



We have
1001 reasons
to invest in sorghum

SORGHUM IN THE NUTRITION OF MONOGASTRIC ANIMALS

Feeding trials and practical experiences



We have
1001 reasons
to invest in sorghum



4th European Sorghum Congress Budapest

October 8th - 9th 2025



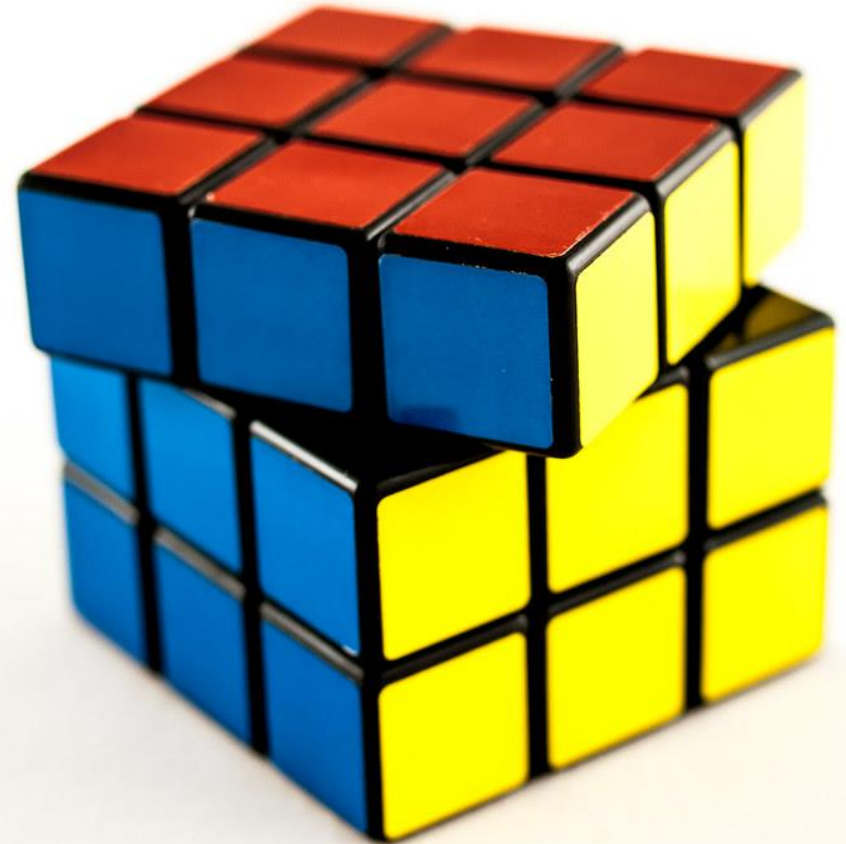
Orsolya Varga, PhD

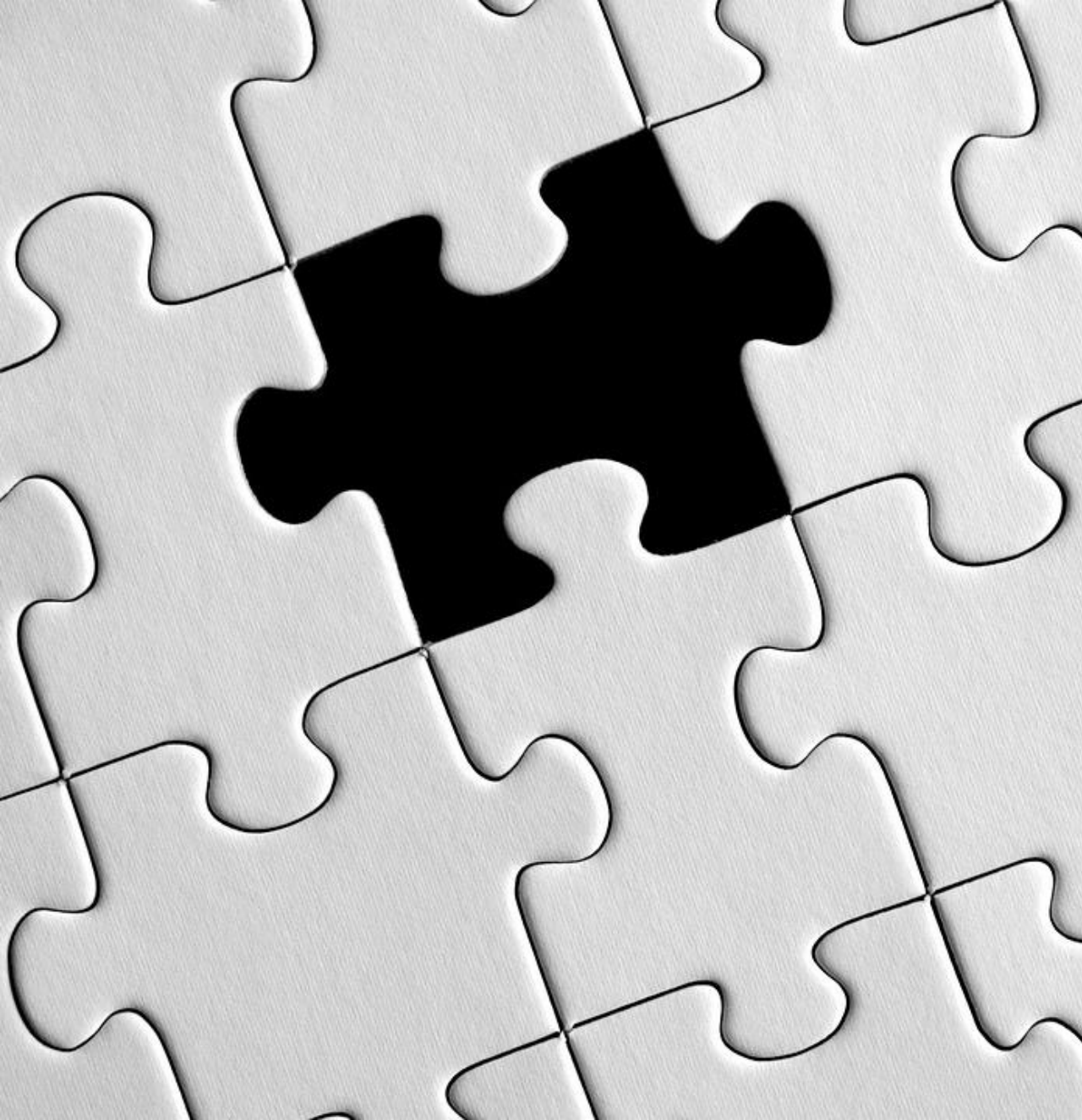
R&D manager

Bonafarm-Bábolna Feed Ltd.

