ILLINOIS

Hybrid rye for gestating and lactating sows

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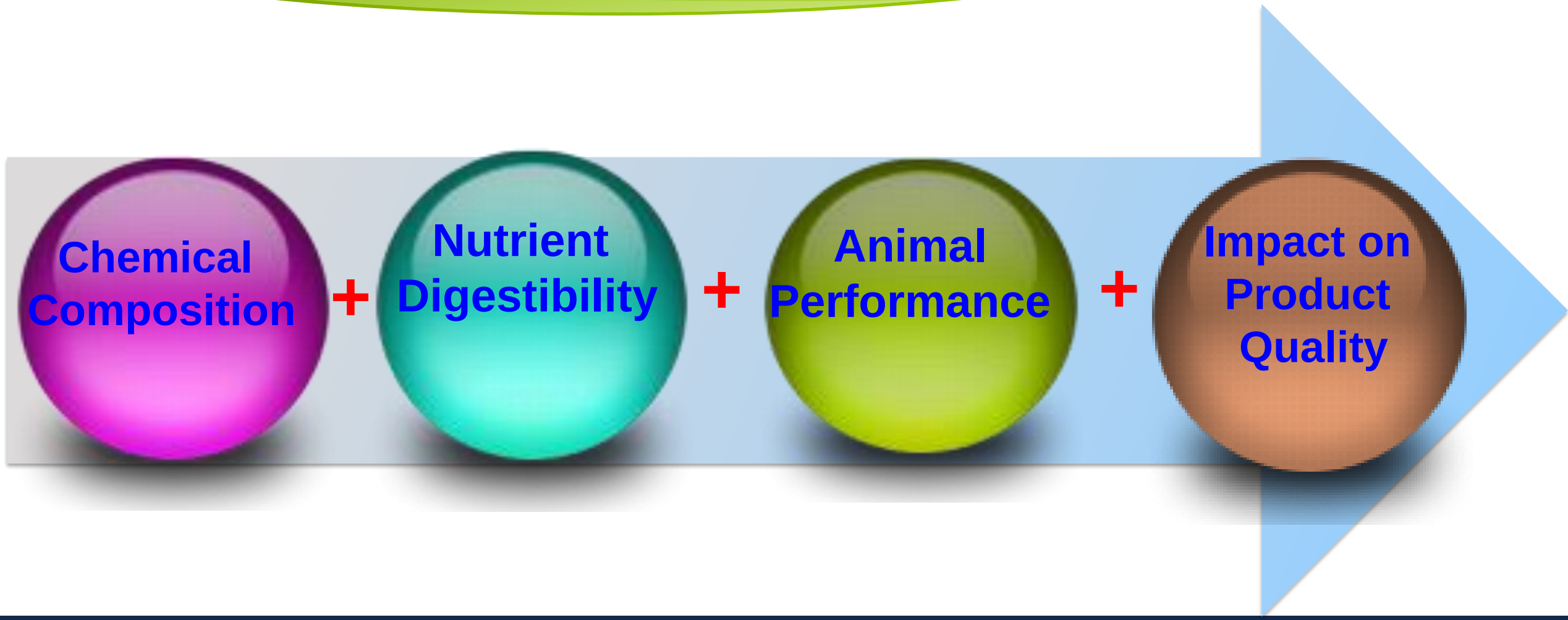
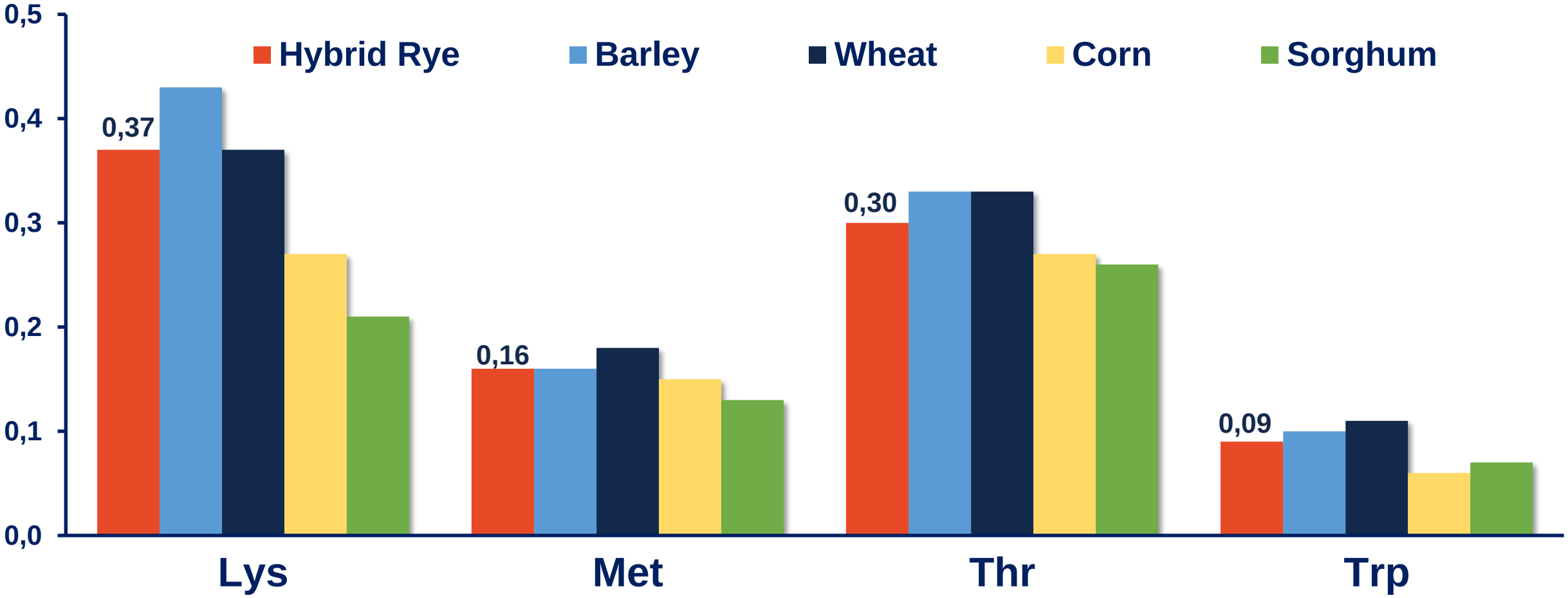
Feed Ingredient Evaluation



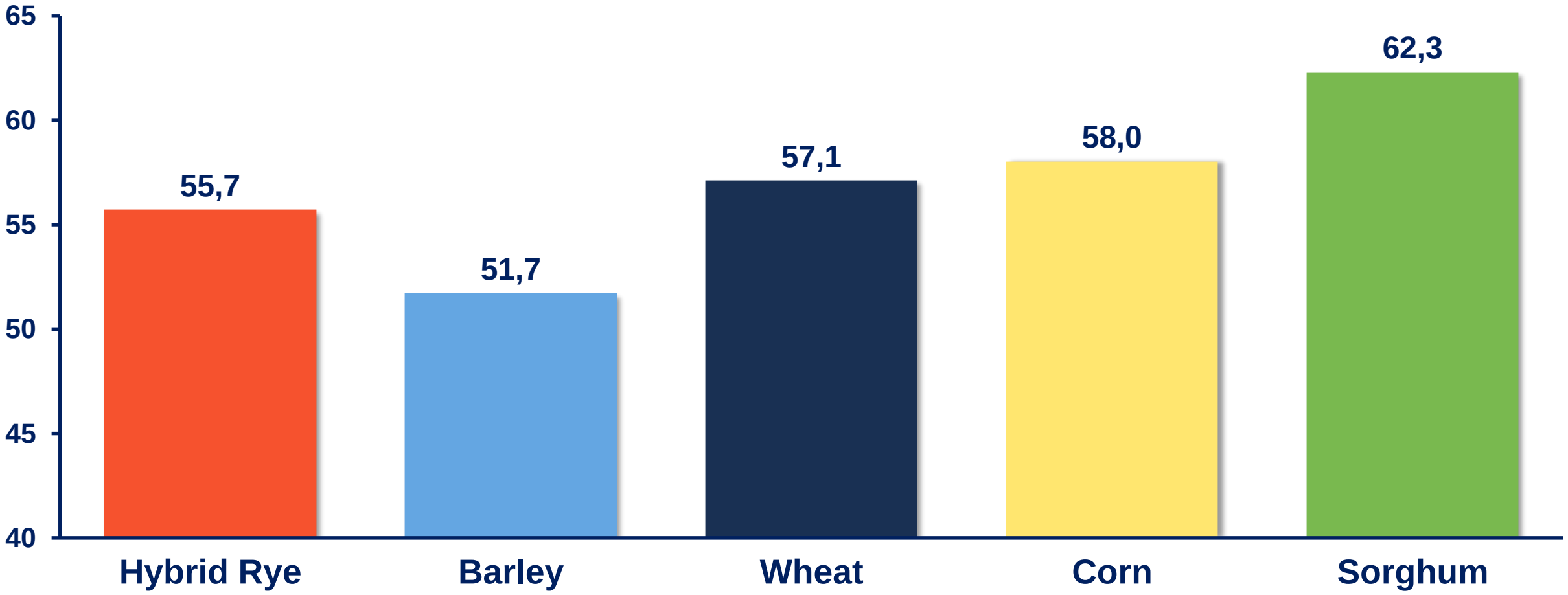
As-is basis.

Amino acids, %



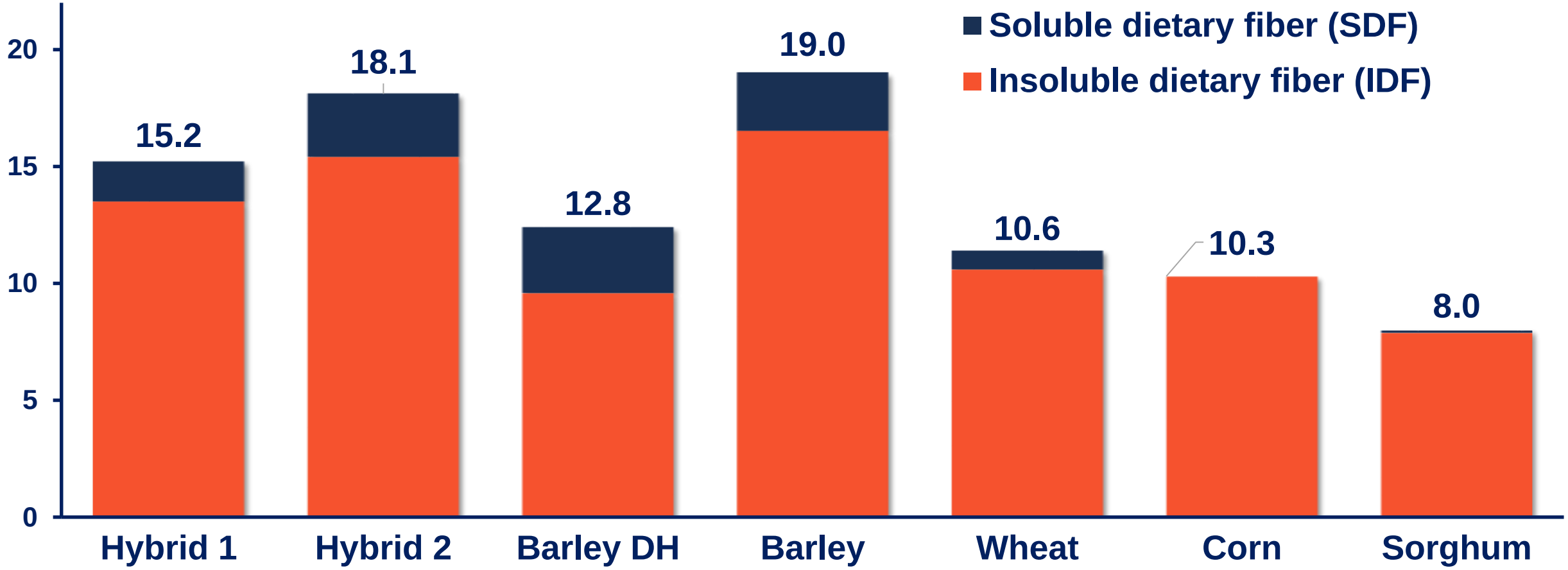
As-is basis.

Starch, %



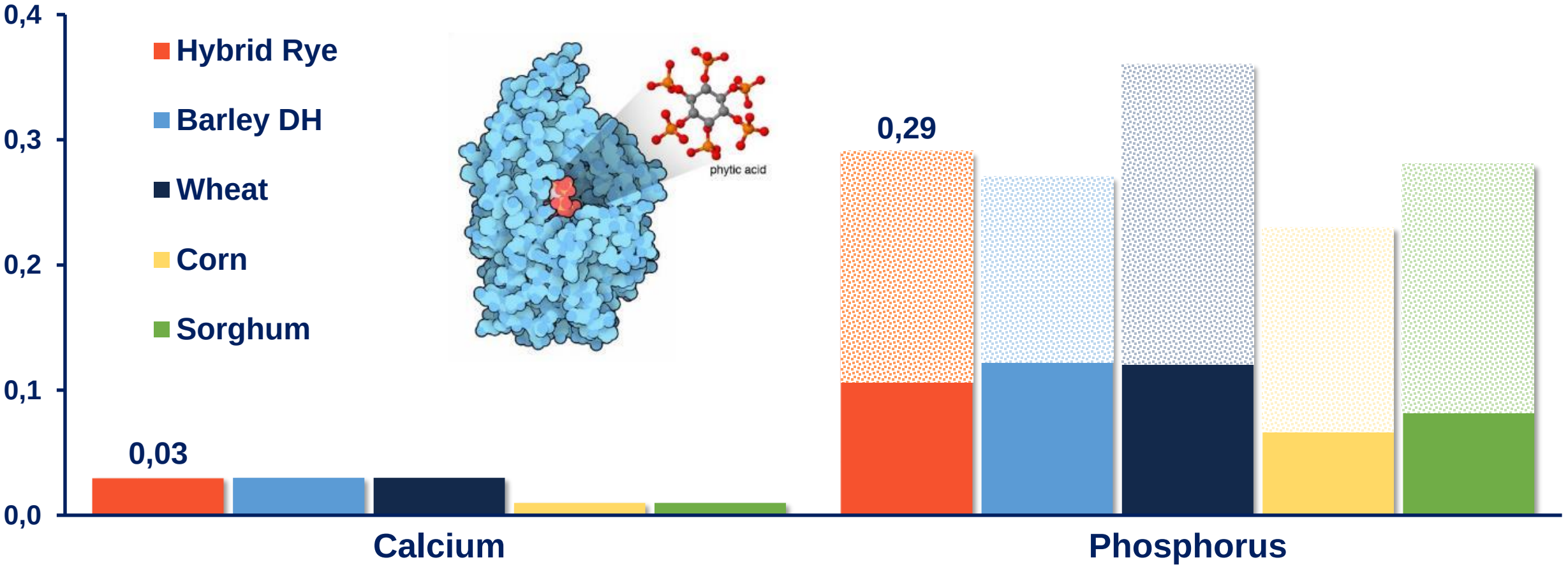
Total dietary fiber, %

As-is basis.

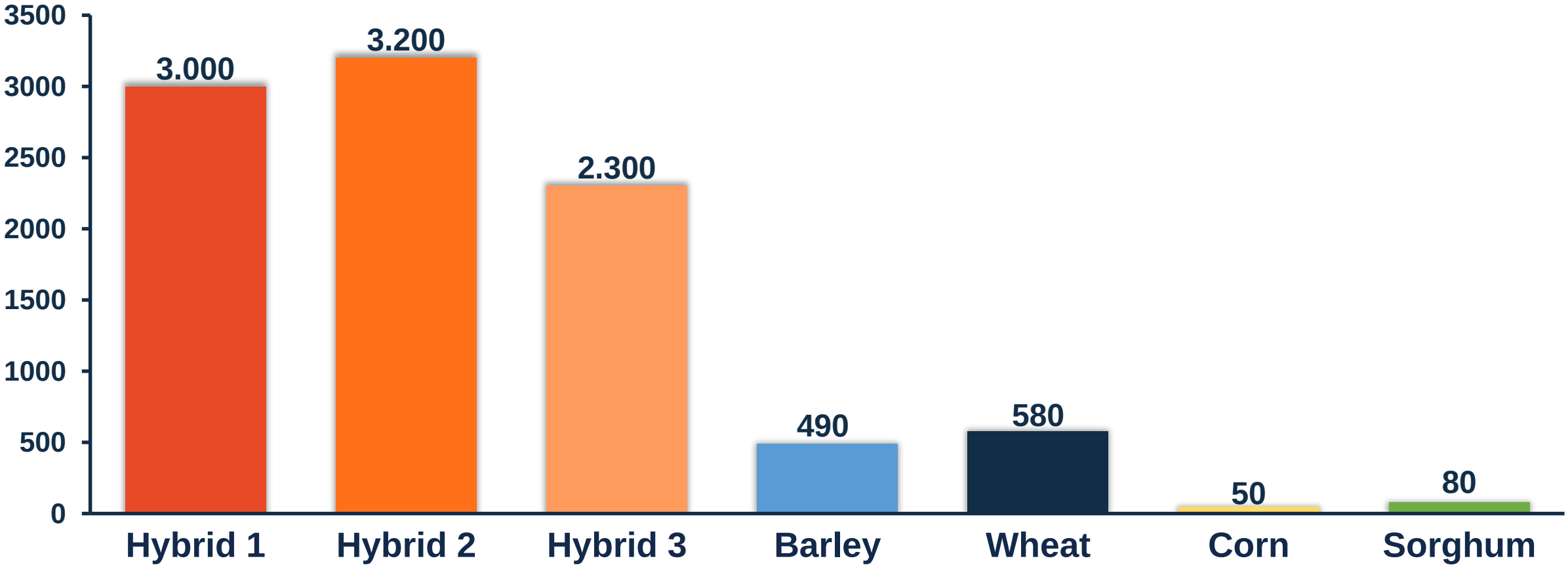


Minerals, %

As-is basis.
Data are from 2016 crop.



