

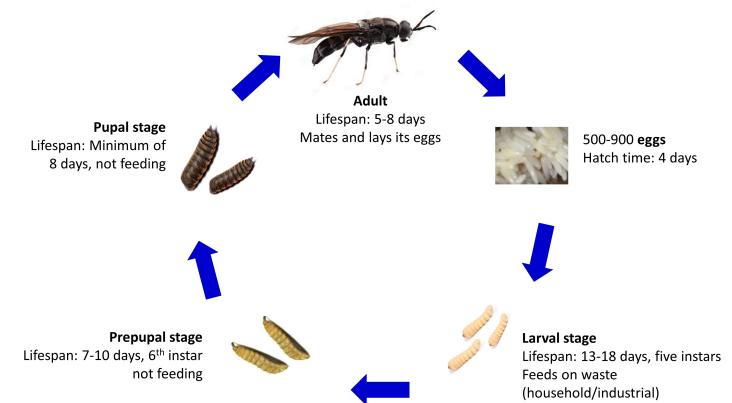
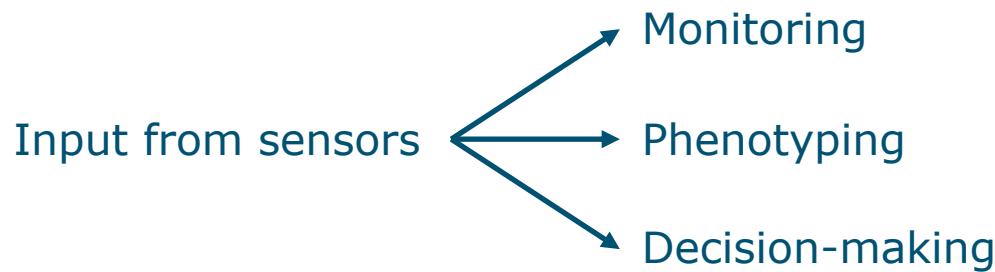
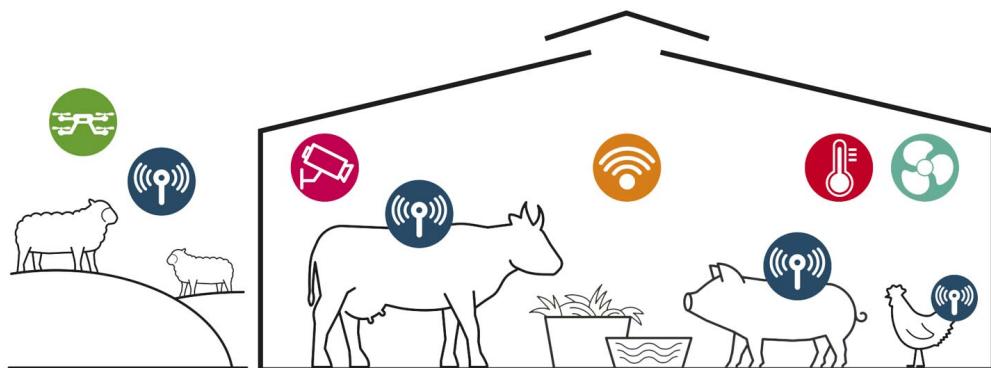
High-throughput phenotyping of Black Soldier Flies – A survey of challenges and needs in the industry

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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