**„If you are curious, you'll find the puzzles
around you. If you are determined, you
will solve them.”**

Ernő Rubik



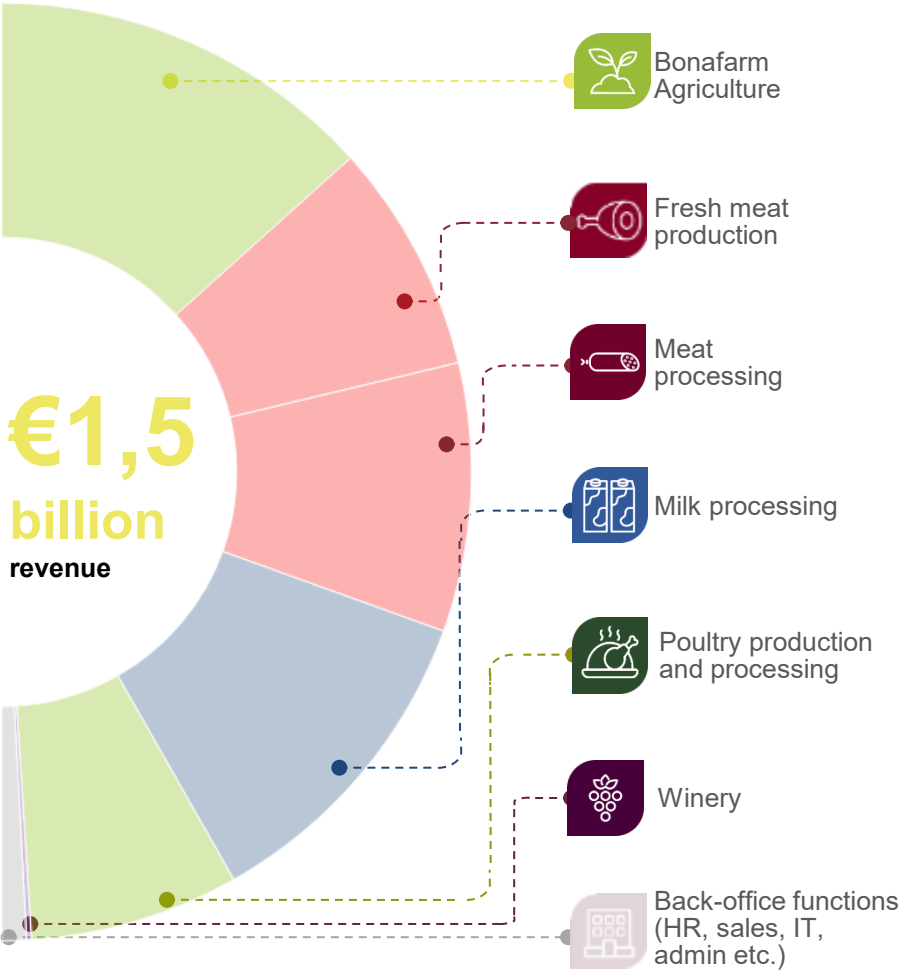


How sorghum fits in Bonafarm-Bábolna's puzzle?

Who we are?

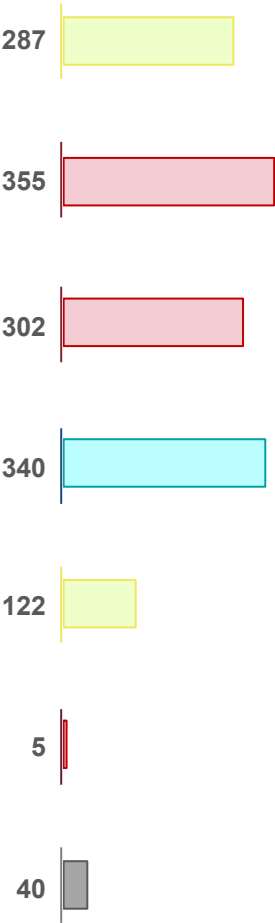
Member of Bonafarm Group - the biggest agriculture and food industry player on the Hungarian market

Revenue breakdown (%) – 2024

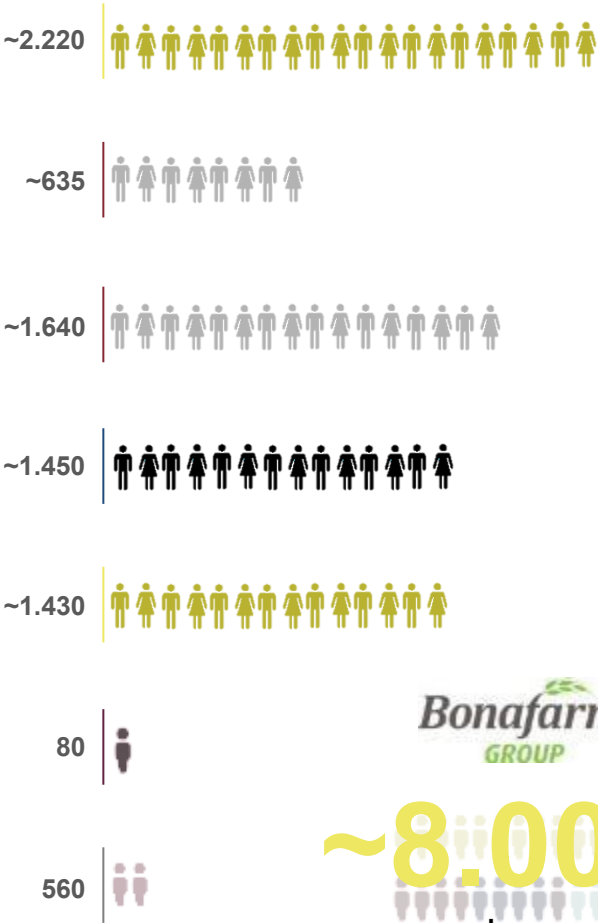


Based on 2024 data.