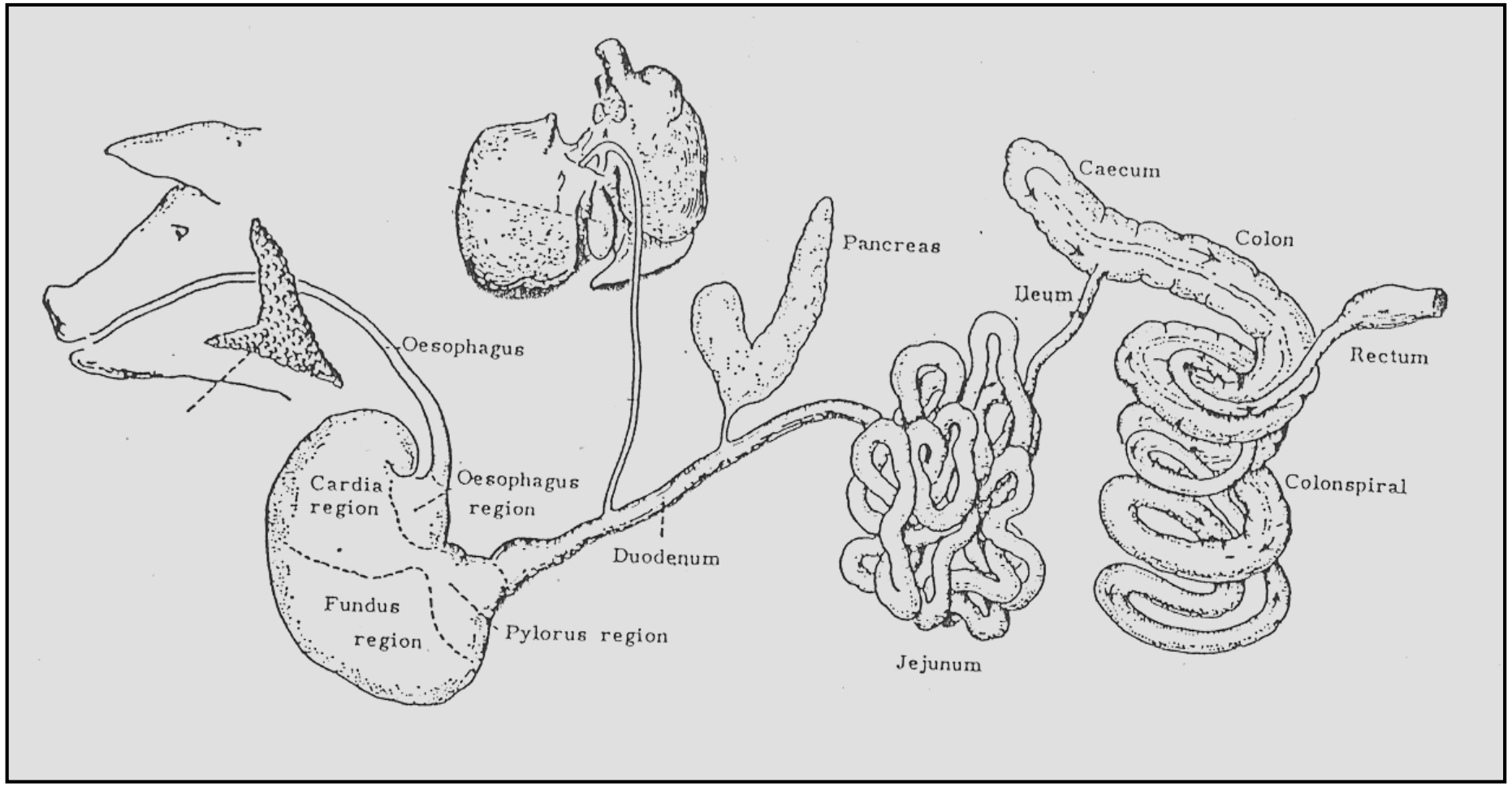
Intrinsic phytase, FTU



Metabolism Crate

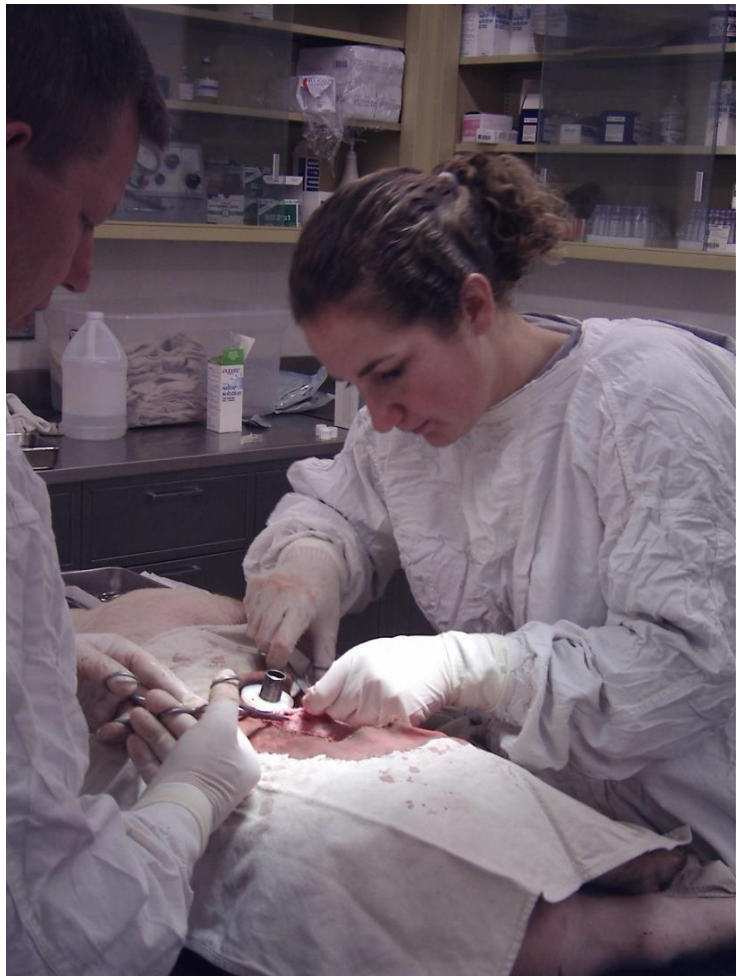
Total Tract Digestibility

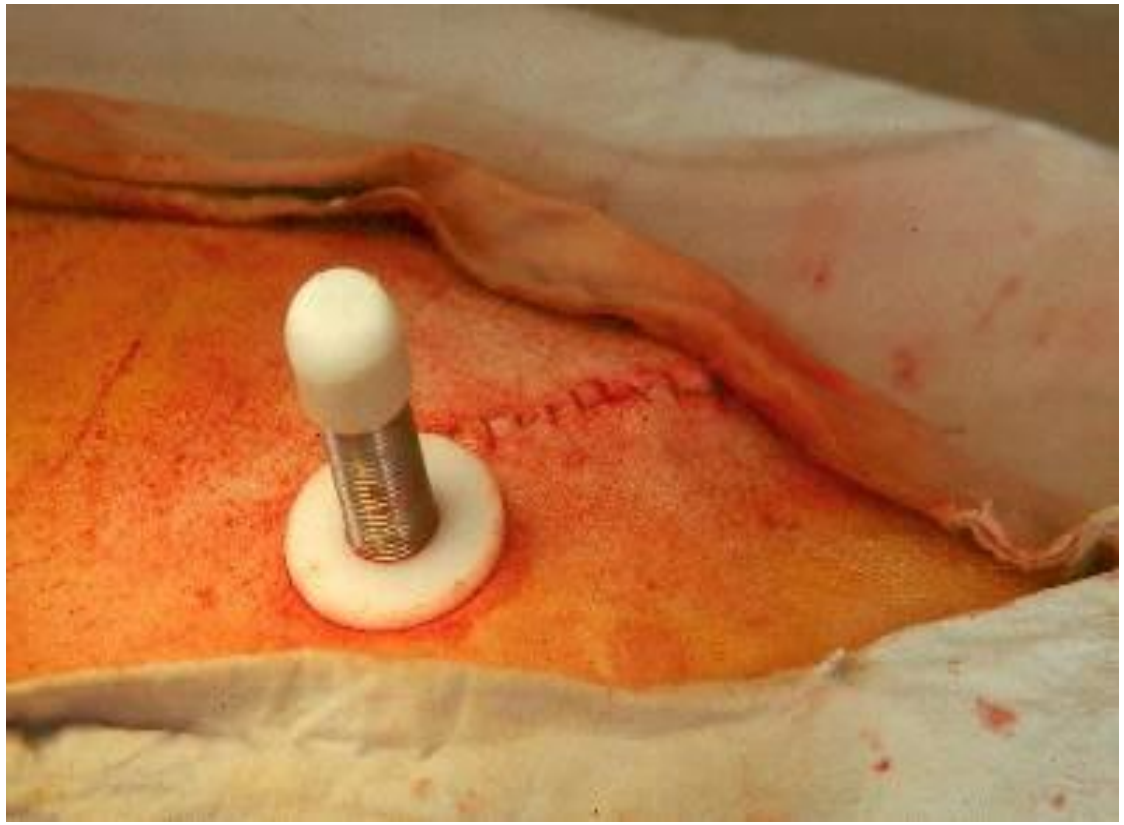
Ileal Digestibility In Pigs



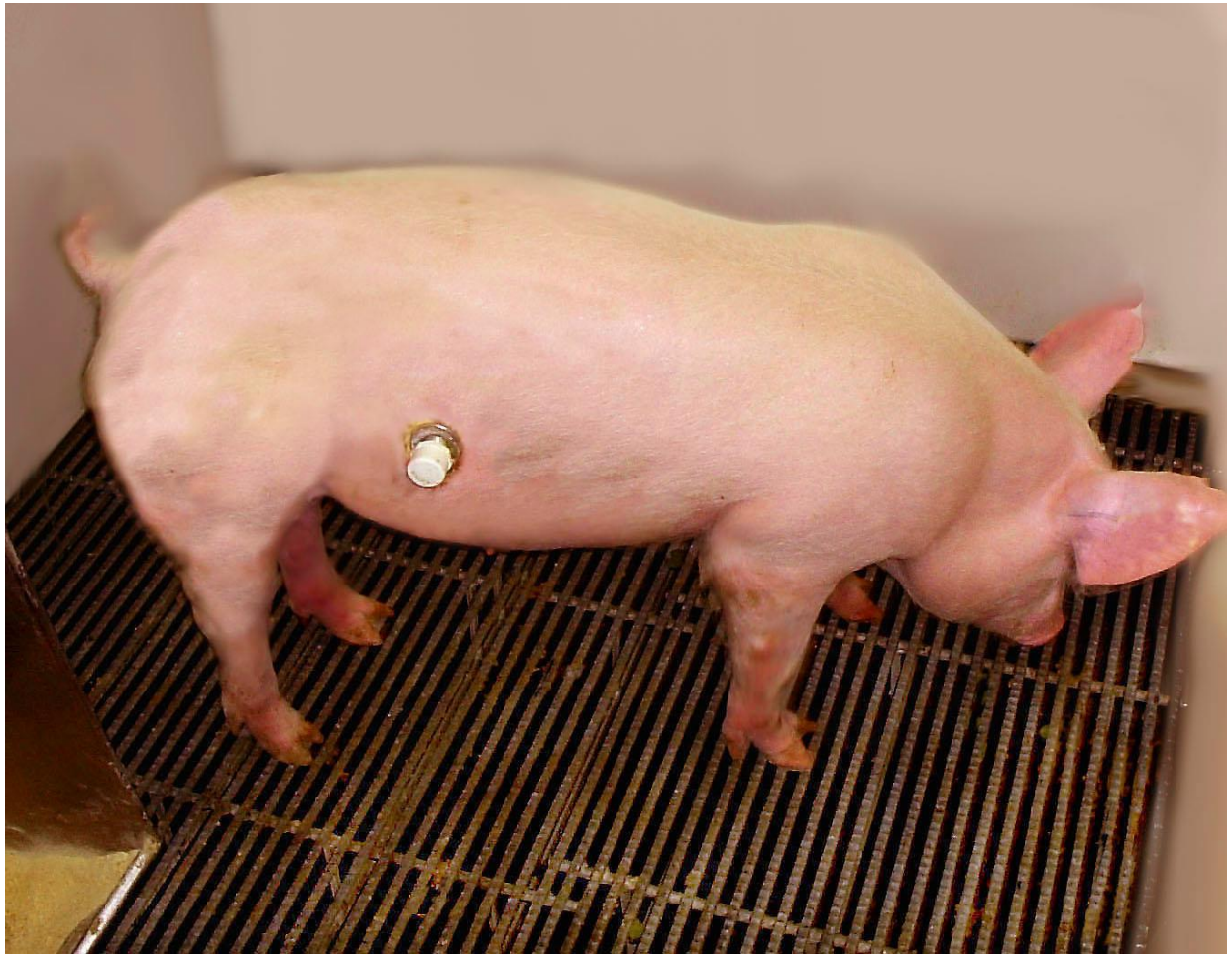
T-Cannula

Installing a Cannula



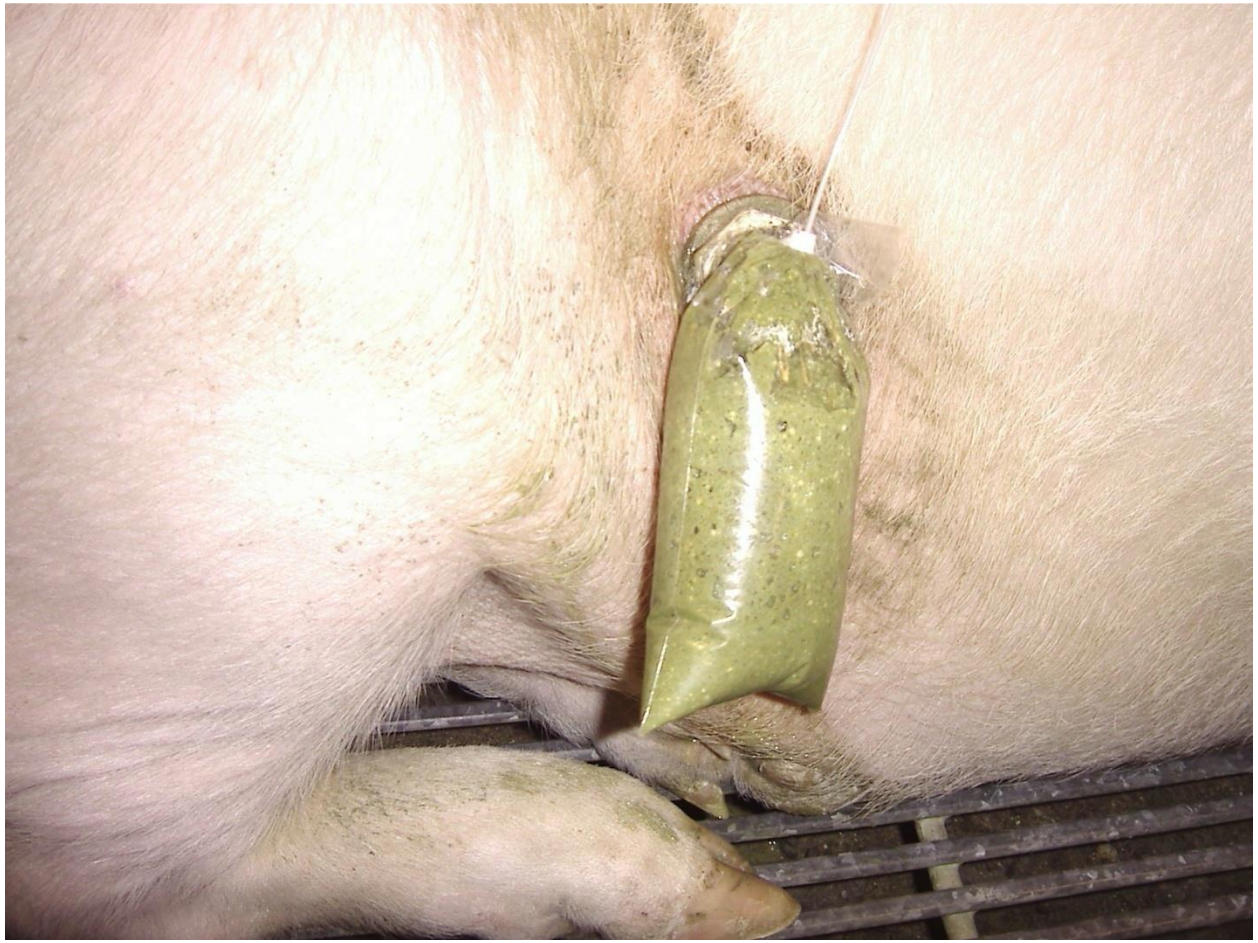


Ready for collection



Open Cannula

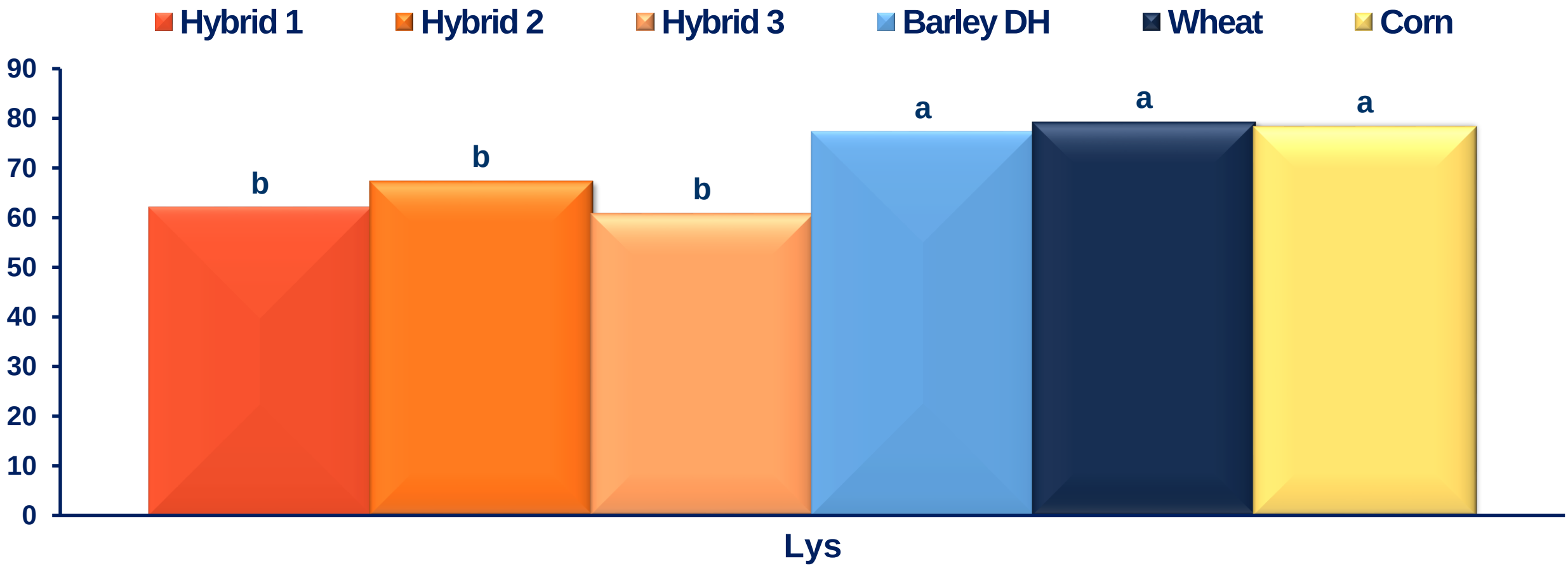
Bag full of Digesta



Amino Acid Digestibility