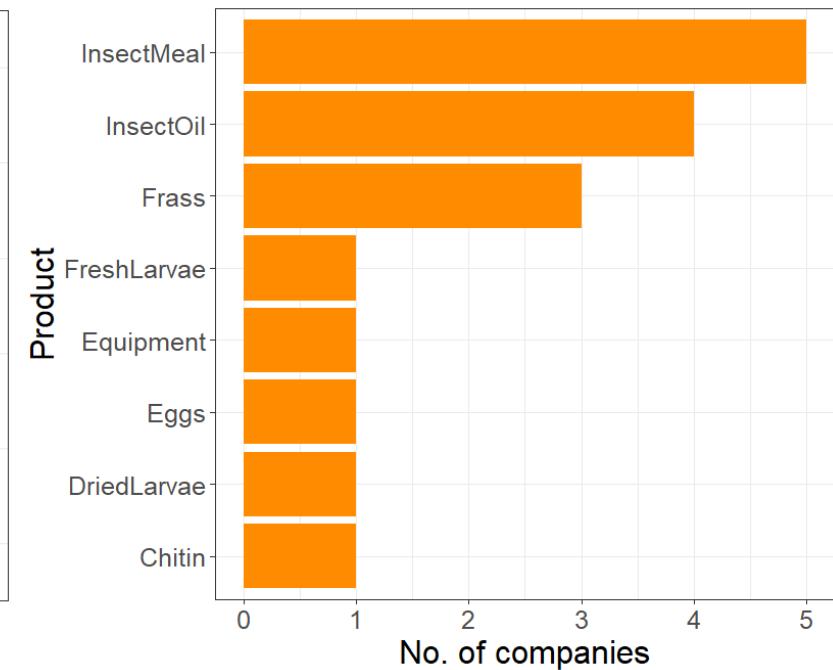
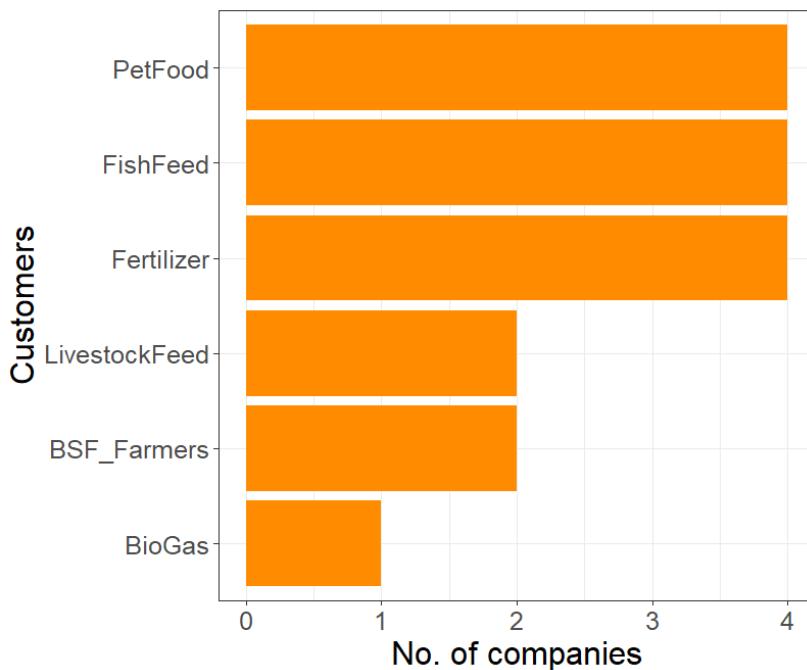
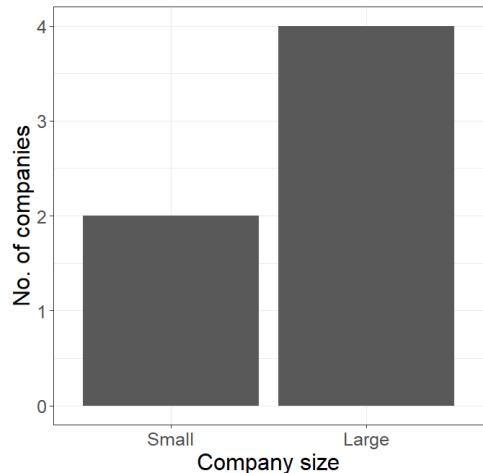
Company interviews