Revenue million EUR – 2024

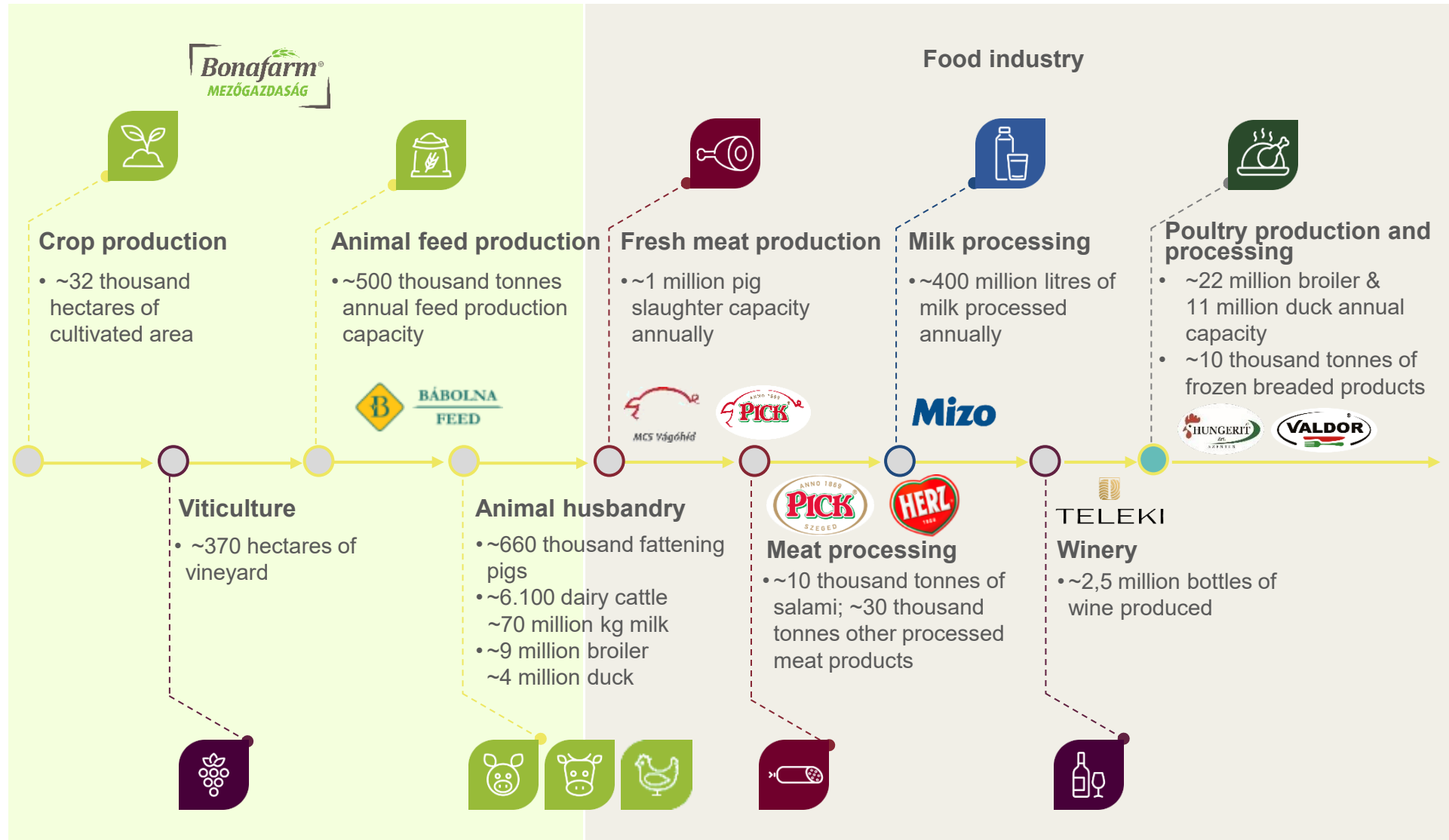


Number of employees (FTEs) – 2024

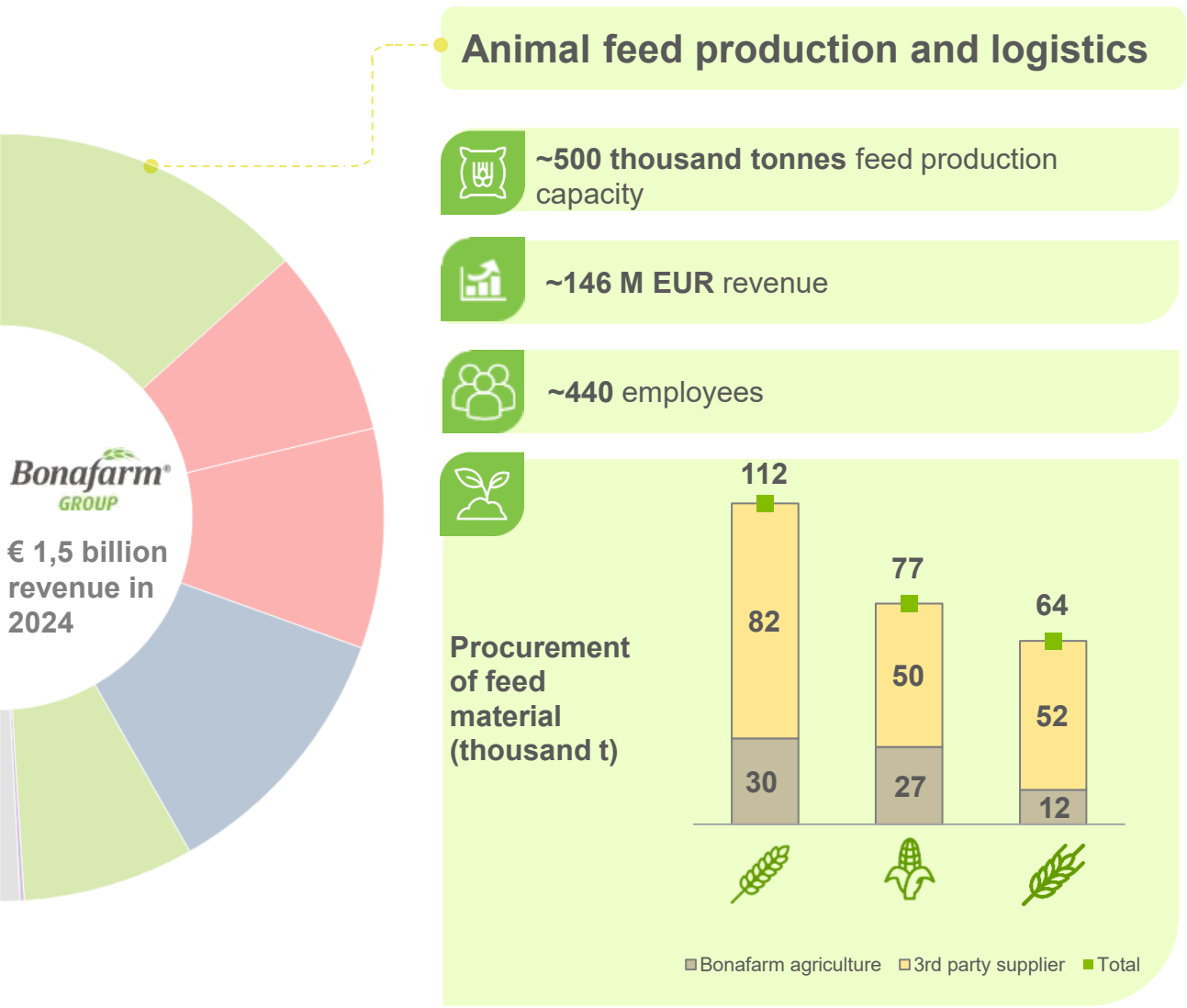



~8.000
employees

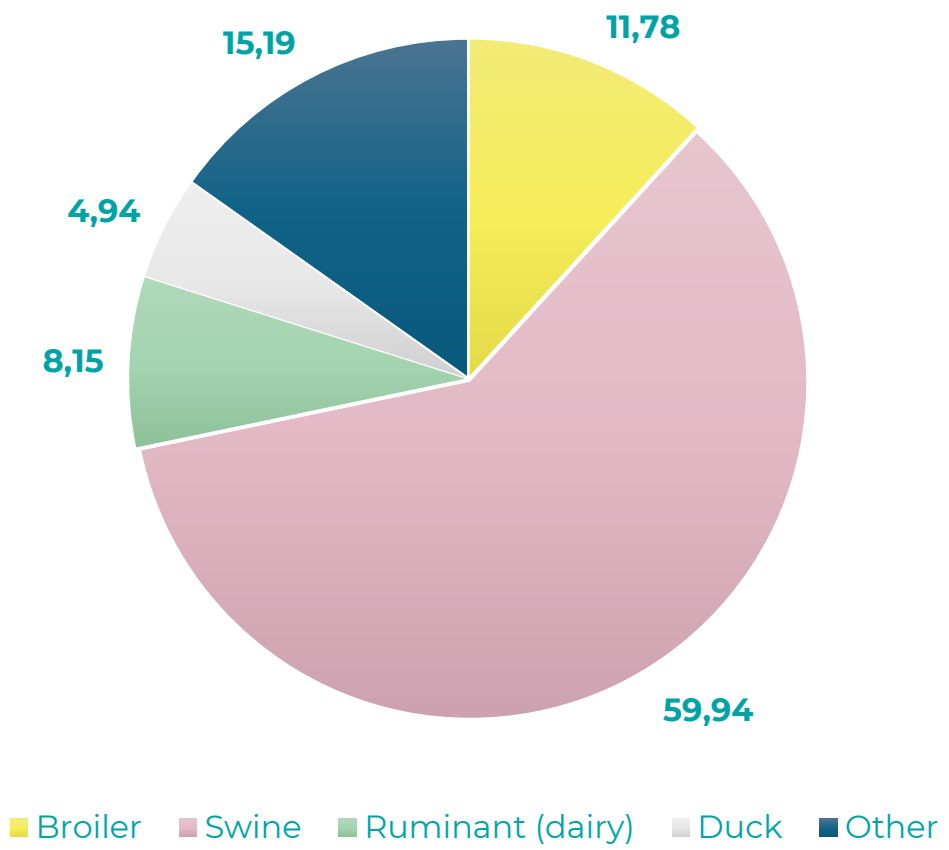
From land to table...