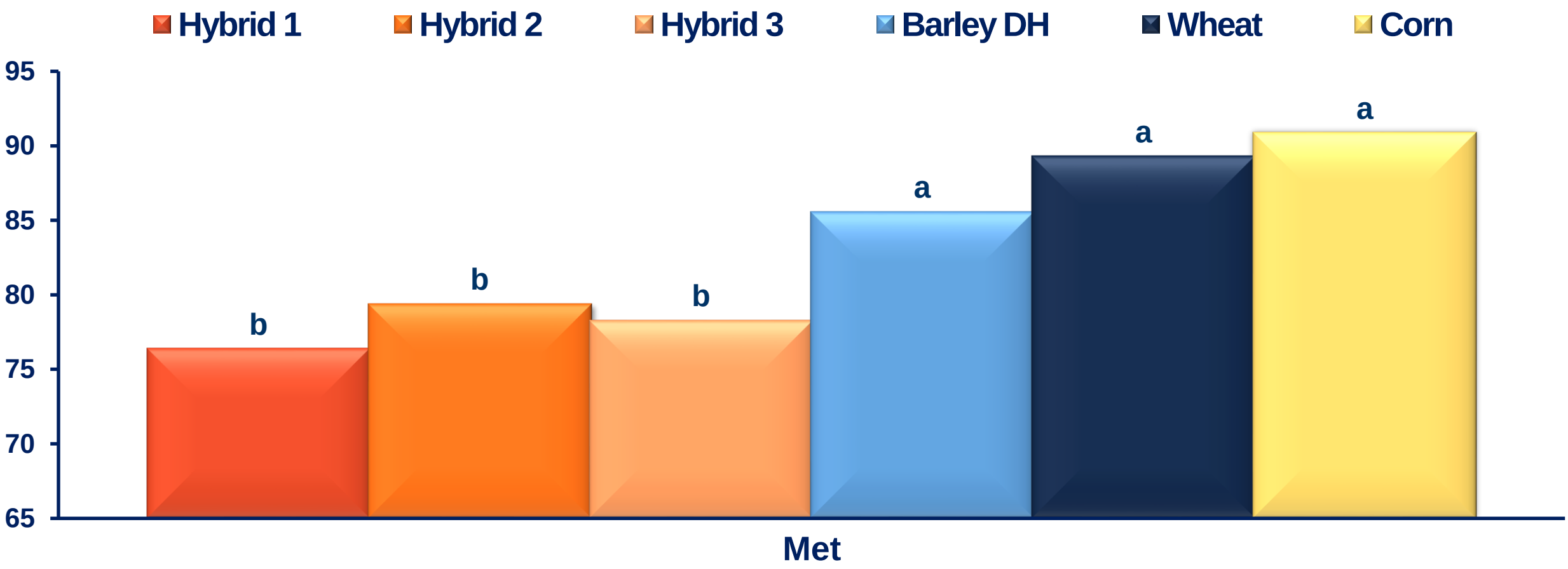
SID of Lysine, %

P < 0.05



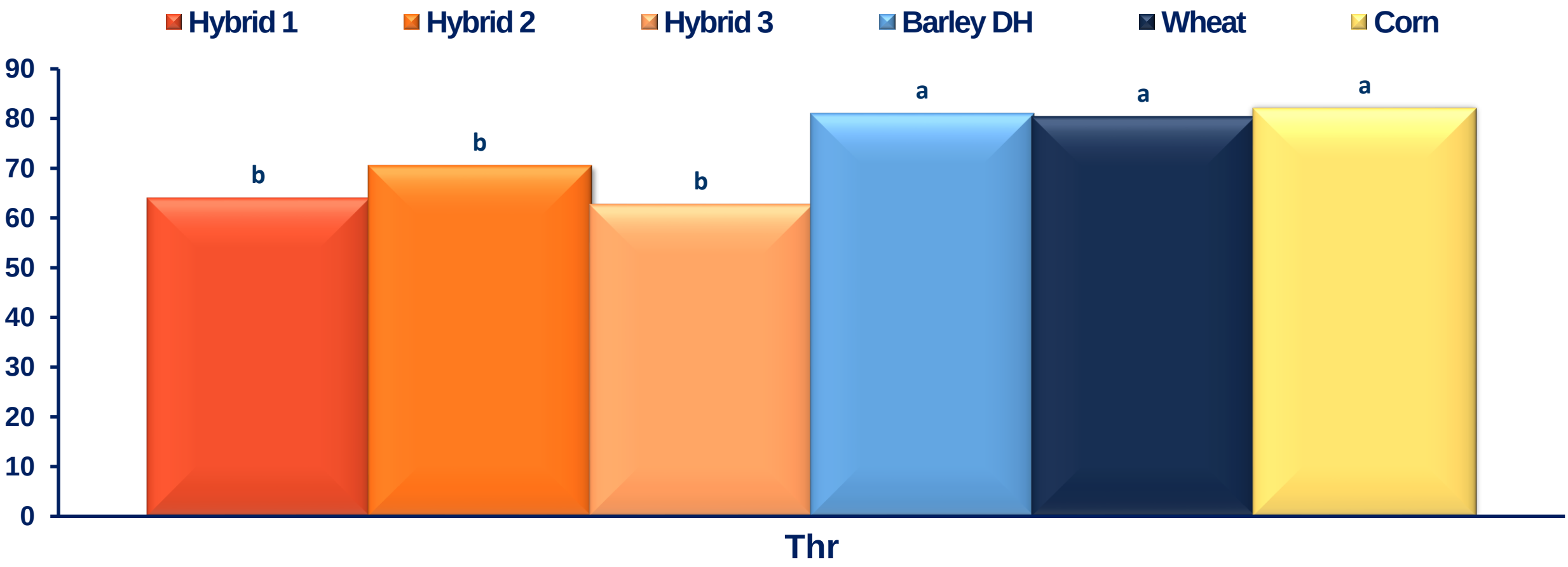
SID of Methionine, %

P < 0.05

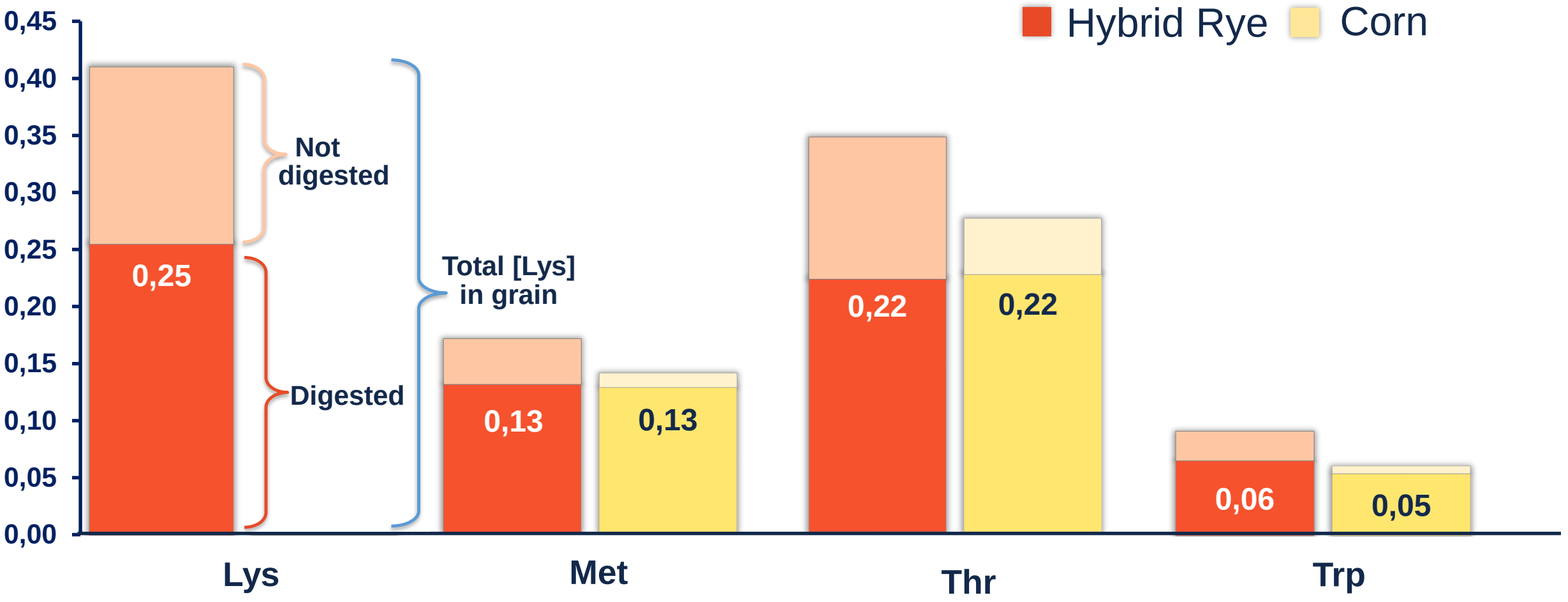


SID of Threonine, %

P < 0.05



Concentration of digestible AA, %

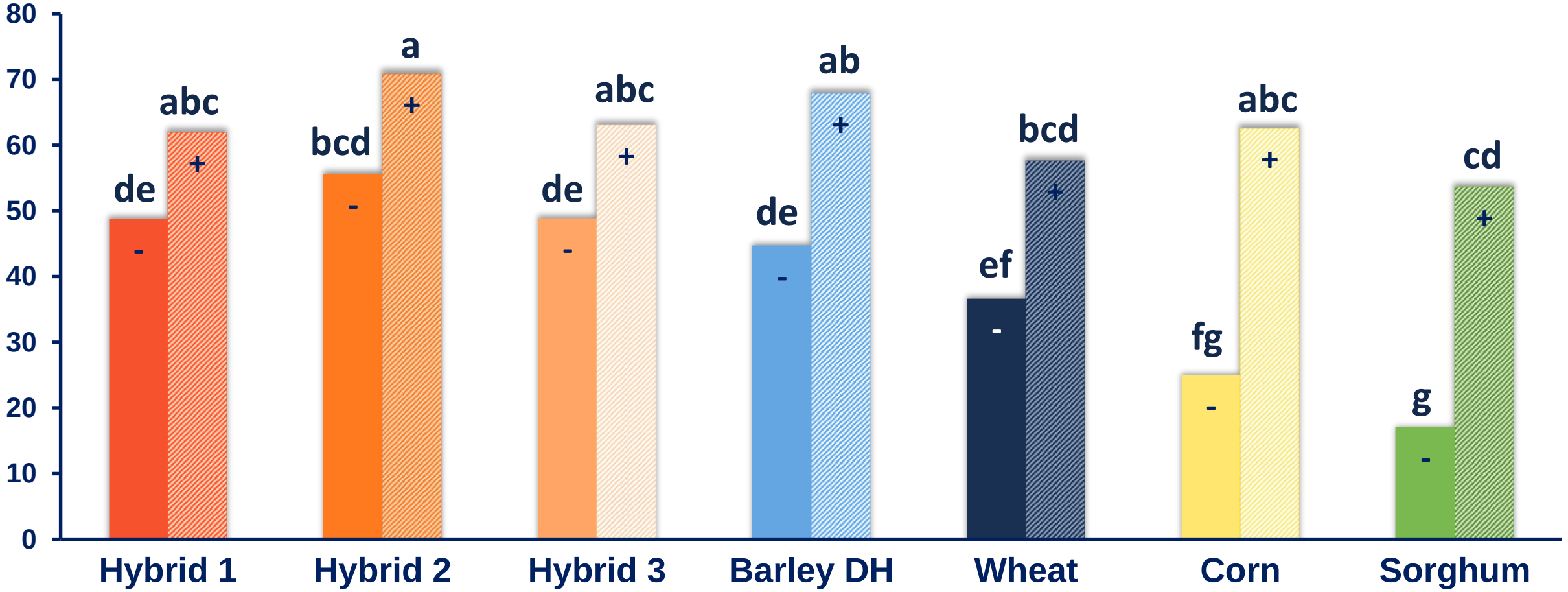


Phosphorus digestibility

P-digestibility

STTD of P, %

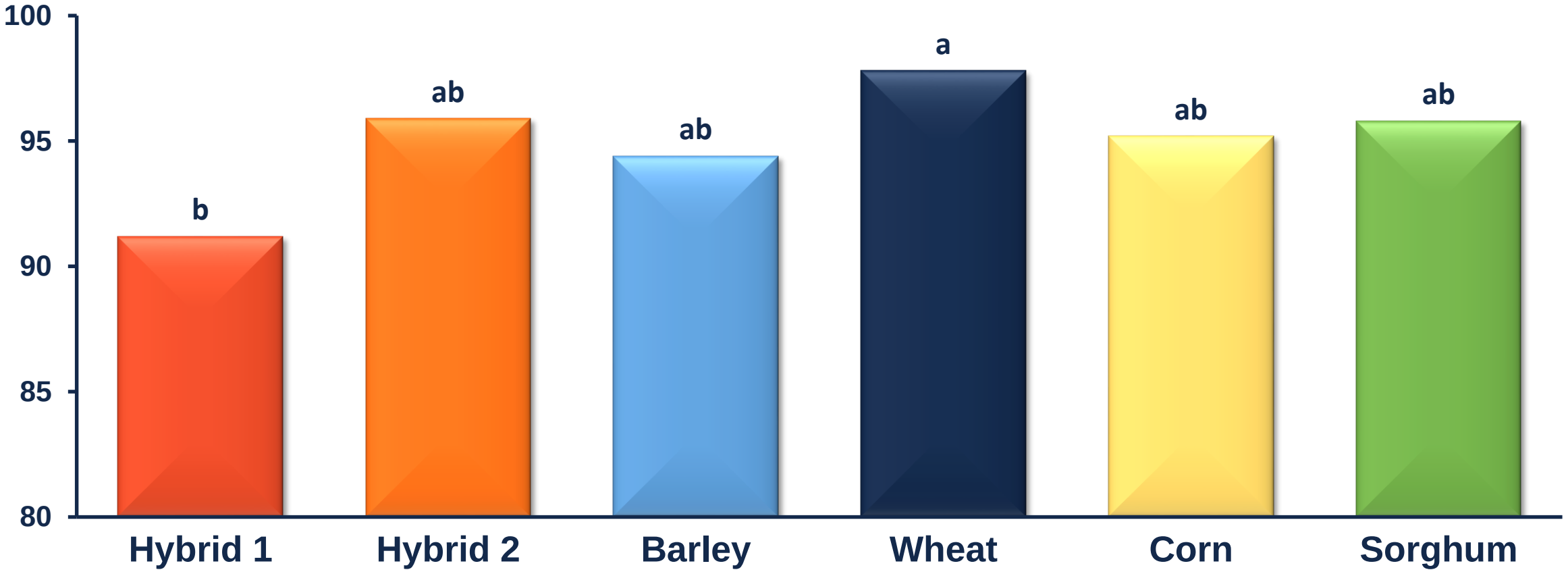
Grain*Phytase $P < 0.001$
Grain $P < 0.001$
Phytase $P < 0.001$