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

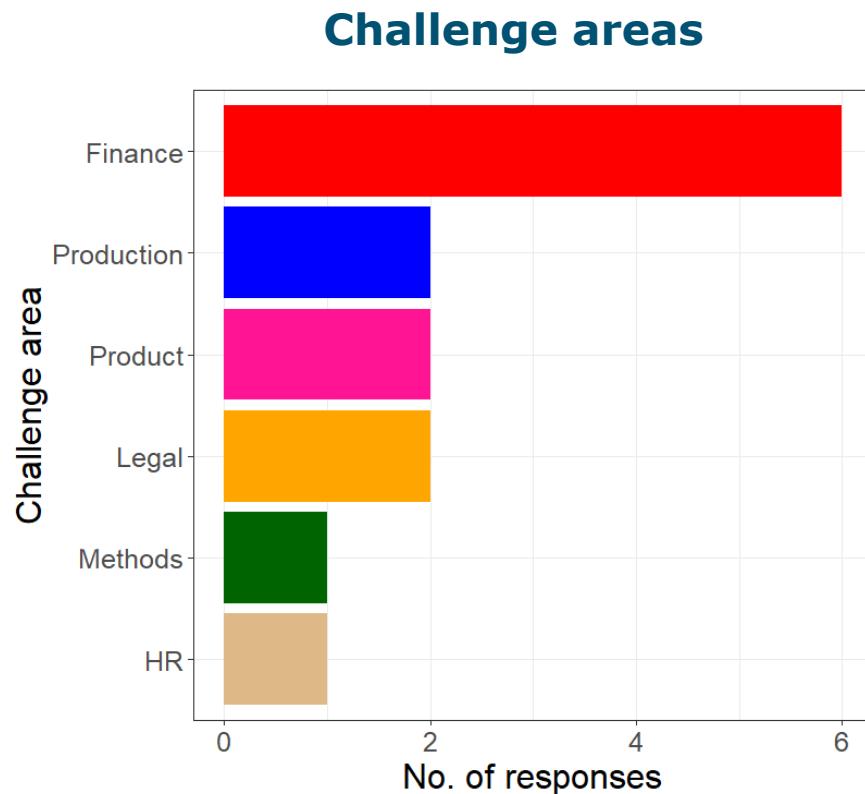


Results

Company profiles



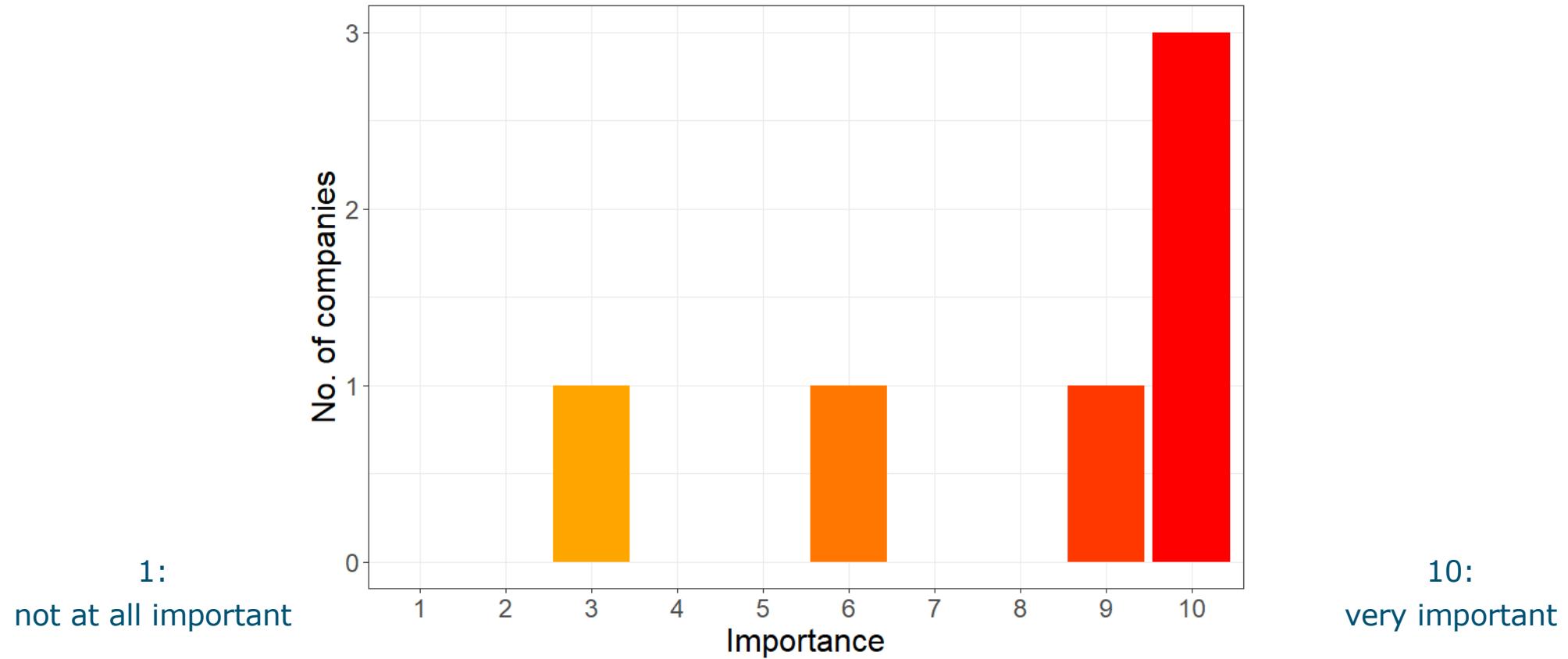
Company challenges



Specific challenges

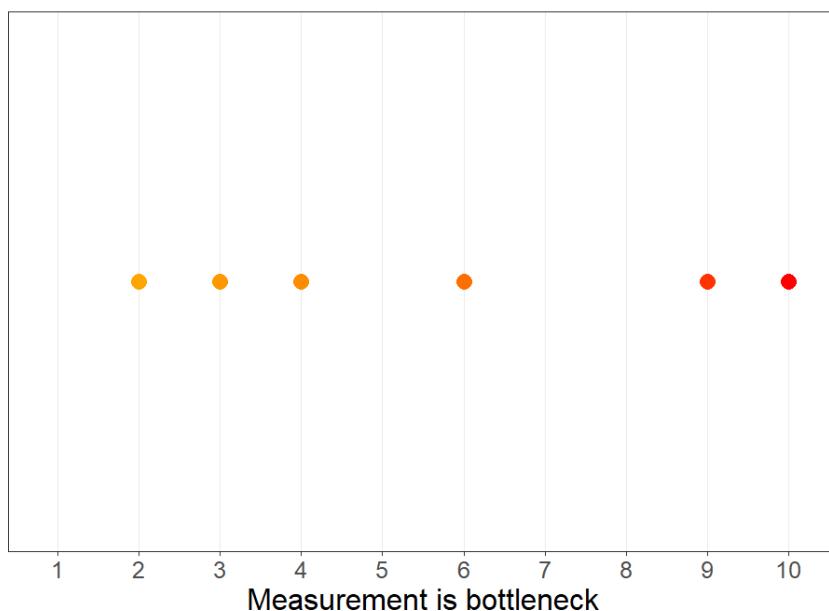
SalesPrice
EndProduct_composition
Legislation
Emissions
GetPersonnel
Counting
CapacityIncrease
DemonstrateFunctionalities
LabourCost
EnergyCost
FeedCost
ProductionCost
ProfitabilityExpectations

How important is the measurement of traits?