Based on 2024 data.



Complete feed production per species (%)



As an innovation driven company...



Our purpose

Finding and supplying

- **economically** and **ecologically** efficient
- **sustainable** solutions

for the challenges in animal nutrition

Sorghum in sustainability

Environmental sustainability

1. Low Water Requirement

- **drought-tolerant** (less water requirement than maize)
- Ability to grow at **arid and semi-arid regions**

2. Efficient Resource Use

- **fewer inputs** (fertilizers and pesticides)
- ability to grow in **poor soils**

3. Carbon Sequestration

- **deep roots**, which help store carbon → **improving soil health**
- **reduce erosion** and increases organic matter in the soil

4. Climate Resilience

- **highly adaptable** to climate variability
- valuable crop in the face of climate change

Economic Sustainability

1. Low Input Costs

- Reduced need for irrigation, fertilizer, and pesticides → **lower costs** for farmers → **good grain price**

2. Diverse Applications

- food
- animal feed
- biofuels
- industrial products

Versatility makes it market resilient and economically attractive

The major grains supplying energy in monogastric diets

	Wheat	Barley	Maize	Sorghum
Protein (%)	11.0	9.9	7.6	9.3
Starch (%)	60.0	52.3	63.8	64.6
AMEn	12.0	10.9	12.9	13.6
NE (swine)	10.6	9.7	11.3	11.2
Advantages	Good pellet quality	Hull is a good structural fibre	Good digestibility	High protein and energy content Good price
Factors that must be taken into consideration	Soluble NSP's enzyme addition is needed	NSP content → enzyme addition is needed; Lower in energy	Susceptible to molds → mycotoxin contamination	Grinding, particle size High inclusion → changes in the color of the products





Feeding trials with sorghum

THE EFFECT OF REPLACING MAIZE WITH SORGHUM ON THE PERFORMANCE OF BROILER CHICKENS

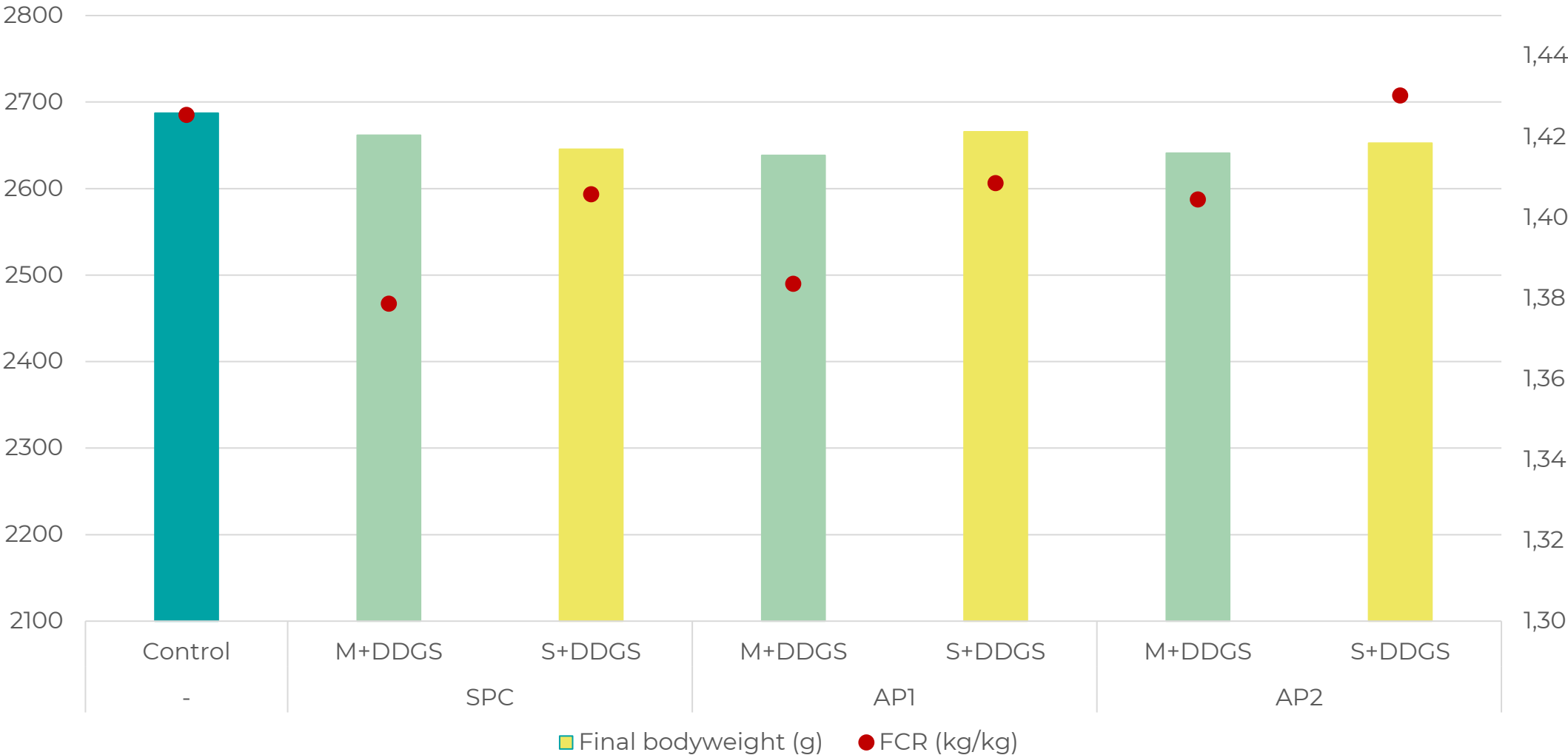
Materials and methods

- ROSS 308; n=450/treatment
- 35d of fattening
- Different protein sources in the starter phase: soyprotein concentrate (SPC), animal protein 1 (AP1); animal protein 2 (AP2)
- Control: wheat-barley-corn based, without DDGS and sorghum
- Treatments:

Phase	Age	Maize (M) and DDGS%	DDGS and sorghum (S)%
Starter	0-10d	-	-
Grower I	11-21d	24%+20%	3.4%+32%
Grower II	21-30d	27.5%+20%	20%+38%
Finisher	31-35d	29%+20%	20%+40%