Starch Digestibility

AID of starch, %

$P < 0.05$

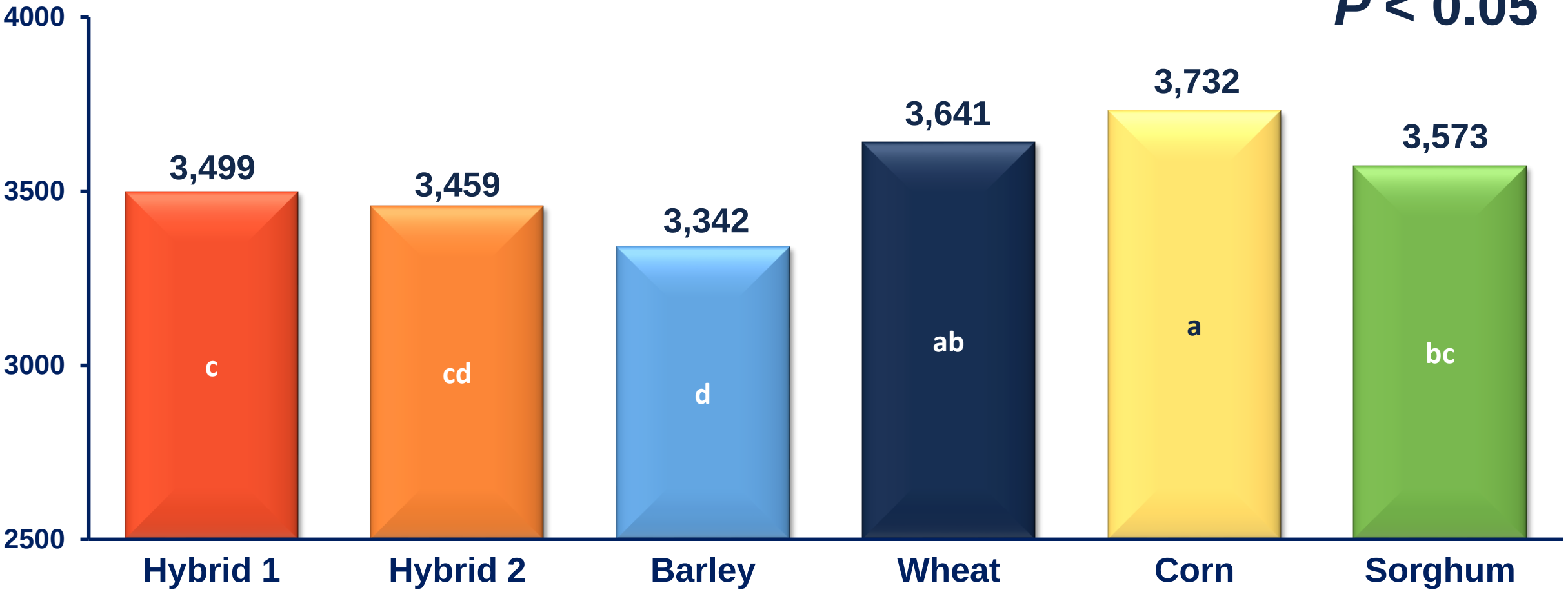


ATTD of Total Dietary Fiber

Grain	ATTD of TDF, %
Hybrid 1	66.1[a]
Hybrid 2	70.2[a]
Barley	55.4[b]
Wheat	57.4[b]
Corn	56.5[b]
Sorghum	55.2[b]

Metabolizable energy, kcal/kg DMB

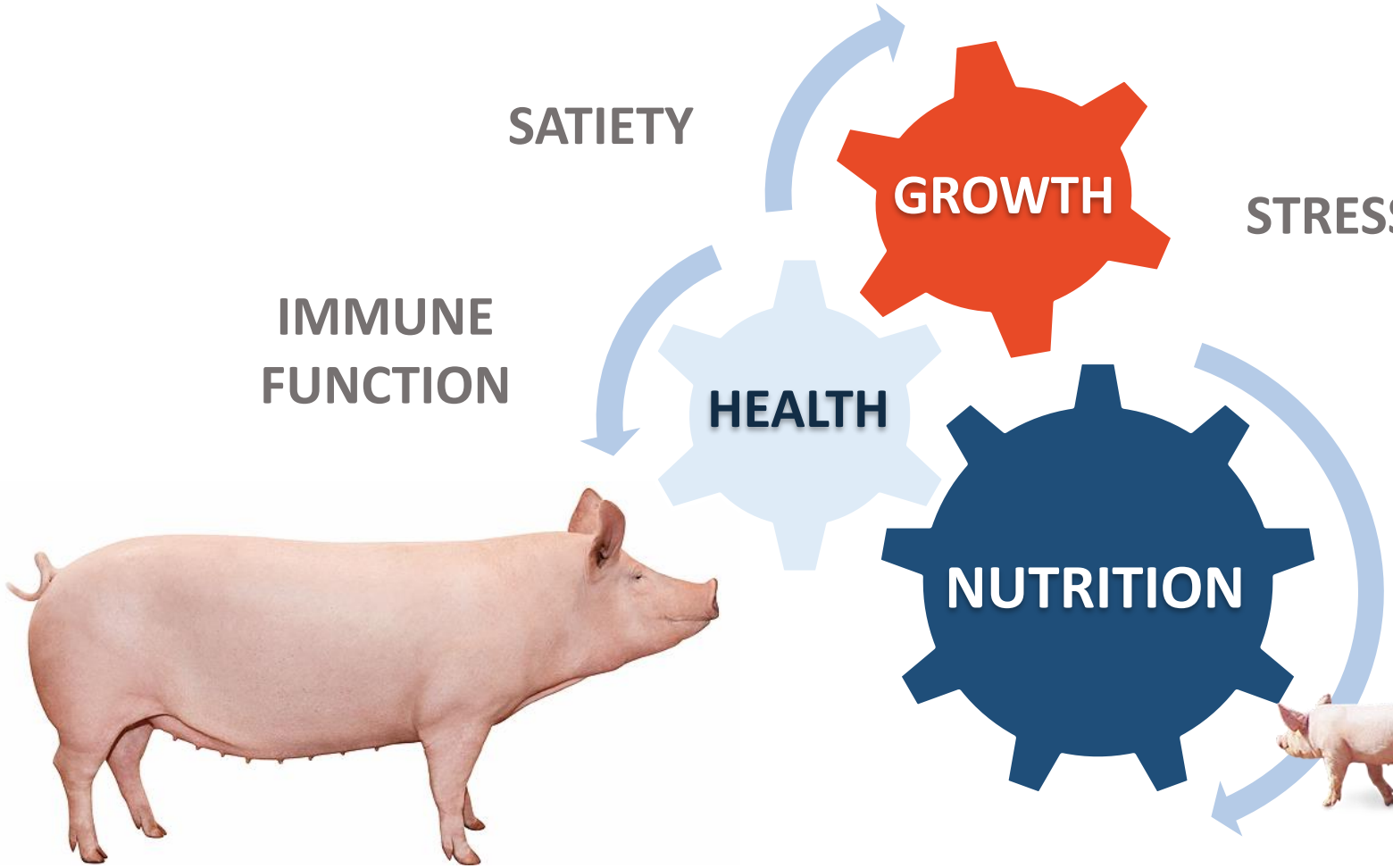
$P < 0.05$



Hybrid rye for sows

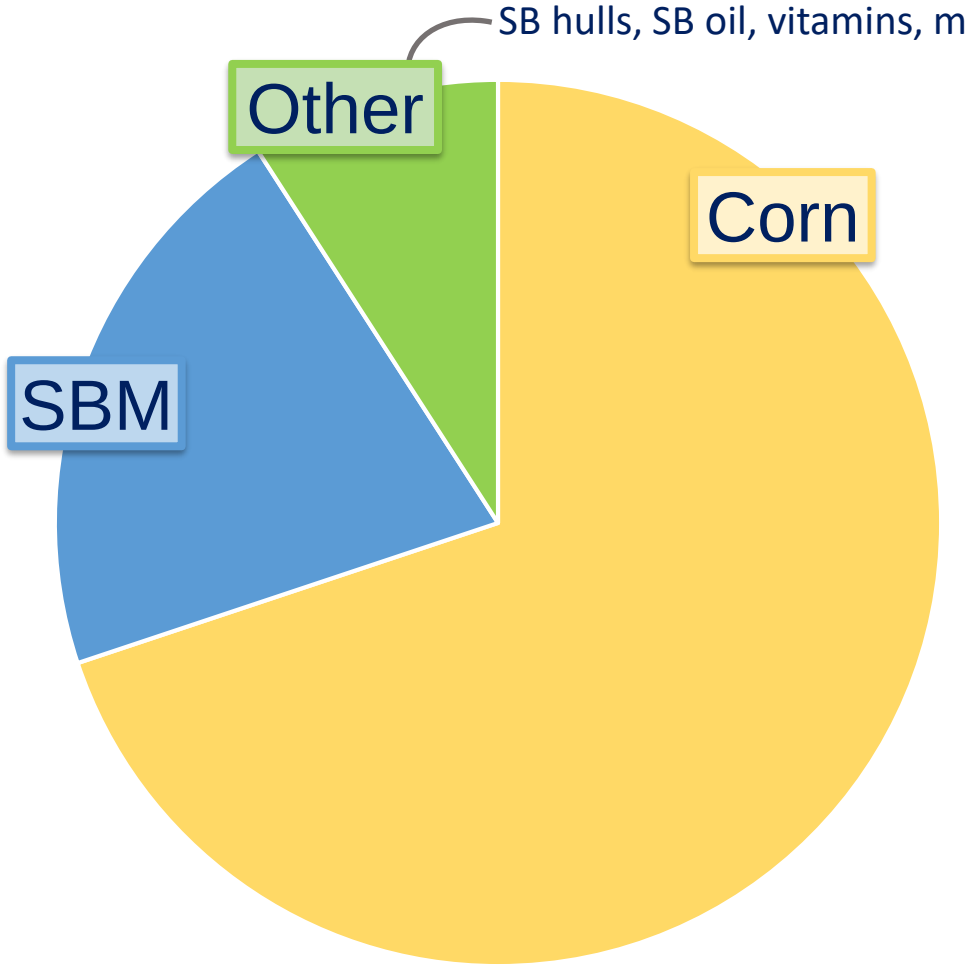
KWS

Hybrid rye for sows



Sow dietary treatments

FORMULATED FOR GESTATION + LACTATION



Control: Corn/SBM

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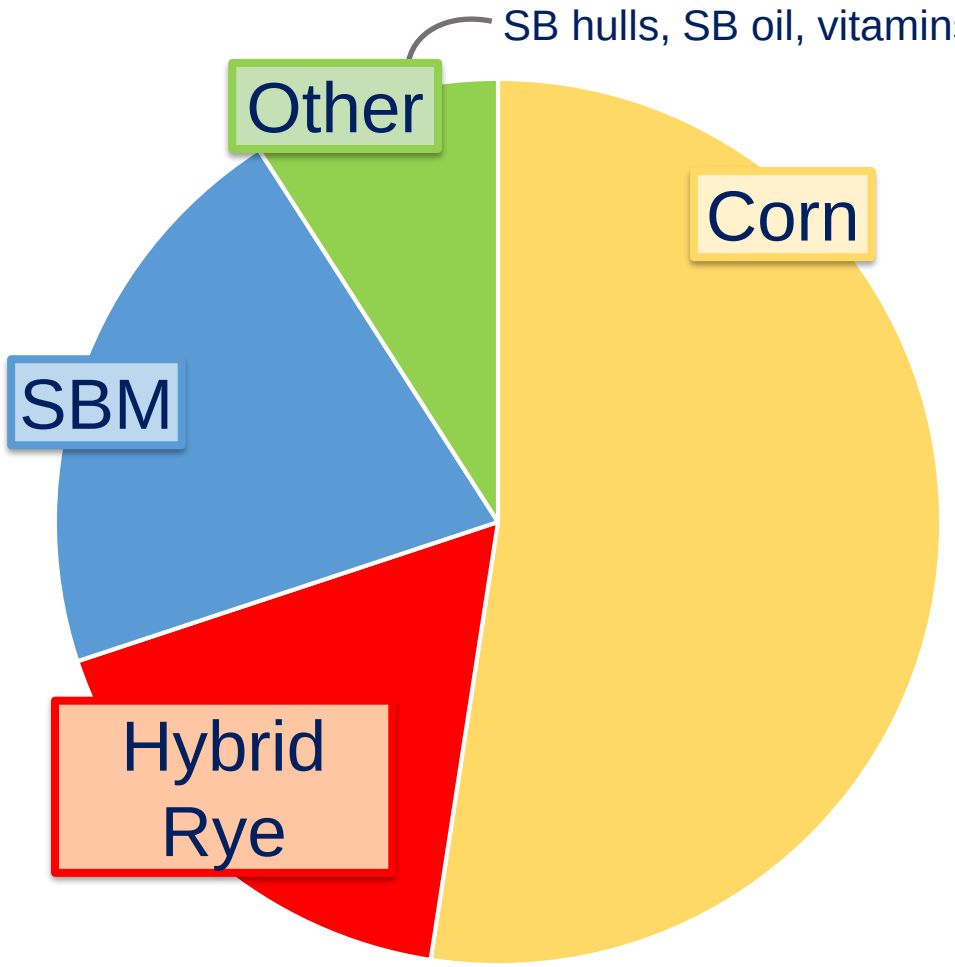
Sow dietary treatments

FORMULATED FOR GESTATION + LACTATION



Replaces 25% of corn with hybrid rye

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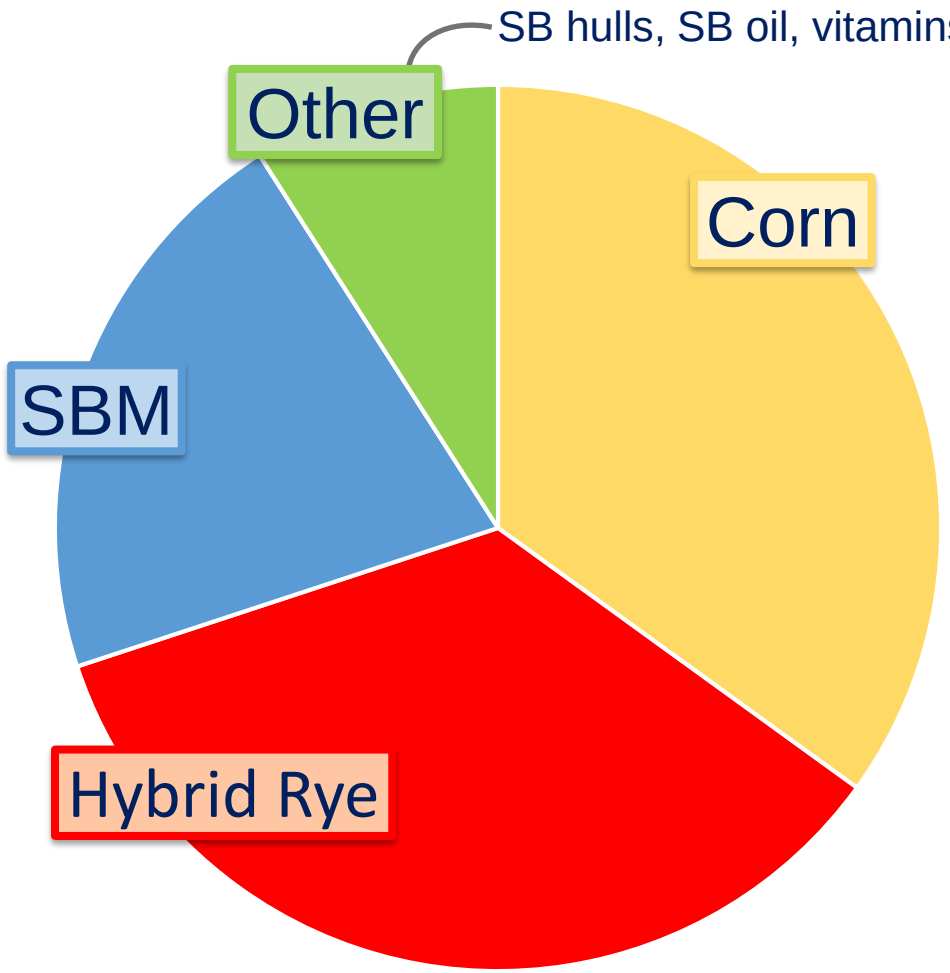
Sow dietary treatments

FORMULATED FOR GESTATION + LACTATION



Replaces 50% of corn with hybrid rye

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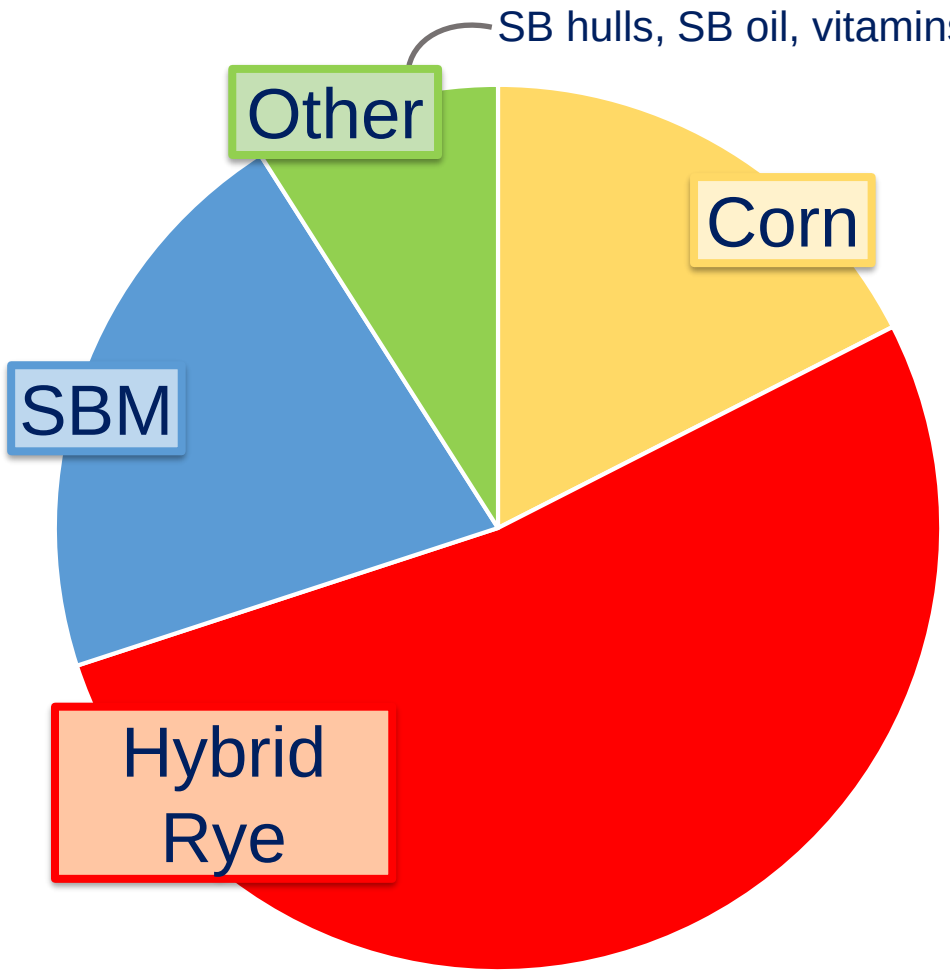
Sow dietary treatments