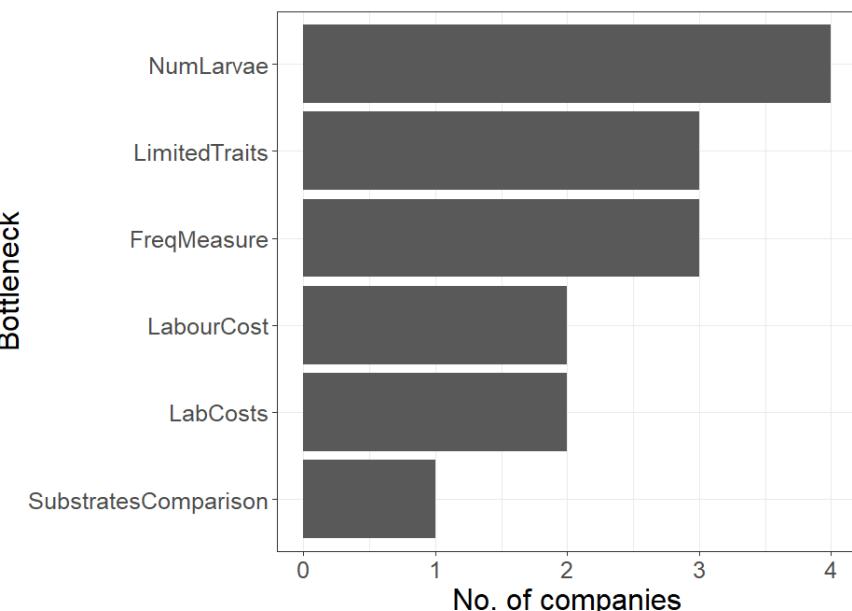


Is the measurement of traits a bottleneck for the company?

General score

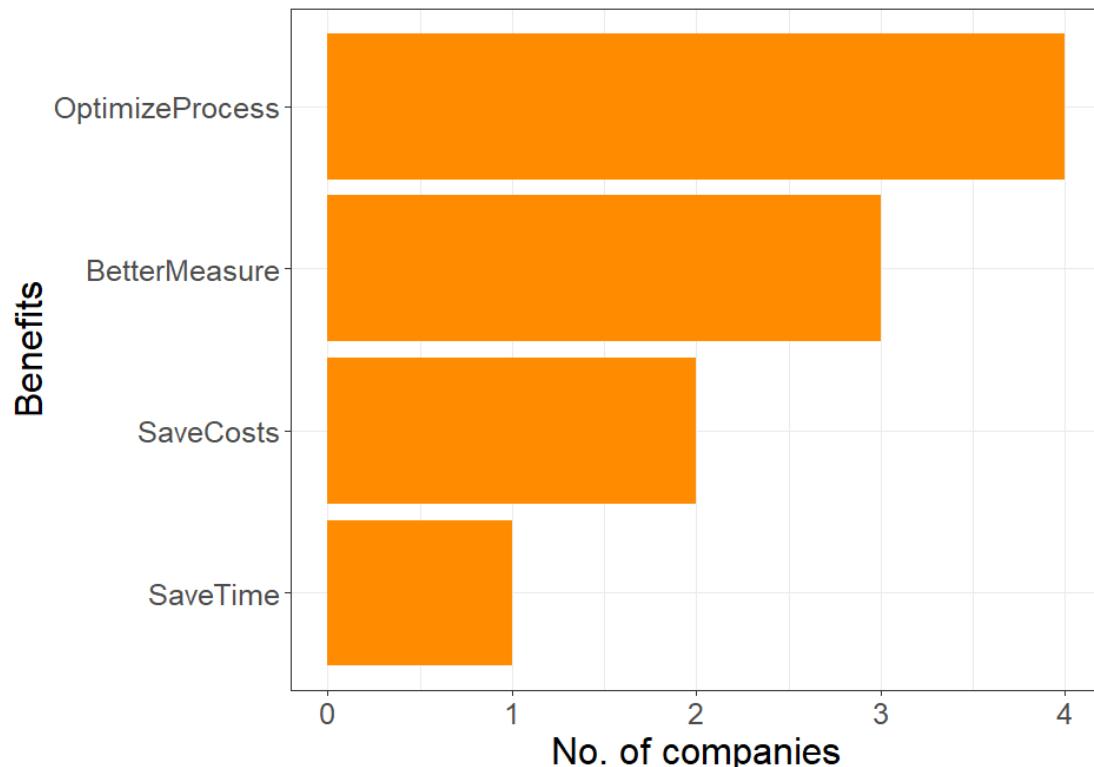


Specific bottlenecks



1: not a bottleneck; 10: very important bottleneck

Benefits of high-throughput sensor-based tools?