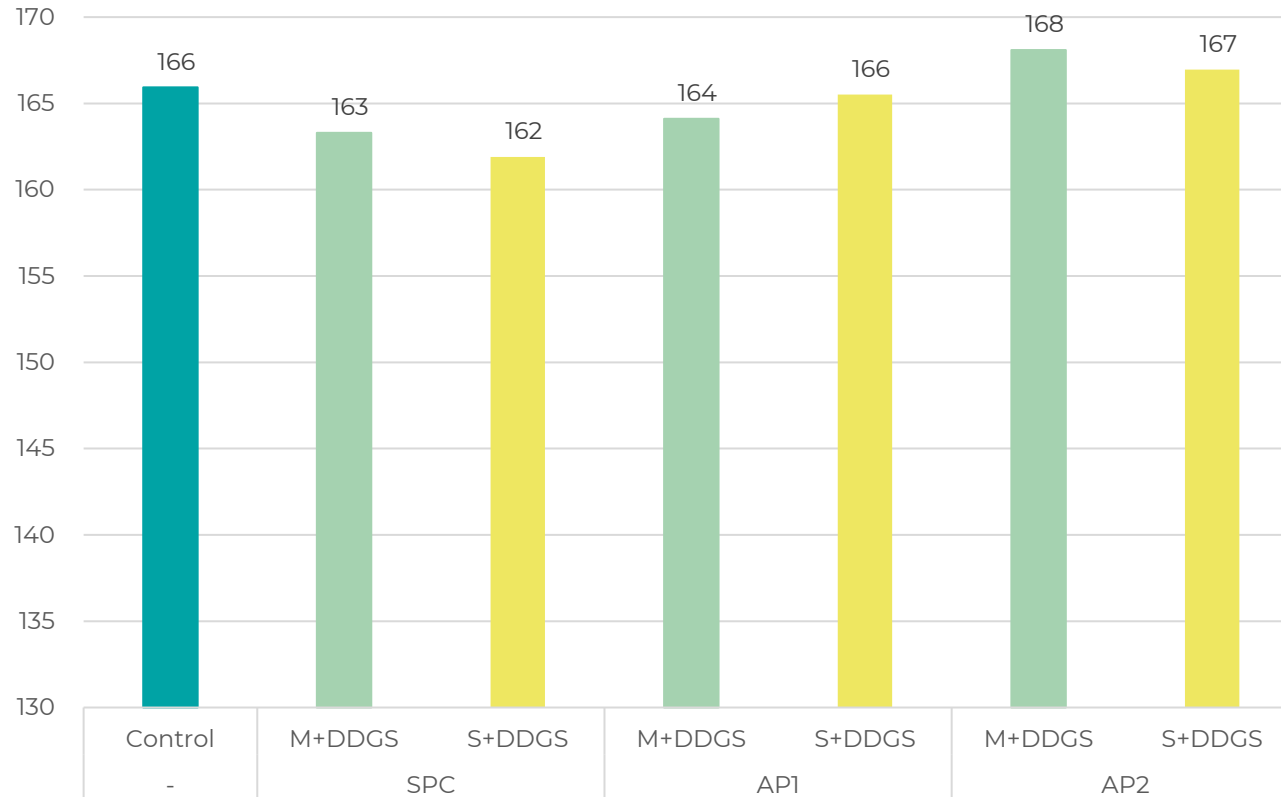


Final body weight (g) and FCR (kg/kg)



Economics and conclusions

Feed costs*/kg liveweight (Ft/kg)



*Based on feed ingredient prices (11.2023)

CONCLUSIONS

- No effect on the performance ($p > 0.05$)
- Feeding costs were influenced by the protein source in starter phase
- With SPC in the starter phase and using DDGS and sorghum in the further ones → 2.5% decrease in the feed costs/kg liveweight

THE EFFECT OF REPLACING MAIZE WITH SORGHUM ON THE PERFORMANCE OF PEKIN DUCKS AT DIFFERENT CRUDE FIBRE LEVELS

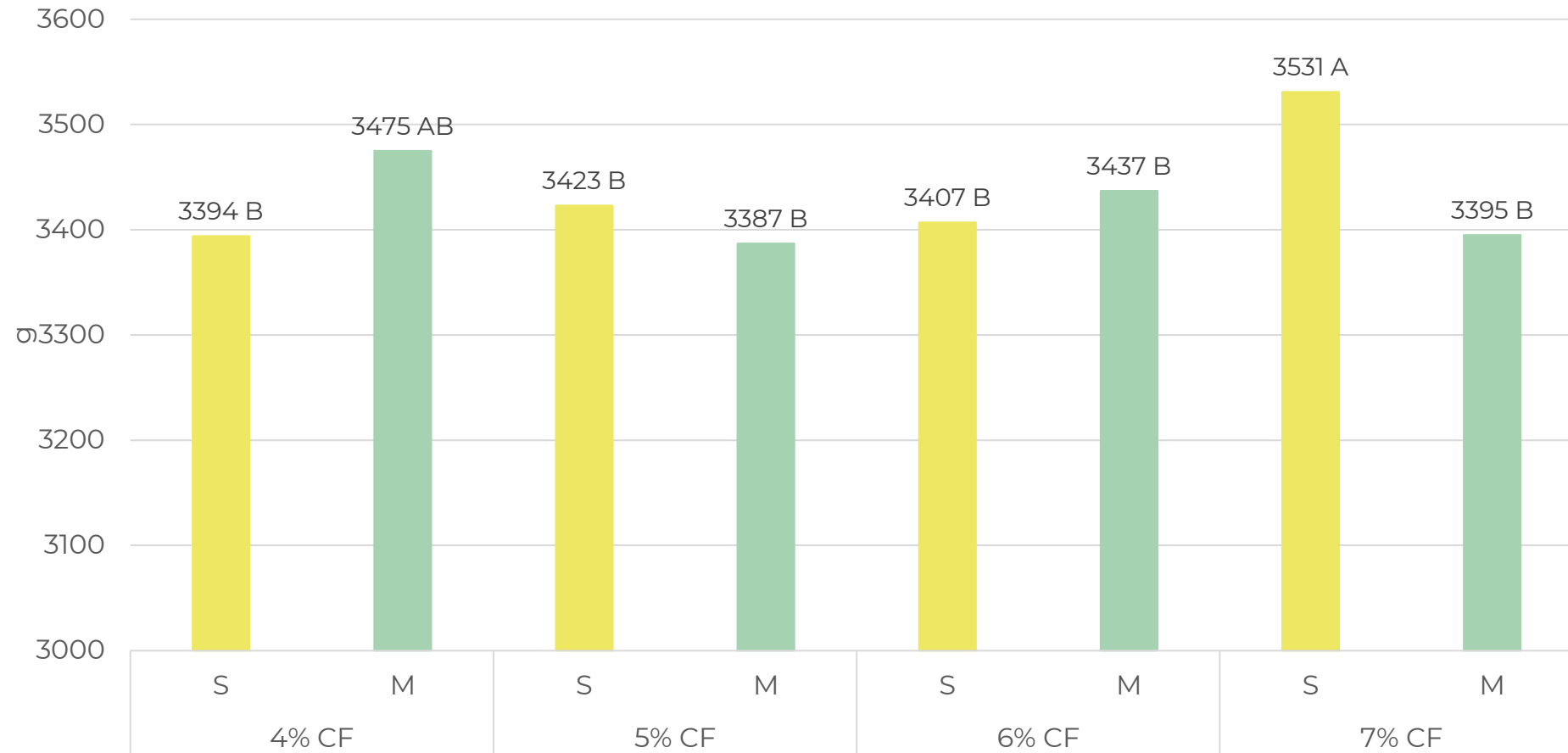
Materials and methods

- Cherry Valley, Medium pekin ducks (n=300/treatment)
- 37d of fattening
- Crude fibre (CF) levels: 4, 5, 6, 7%
- Treatments (replacing rate of sorghum):