FORMULATED FOR GESTATION + LACTATION



Replaces 75% of corn with hybrid rye

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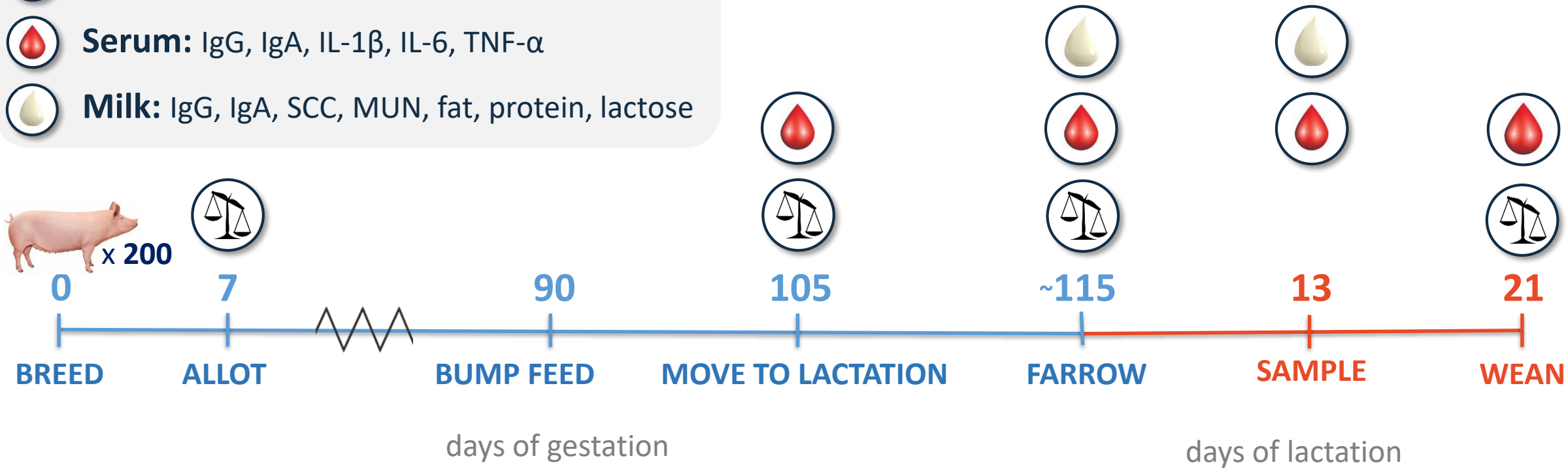
Methods

