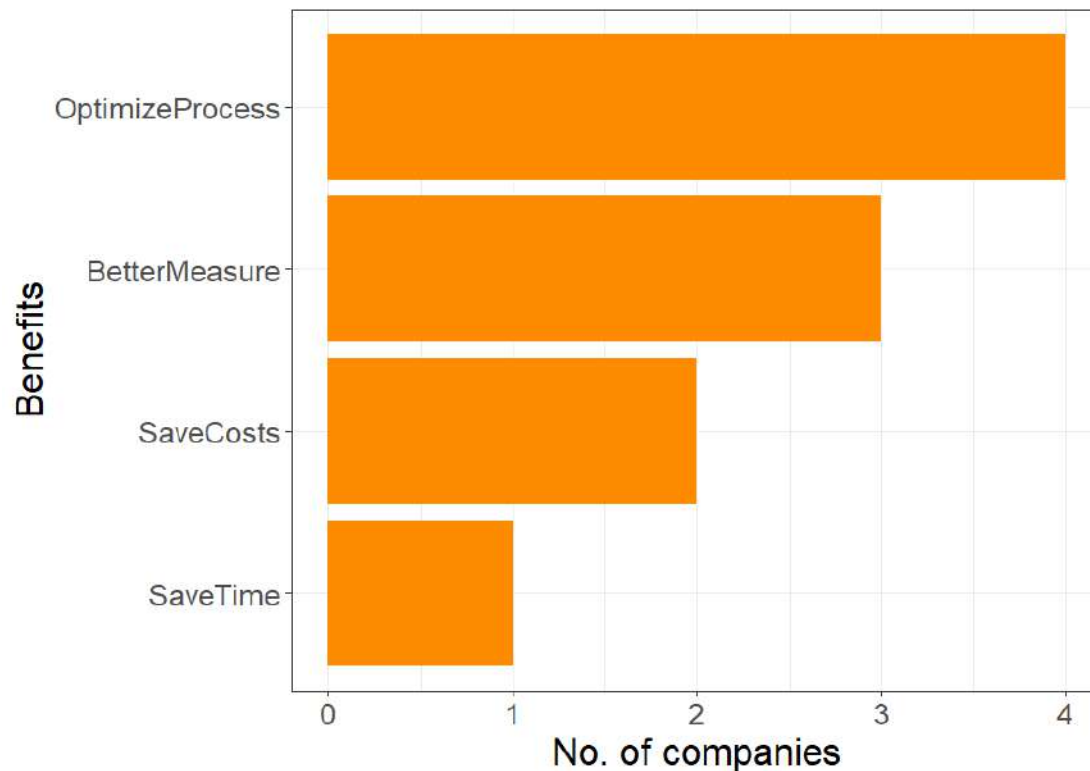
Specific bottlenecks



1: not a bottleneck; 10: very important bottleneck

More subjects
More traits (e.g., behaviour)
More frequently

Benefits of high-throughput sensor-based tools?



Process optimization

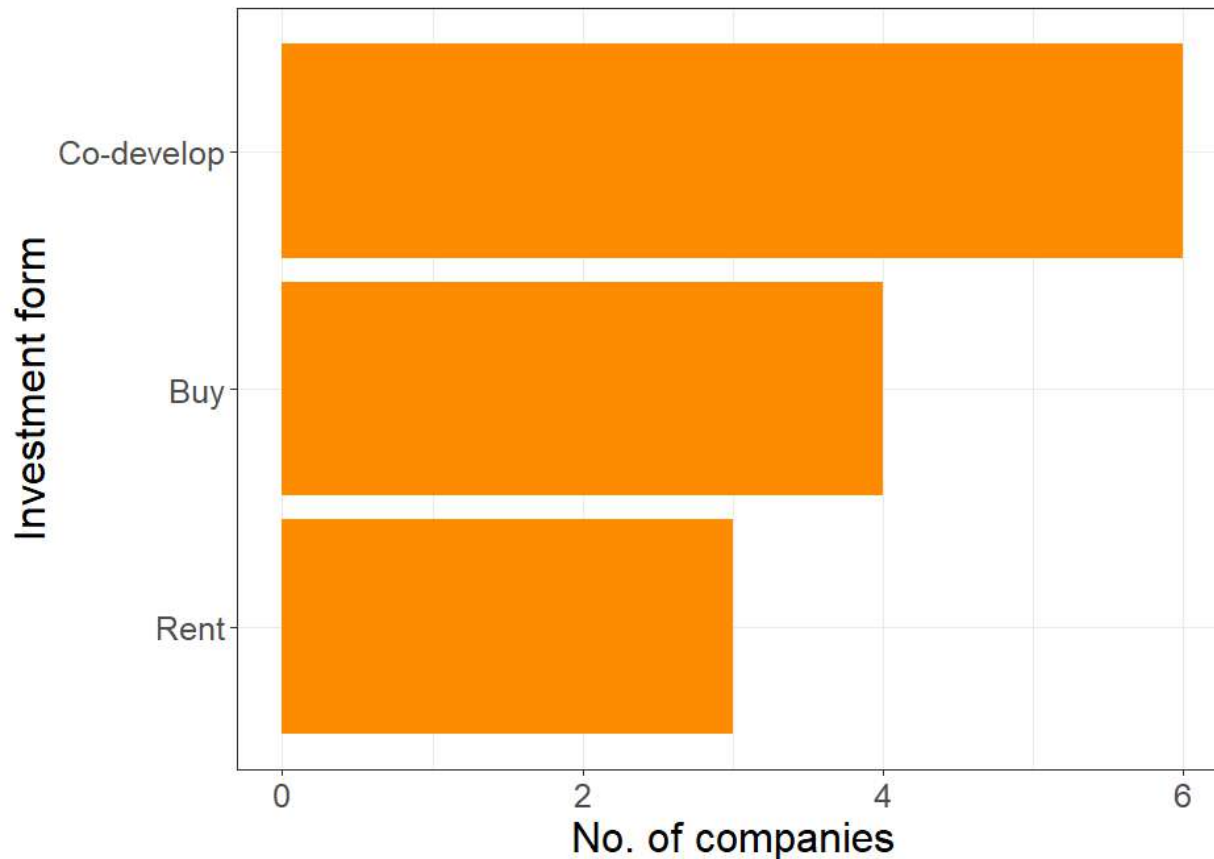
Real-time input for control systems

E.g., climate, feed quality

“Better” measurements

E.g., less subjective, more detailed

Form of investment



Co-development is first choice

Solution should work in company-specific environment

Rental: mostly to test before purchase

Conclusions

- **Finances** – general challenge across companies
 - **Feed costs!** & related **EU legislation** limiting low opportunity cost biomass
- Measurements on BSF **very important**, but not always perceived as a bottleneck for business operations or realizing ambitions
- Everyone sees the **benefit of sensor-based** monitoring/phenotyping tools
 - Better grip on processes & more objective and detailed data
 - Needs are very company-specific:
 - **Co-development** most popular investment form
 - Addresses **company-specific problems**
 - **Works** in company-specific environment

Acknowledgements

- All interviewees
- Funding: ACRRES



Thank you!

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