Phase	Age	Replacing rate %
Starter I	0-7d	30-35
Starter II	8-14d	35-40
Grower	15-37d	40-45

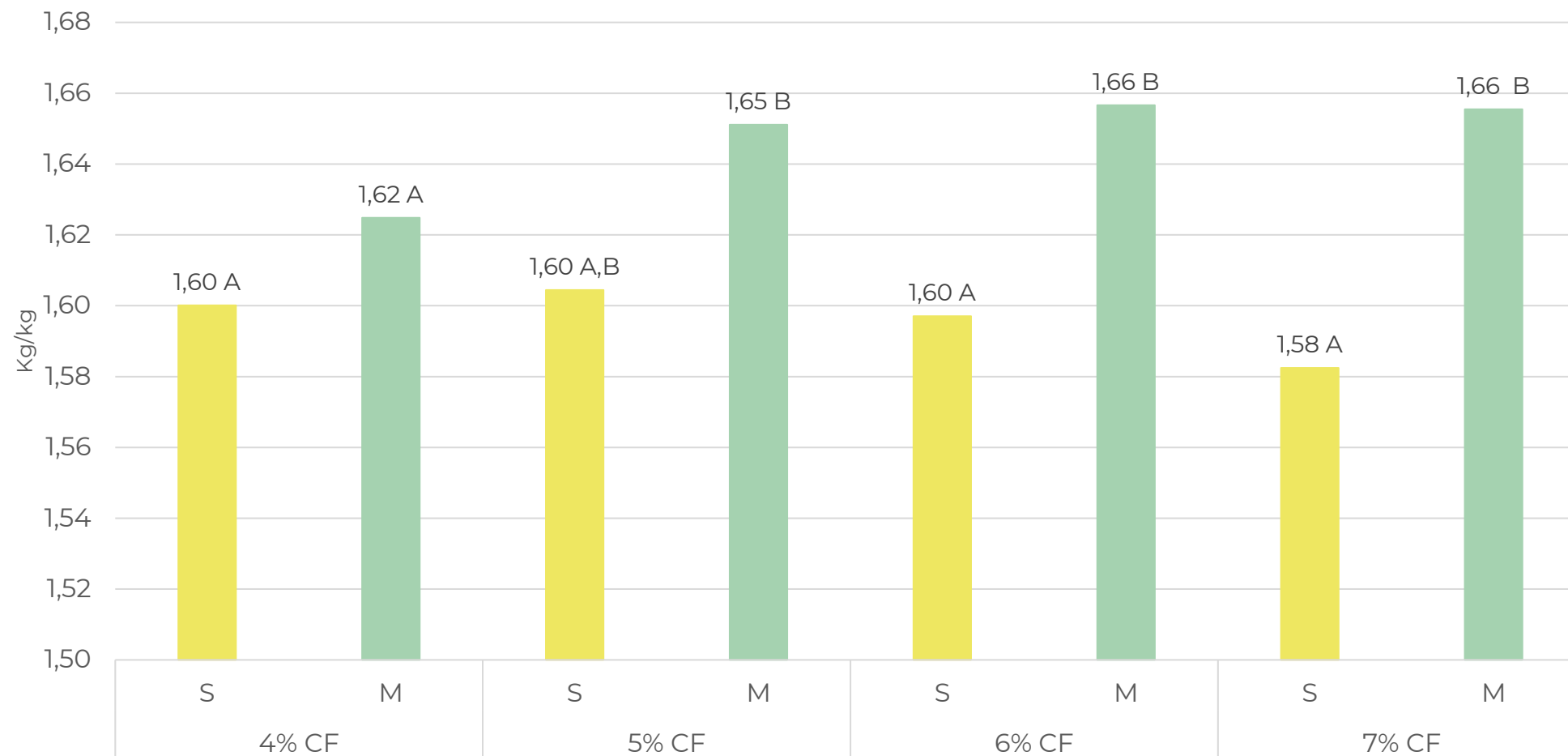


Final body weight (g)



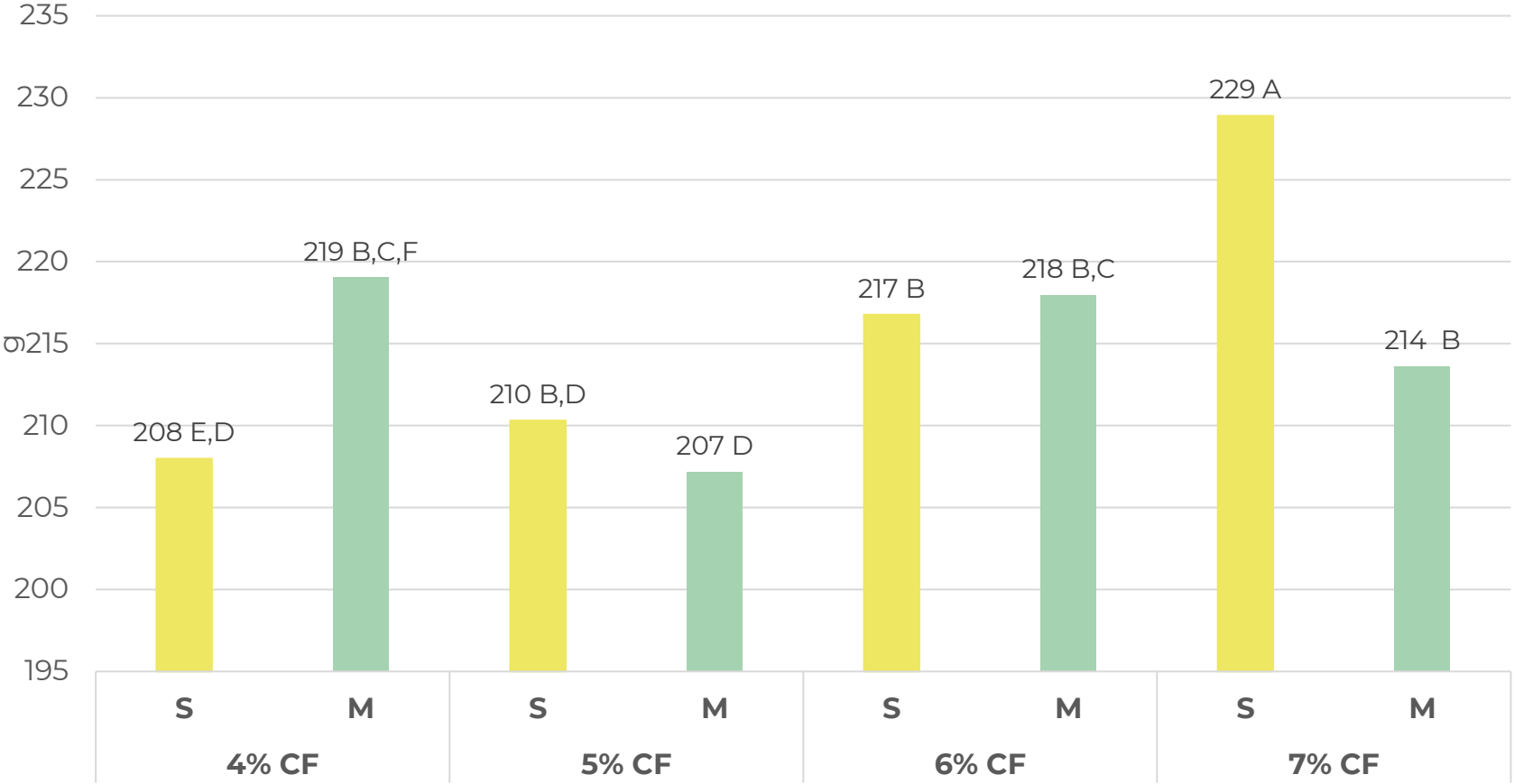
(A, B: Different superscript letters indicate significantly different values. Differences were considered significant at $p \leq 0.05$.)