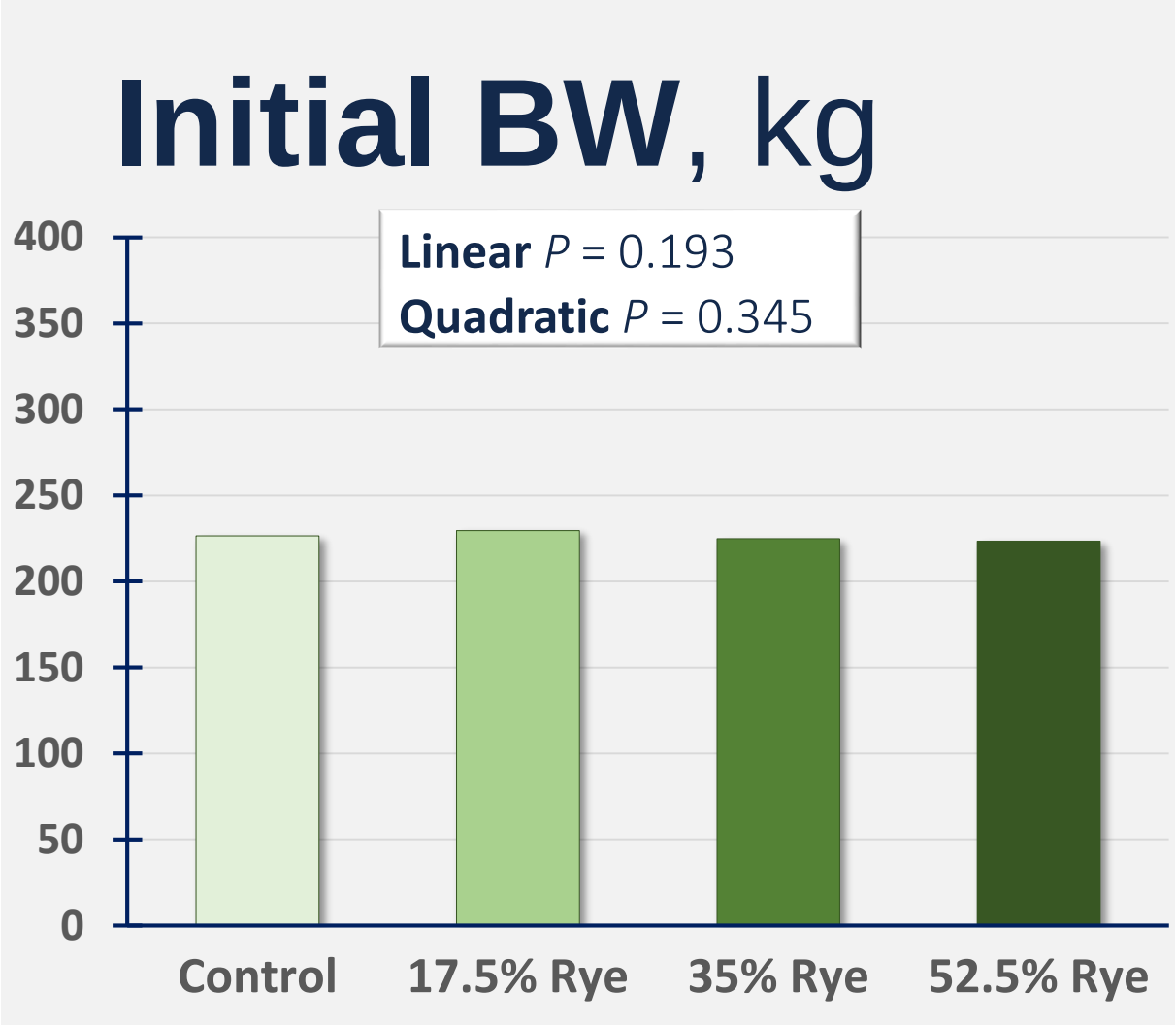
Body weights: Sows and/or piglets

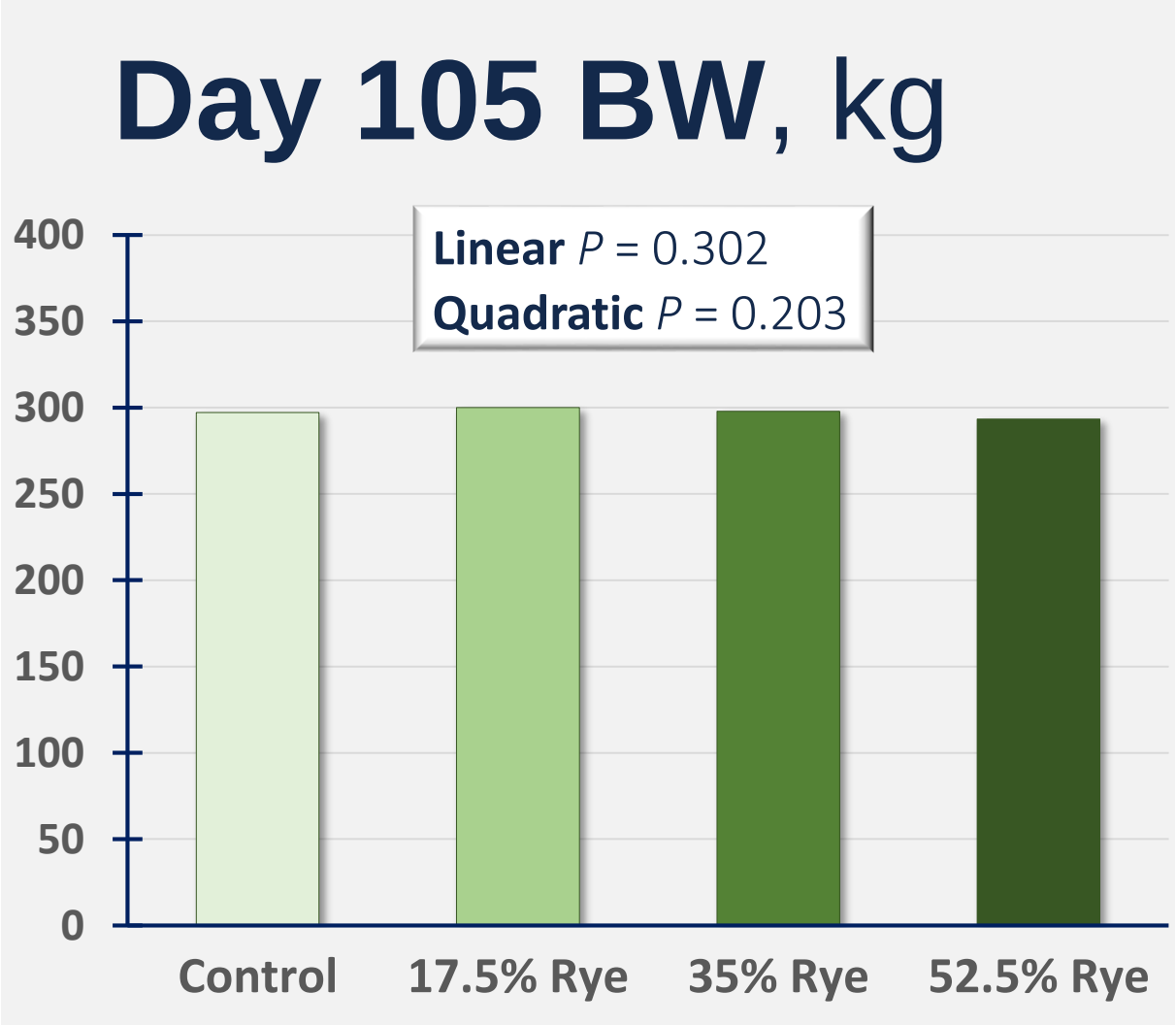
Serum: IgG, IgA, IL-1β, IL-6, TNF-α

Milk: IgG, IgA, SCC, MUN, fat, protein, lactose

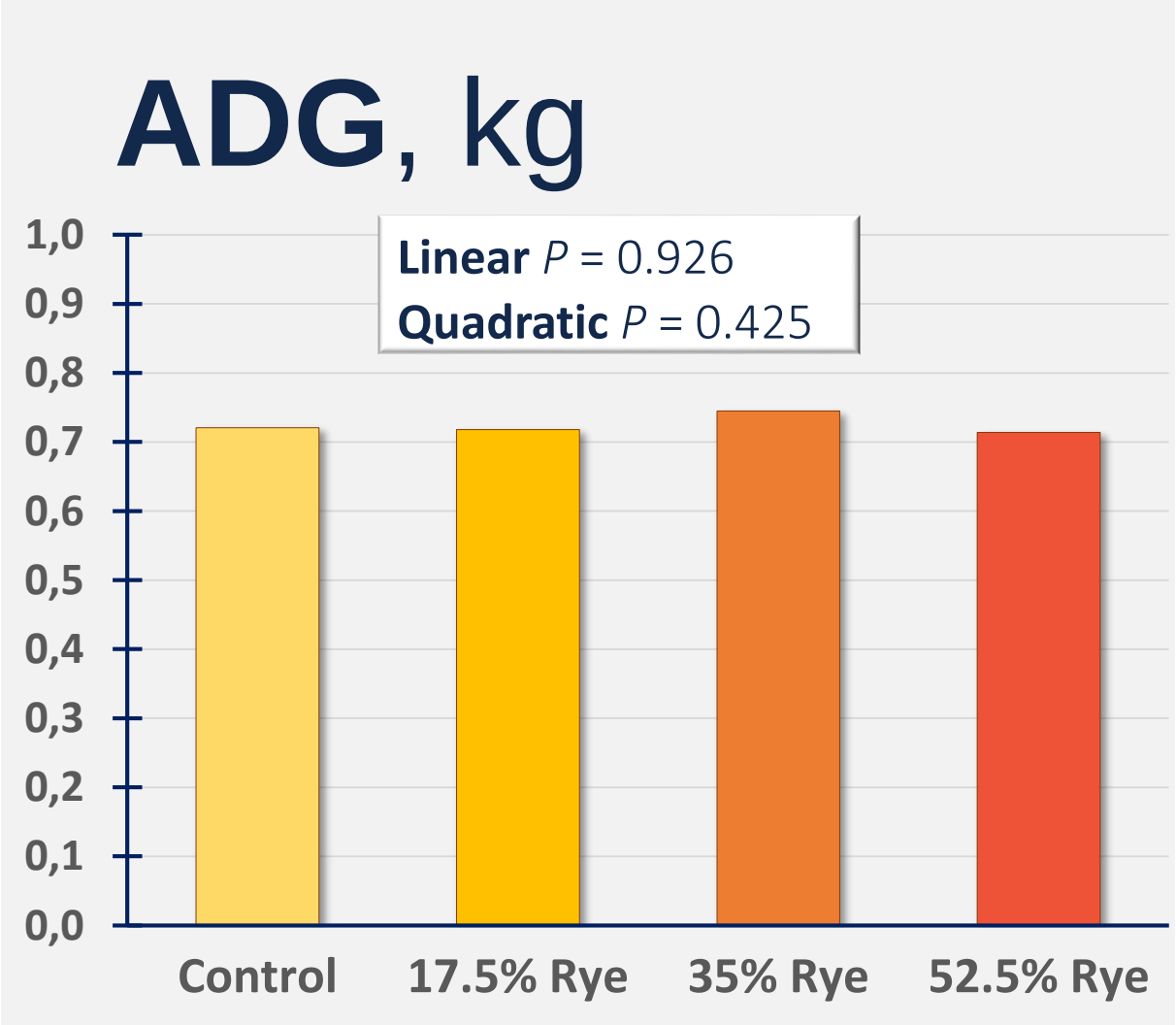


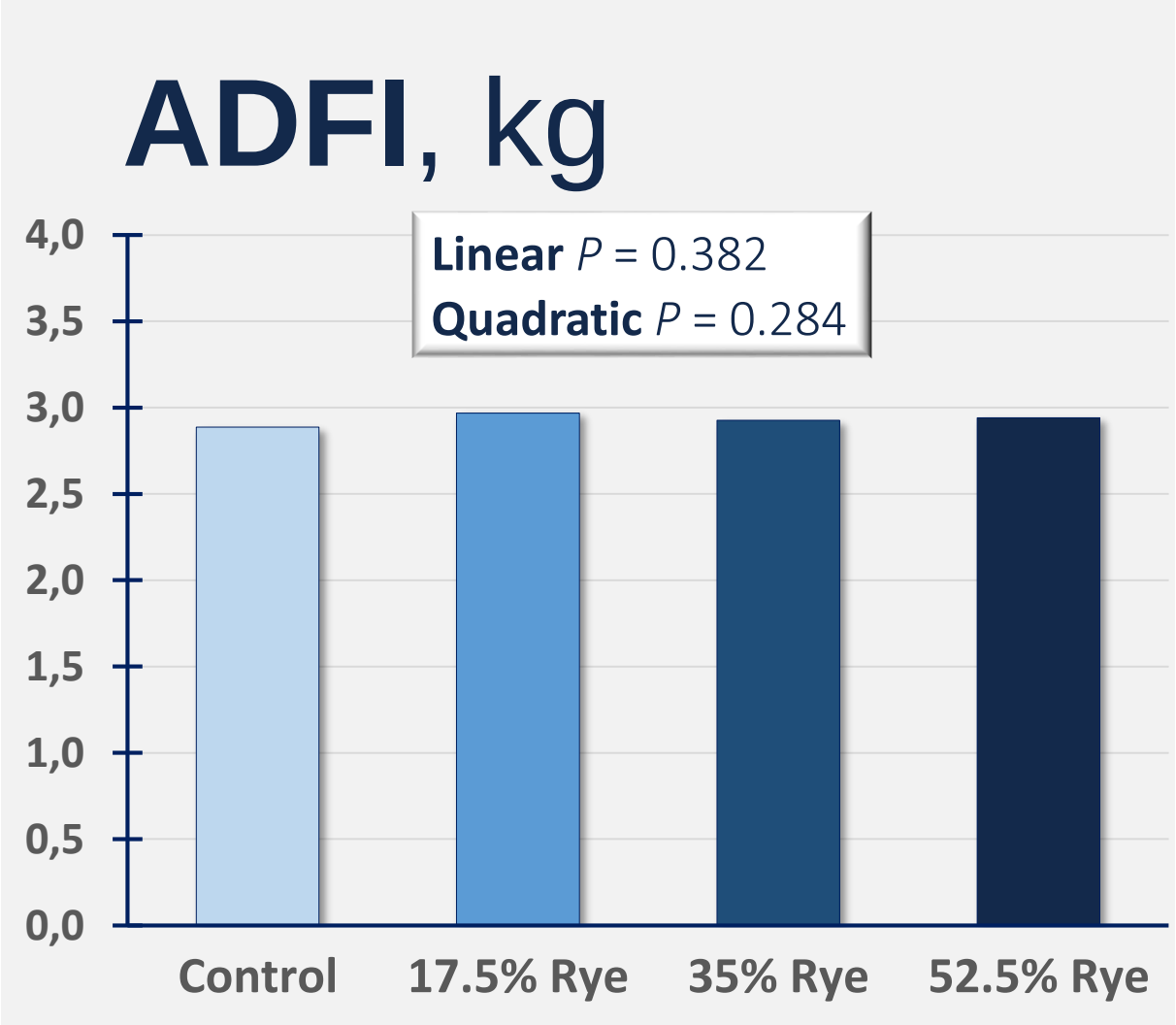
No Differences in BW



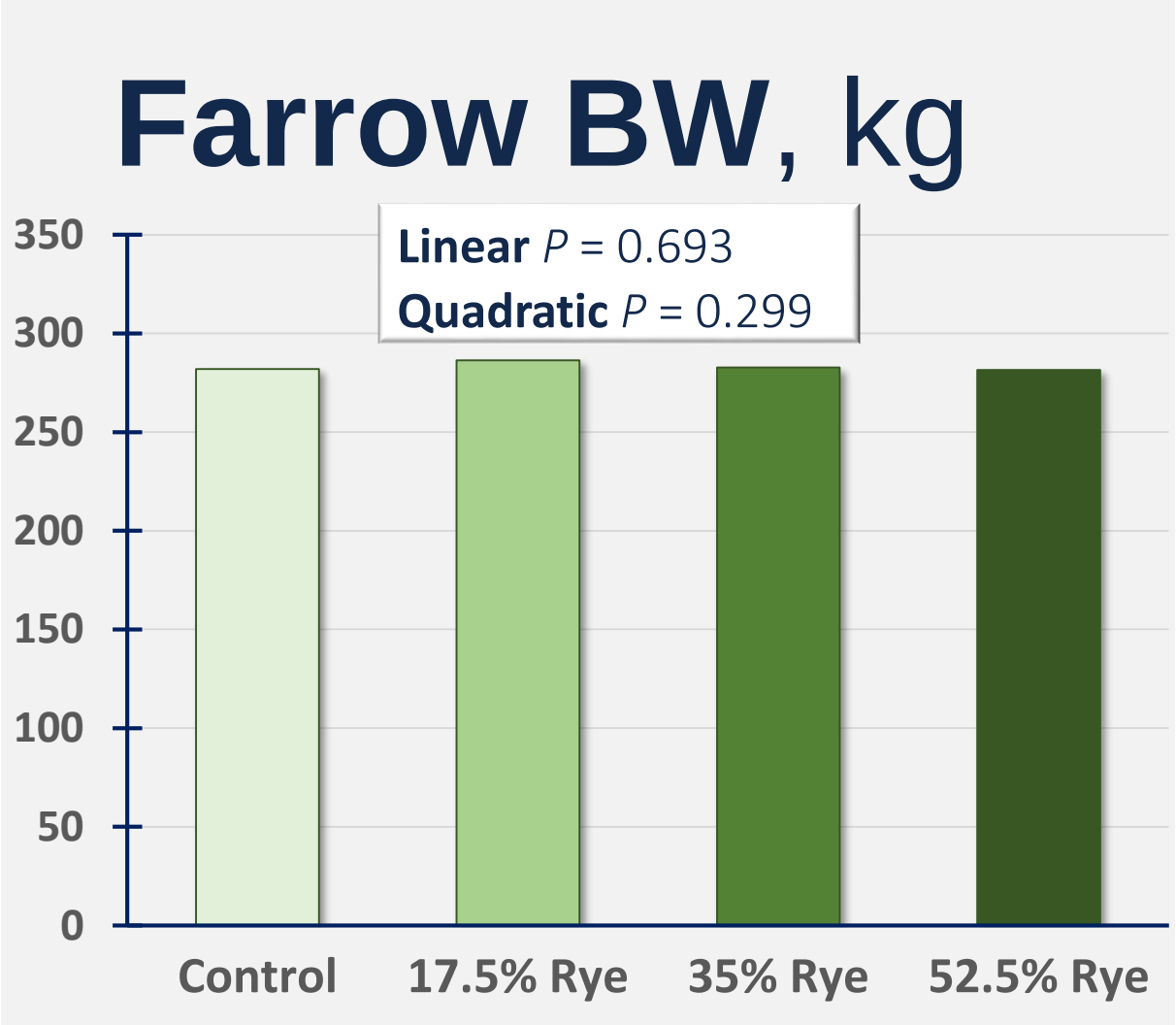


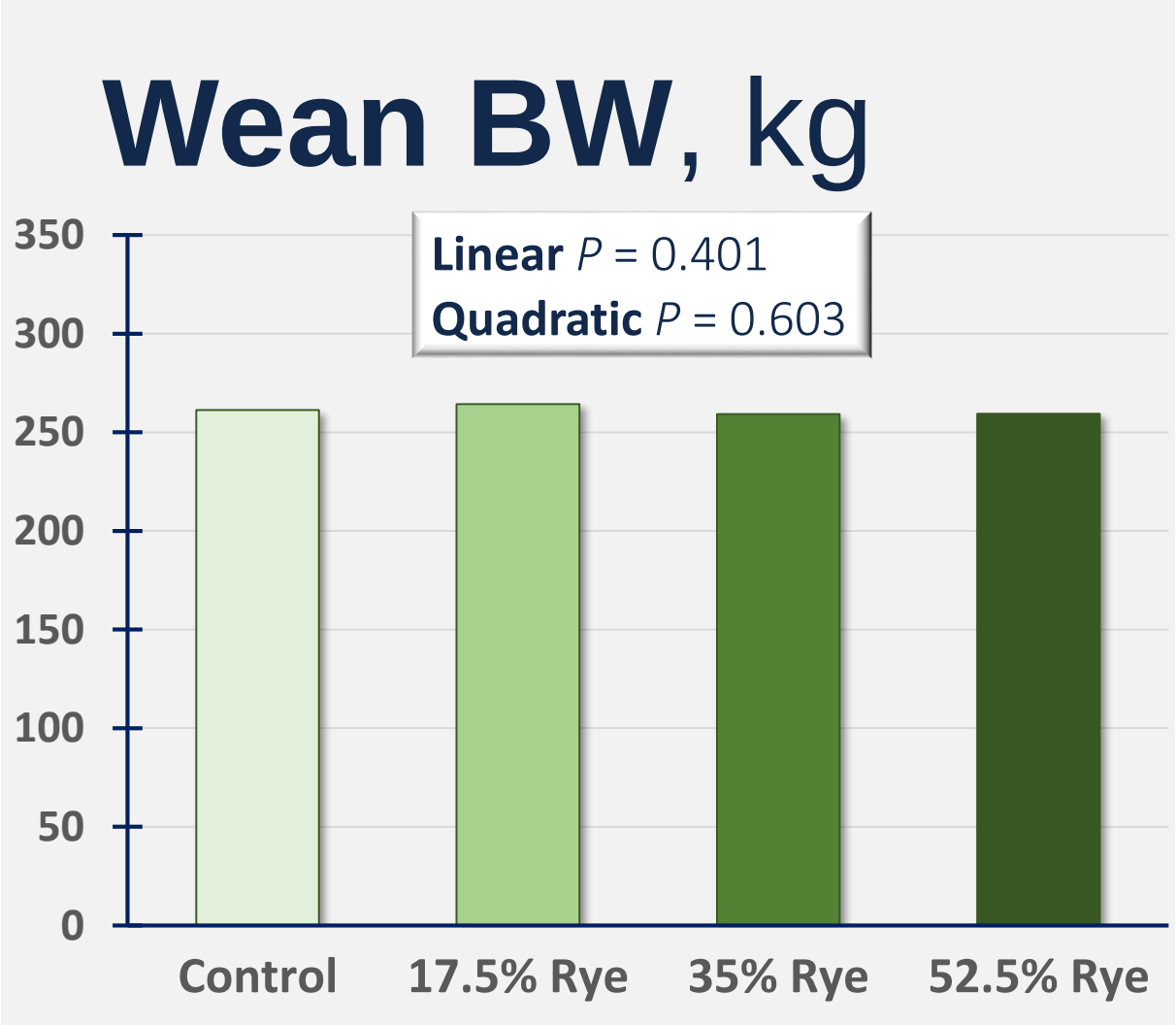
No Differences in ADG and ADFI



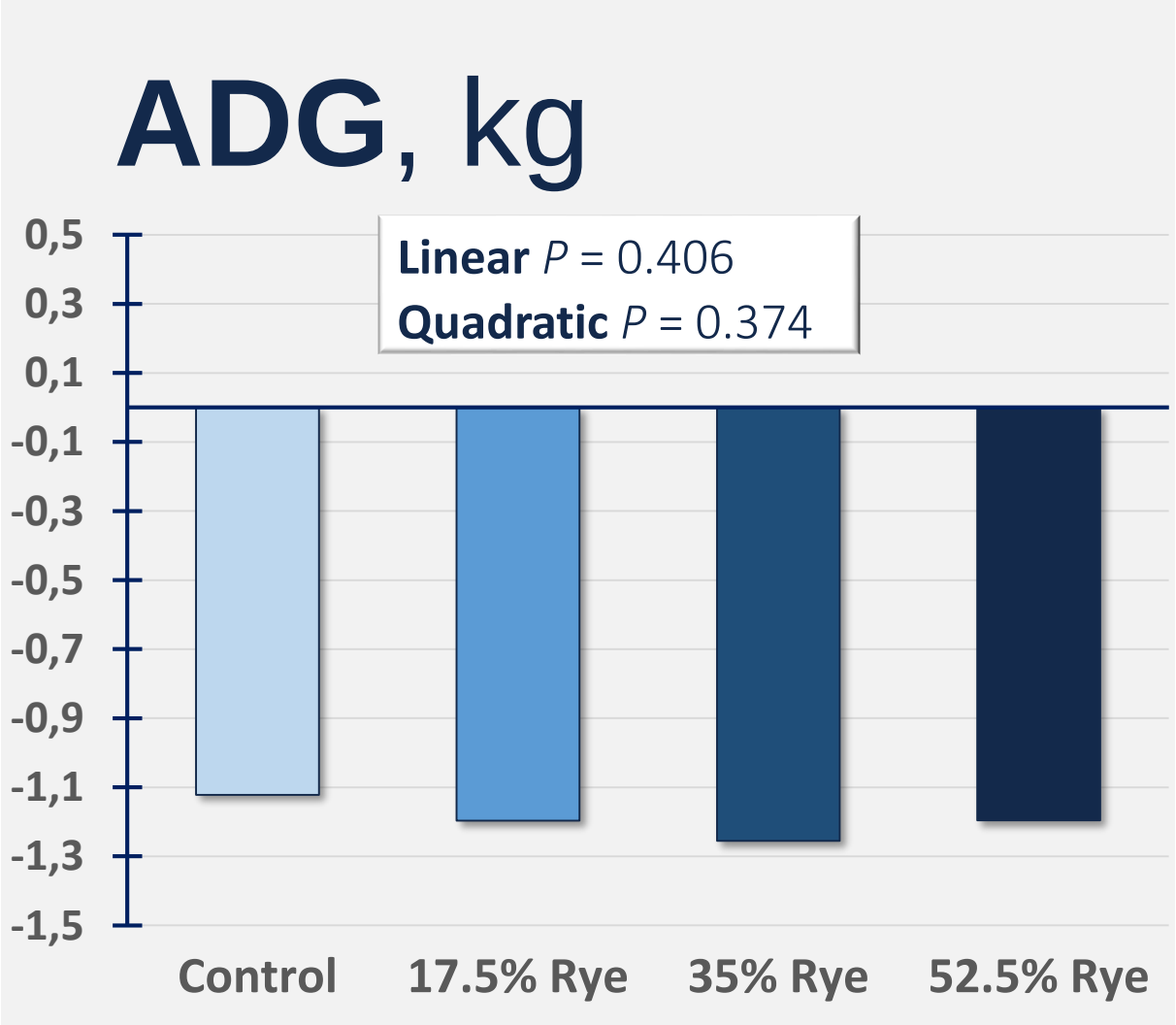


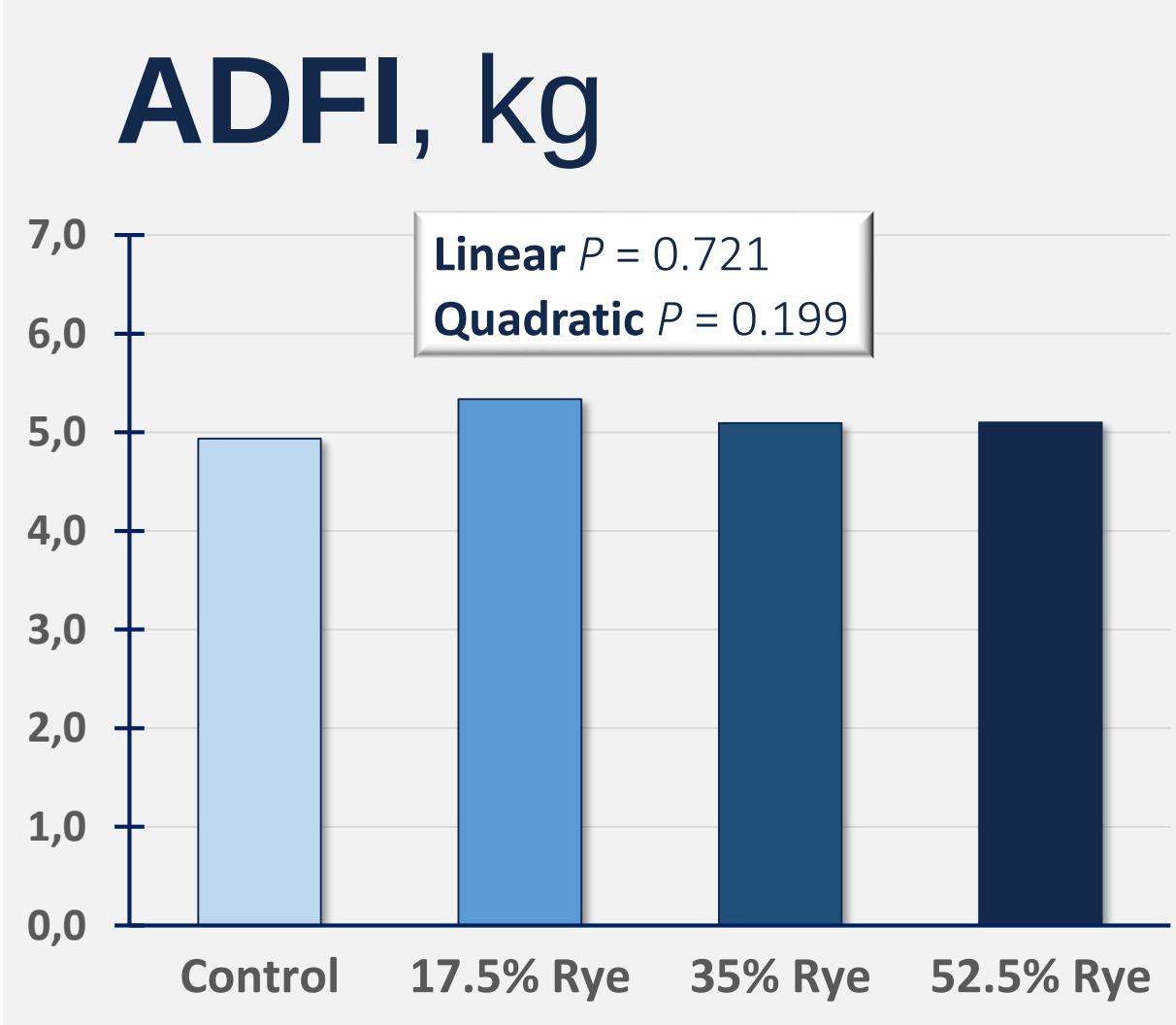
BW after Farrowing and at Weaning not Different