Process optimization

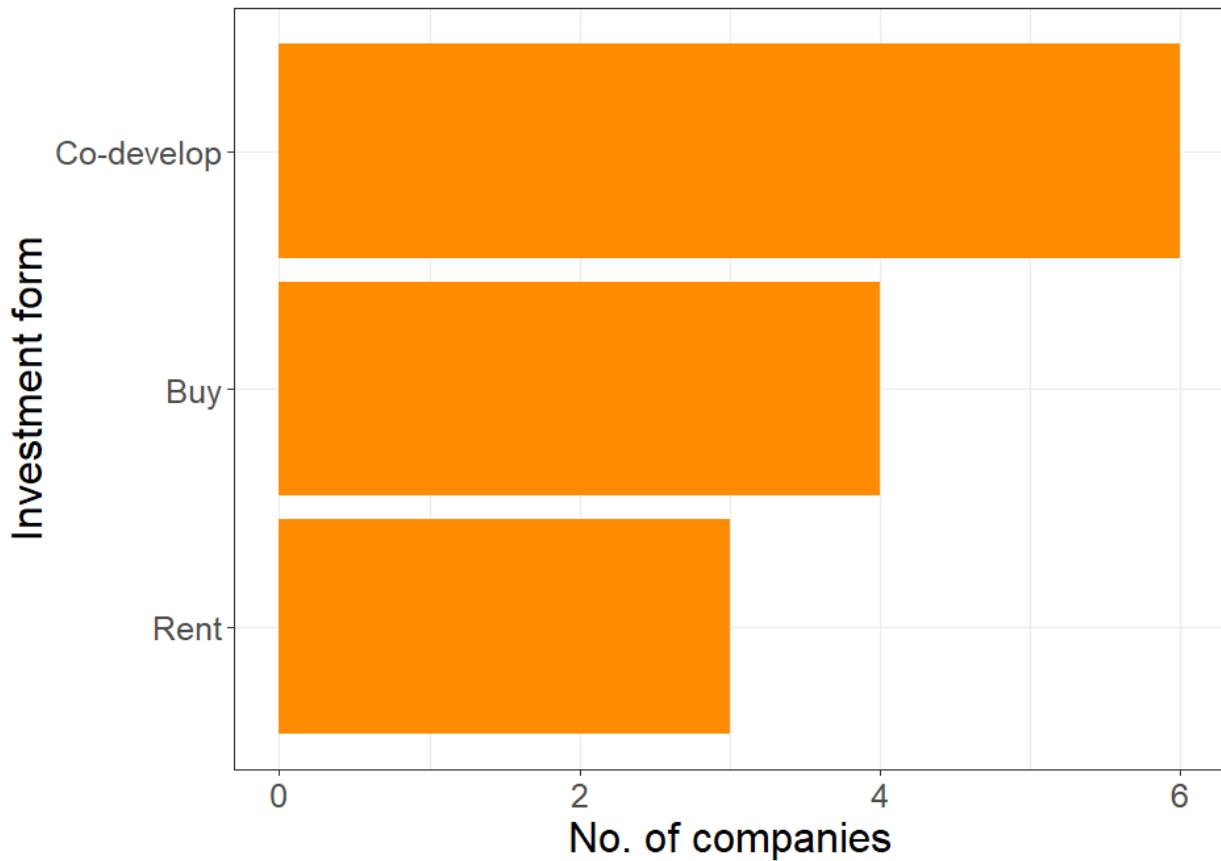
Real-time input for control systems

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
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Thank you!

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