Feed conversion ratio (FCR, kg/kg)



(A, B: Different superscript letters indicate significantly different values. Differences were considered significant at $p \leq 0.05$.)

Breast meat yield (g)



(A, B, C, D, E, F: Different superscript letters indicate significantly different values. Differences were considered significant at $p \leq 0.05$.)

Thigh meat yield (g)



(A, B: Different superscript letters indicate significantly different values. Differences were considered significant at $p \leq 0.05$.)

Economics and conclusions



CONCLUSIONS

- at 4%, 5% and 6% CF levels – no effect on the performance ($p > 0.05$)
- at 7% CF level – improvement of FBW, FCR, BMY and TMY ($p < 0.05$)
- at 4%, 6% and 7% CF levels – decreasing feeding costs

*Based on feed ingredient prices (03.2024)



Sorghum in practice

History of sorghum at



BÁBOLNA
FEED

2018

The beginning of sorghum usage
in bigger amounts

History of sorghum at



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2019

An increasing amount is flowing
in from the seed market and crop
production

History of sorghum at



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2020

Increasing quantity is available on
the market

History of sorghum at



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2021

Large volume usage due to the
good price

History of sorghum at



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2022

Crisis because of the increasing grain prices

Reduced availability of sorghum on the market

History of sorghum at



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2023

Grain crisis at its peak, further
problems with the maize
production

History of sorghum at



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2024

Increasing demand from the feed industry

Increasing export
Industrial usage is increasing
(bioethanol)

History of sorghum at



BÁBOLNA
FEED

2025

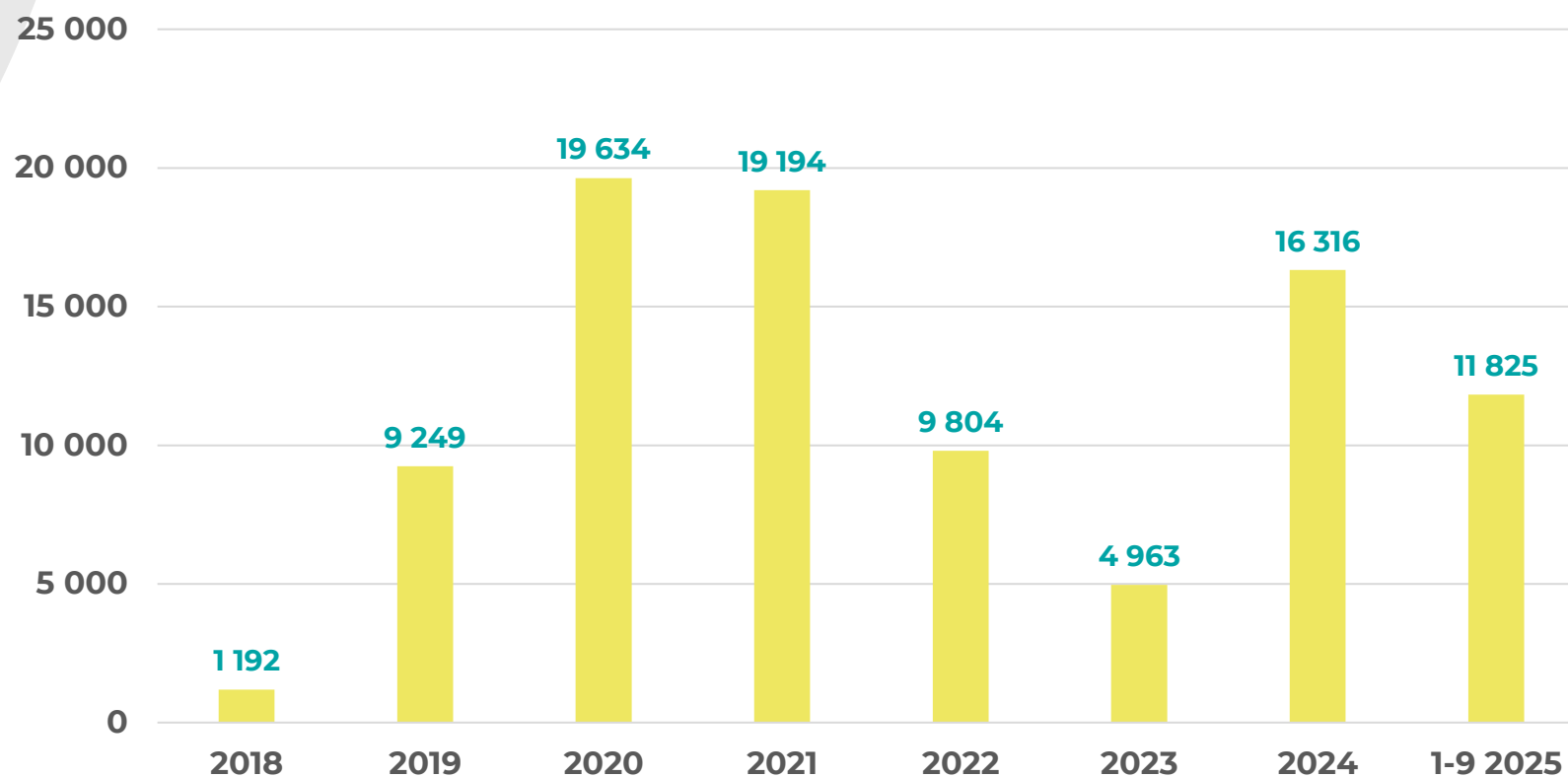
Increasing amounts again...