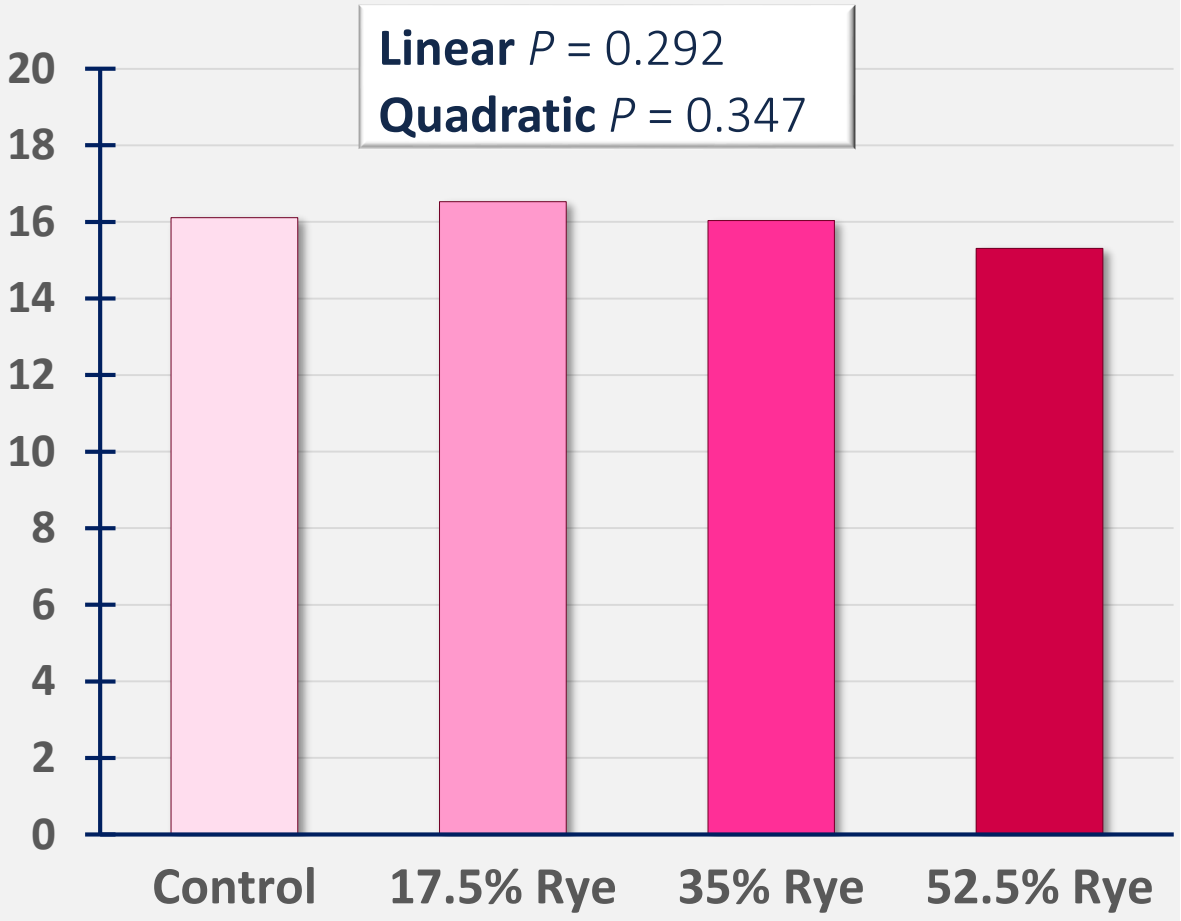


ADG and ADFI in lactation not different

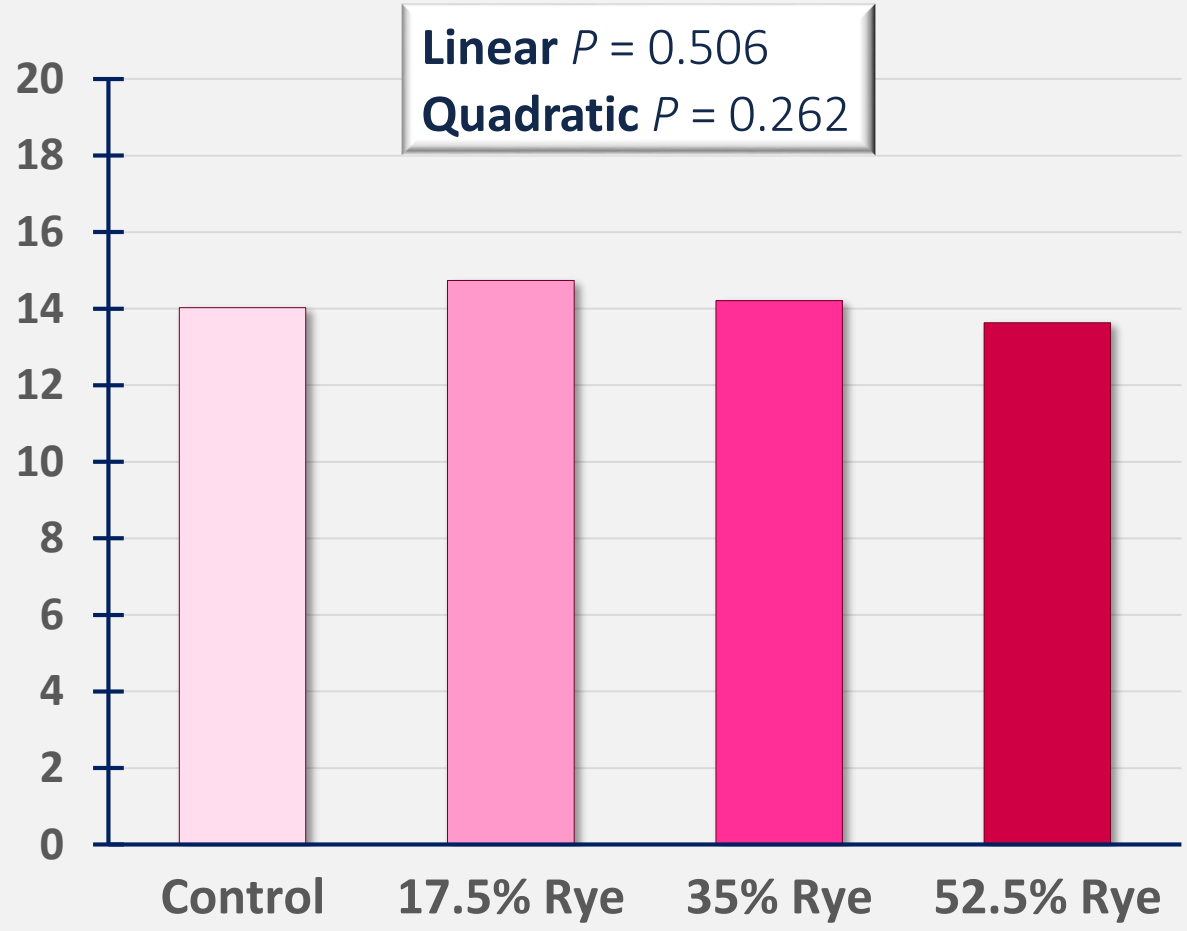




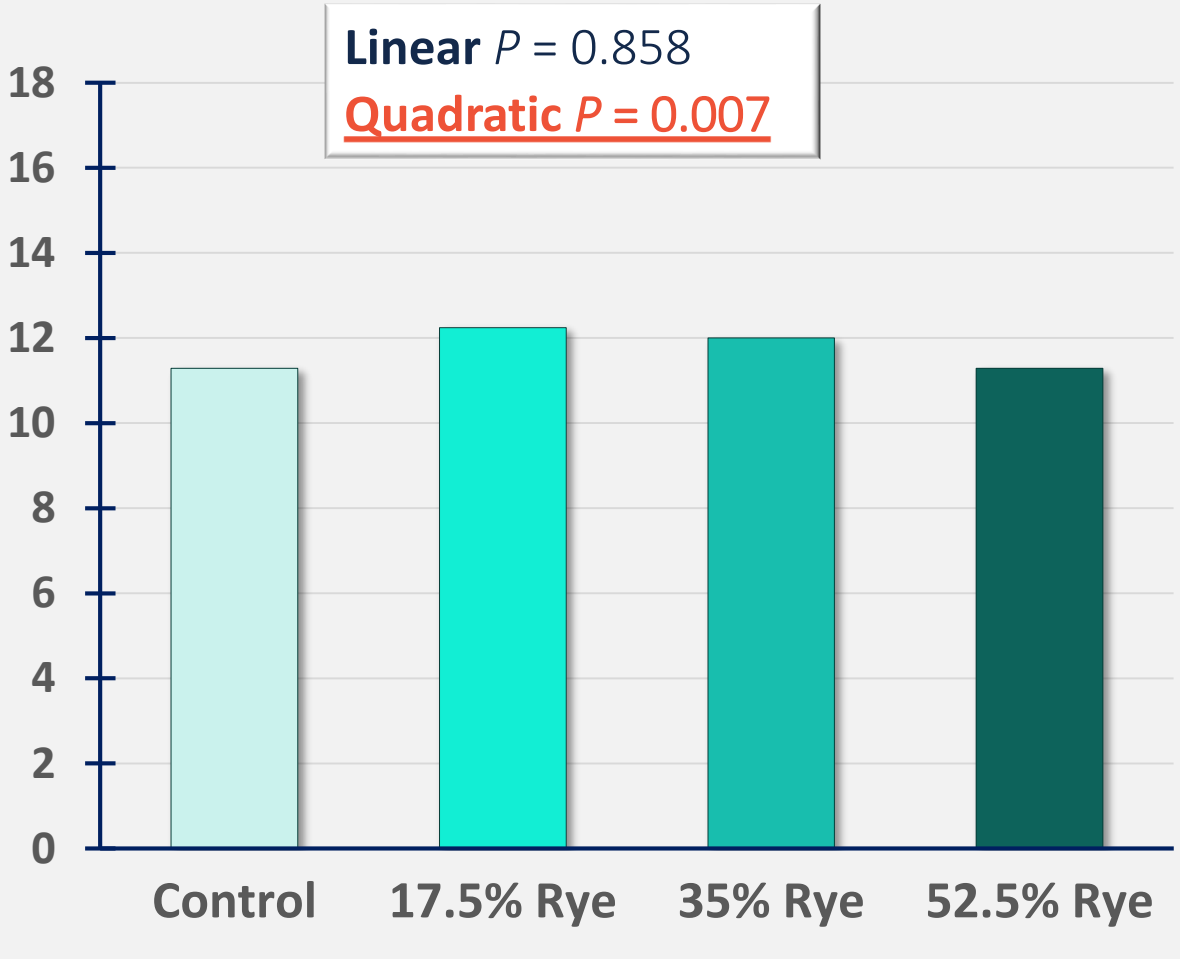
Total born, pigs



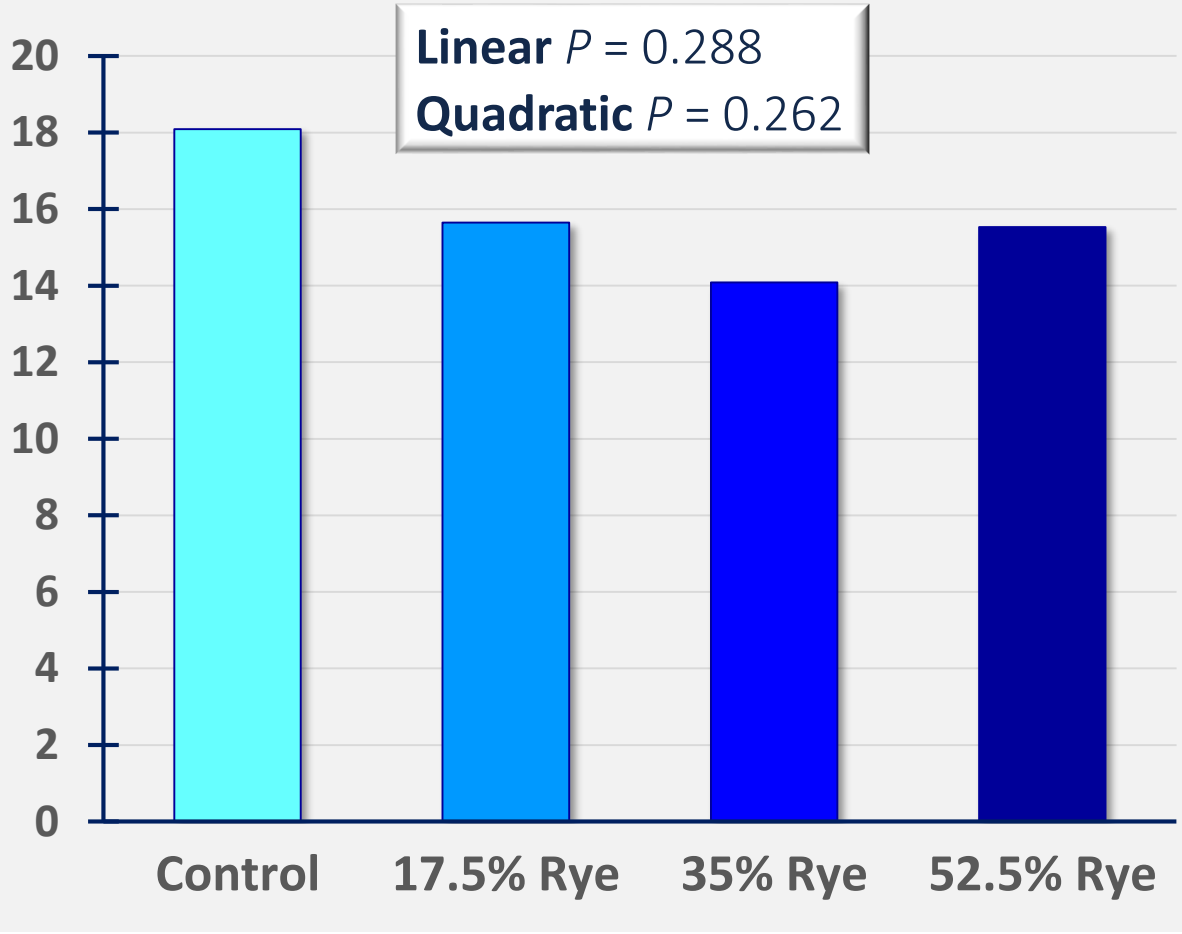
Live born, pigs



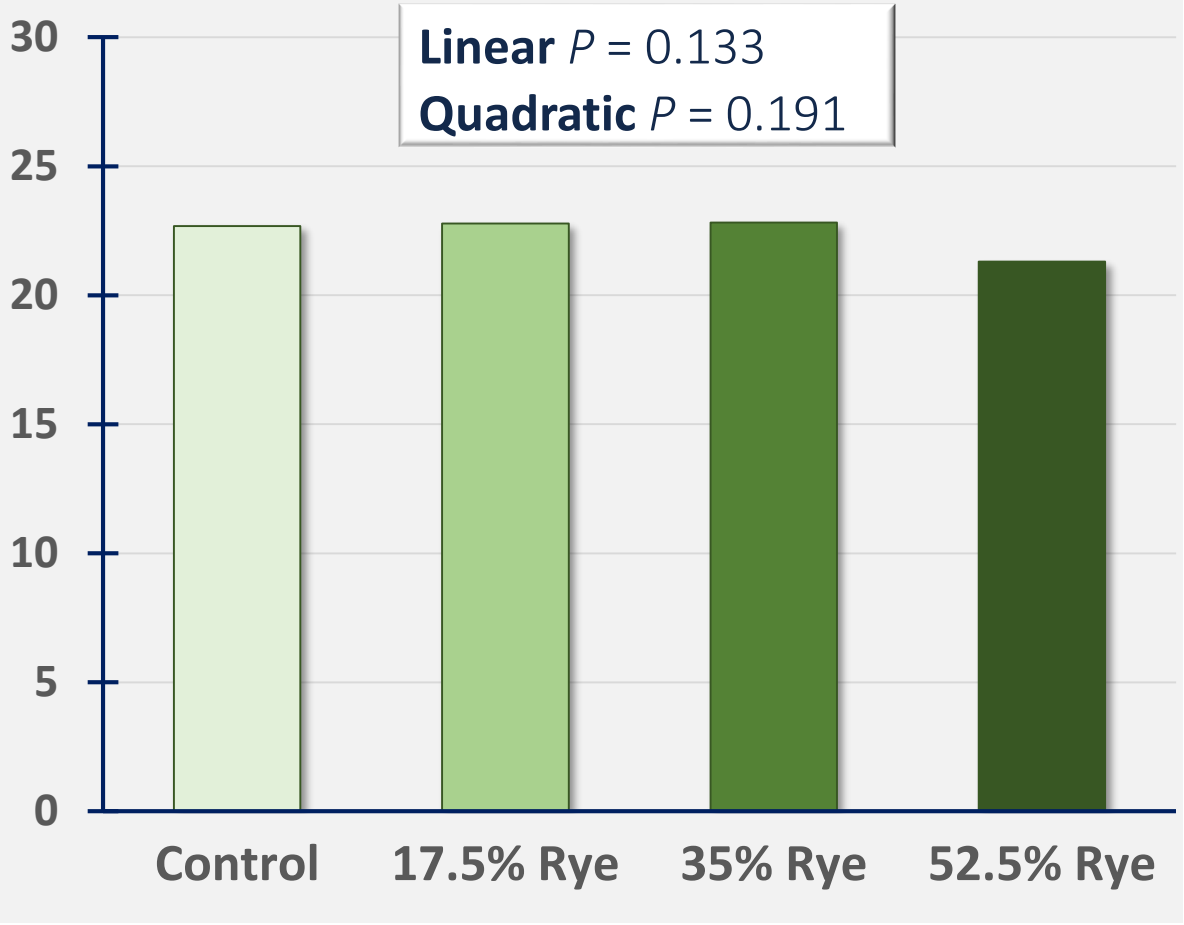
Weaned, pigs