History of sorghum at



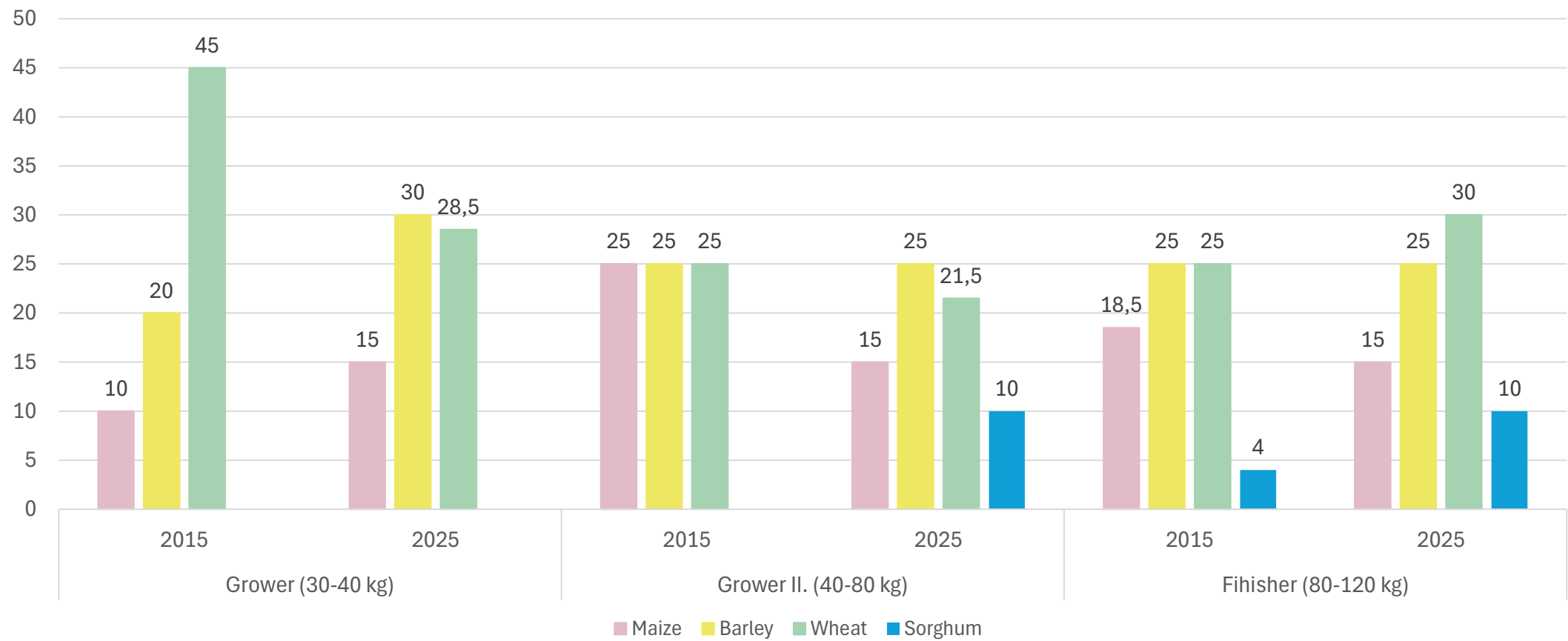
BÁBOLNA
FEED

t/year



Sorghum in practice – fattening pigs

The ratio of the different grains in the feed of fattening pigs (%)



Source: Bonafarm-Bábolna Feed Ltd.

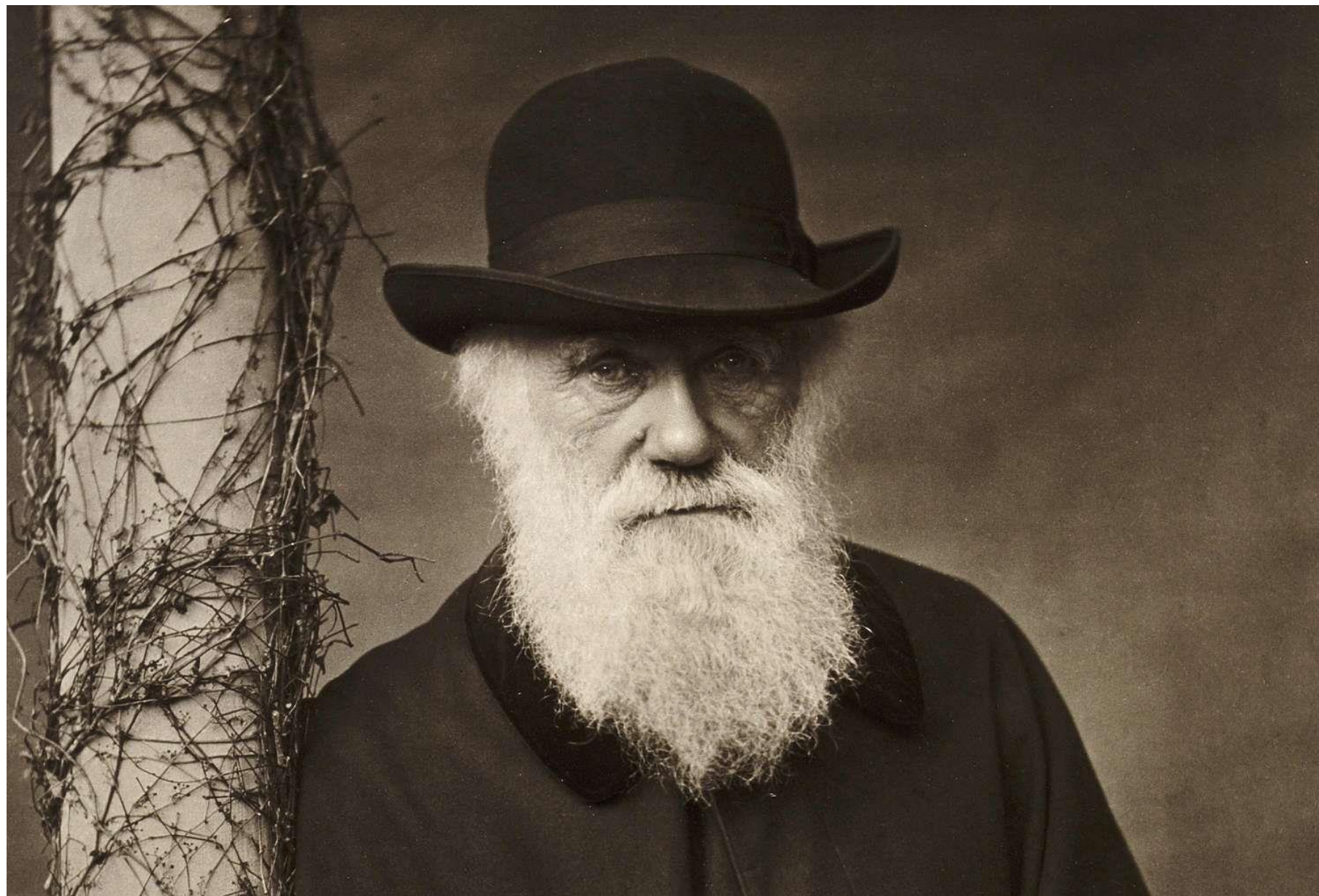
Take home message

Sorghum is...

- Good energy source grain for monogastrics → alternative of corn
- Fits well to sustainability goals → economically and ecologically efficient production
- High feeding levels without compromising the results – proven by feeding trials



„Sorghum not only endures climate change — it actually benefits from that.”



"It is not the strongest of the species that **survive**, nor the most intelligent, but the one that is **most adaptable to change**"

/Charles Darwin/



Thank you for your attention

<https://www.babolnatakarmany.hu/>