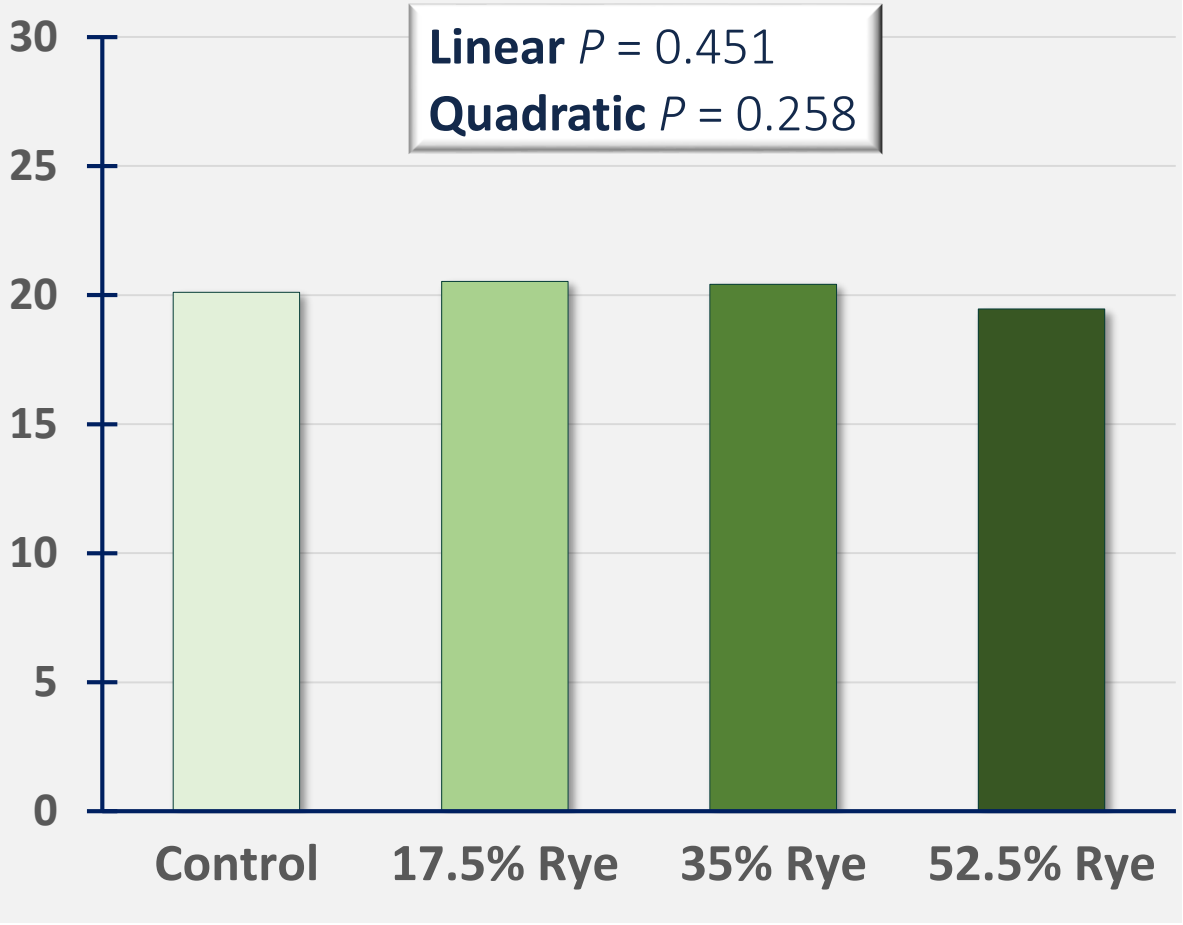
Mortality, %



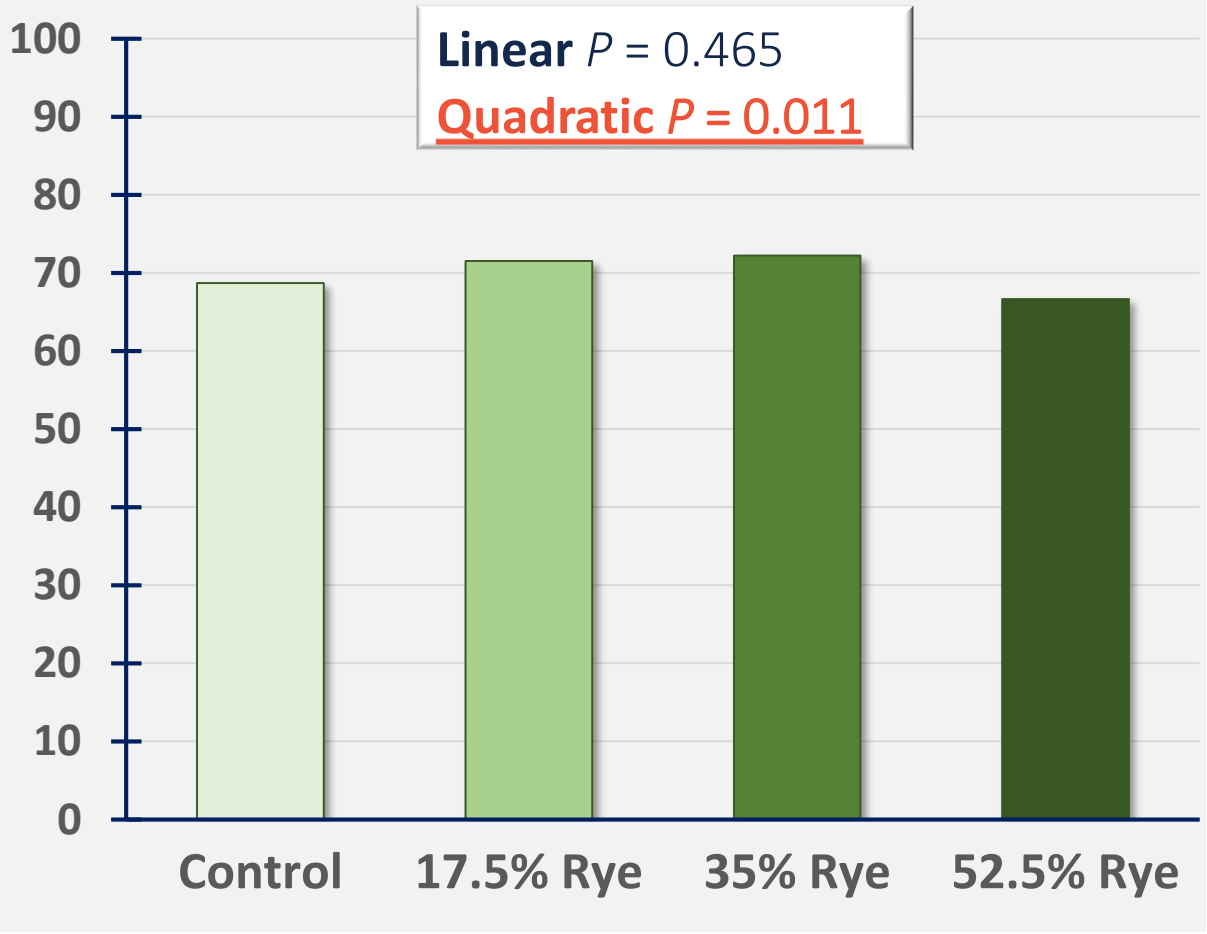
Litter wt., kg



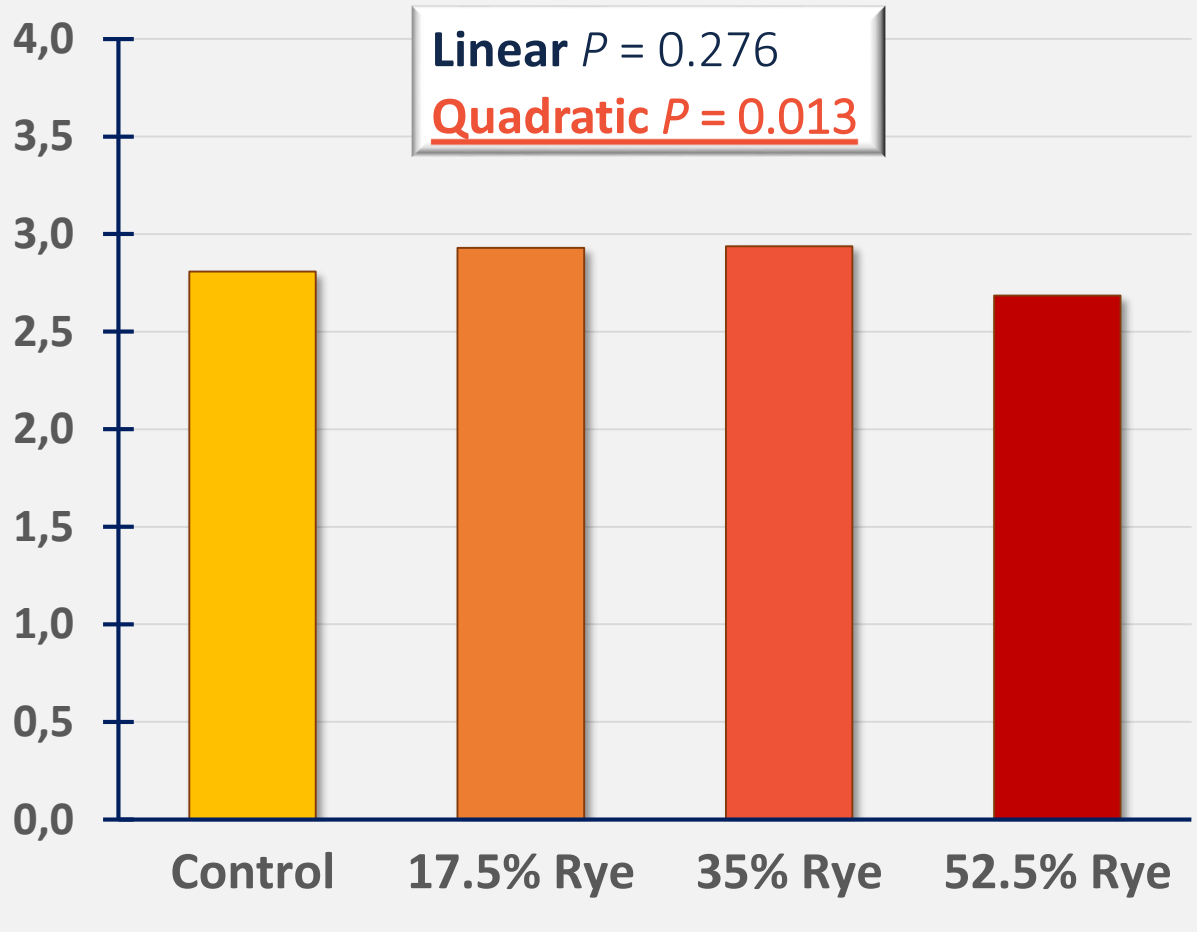
Live litter wt., kg



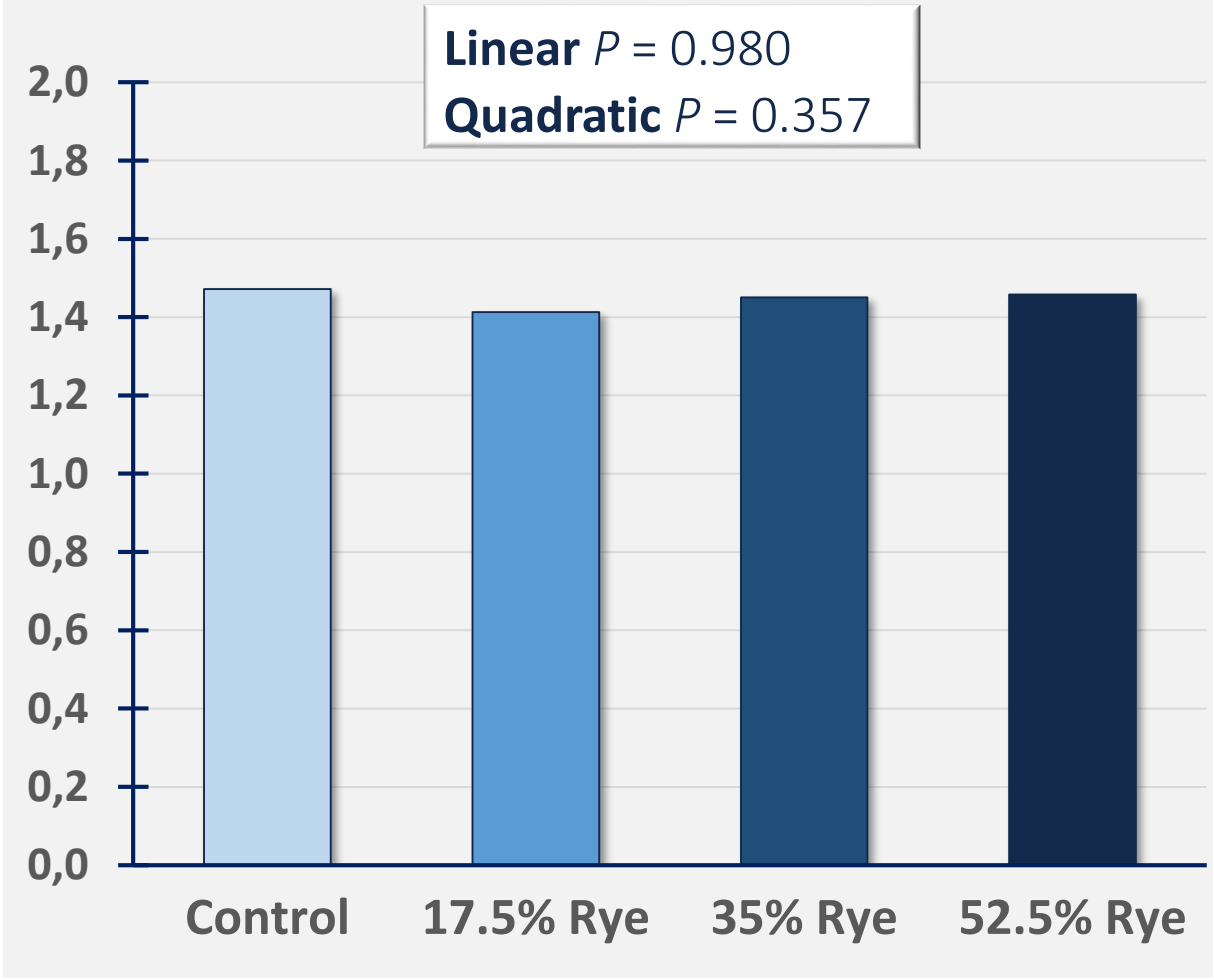
Litter wean wt., kg



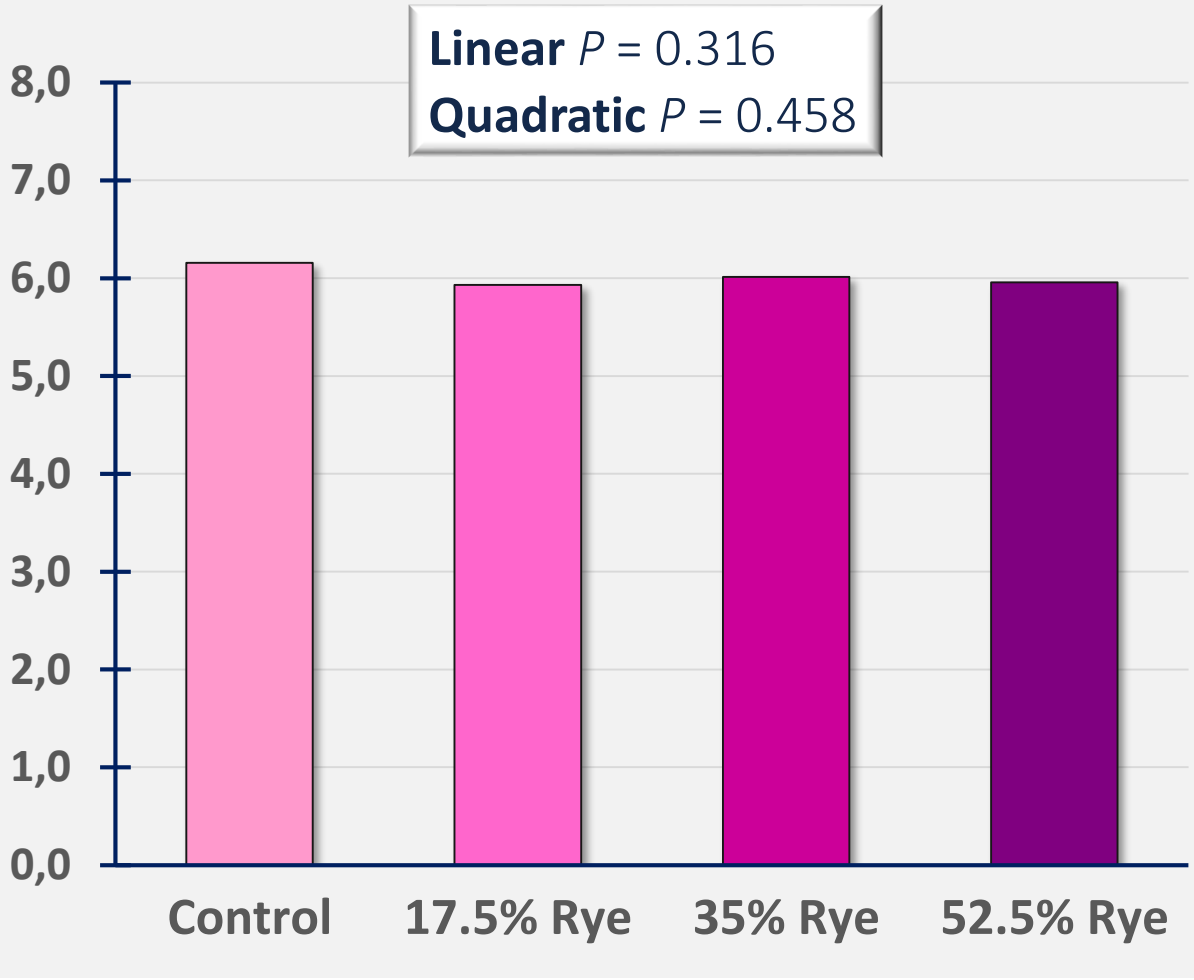
Litter ADG, kg



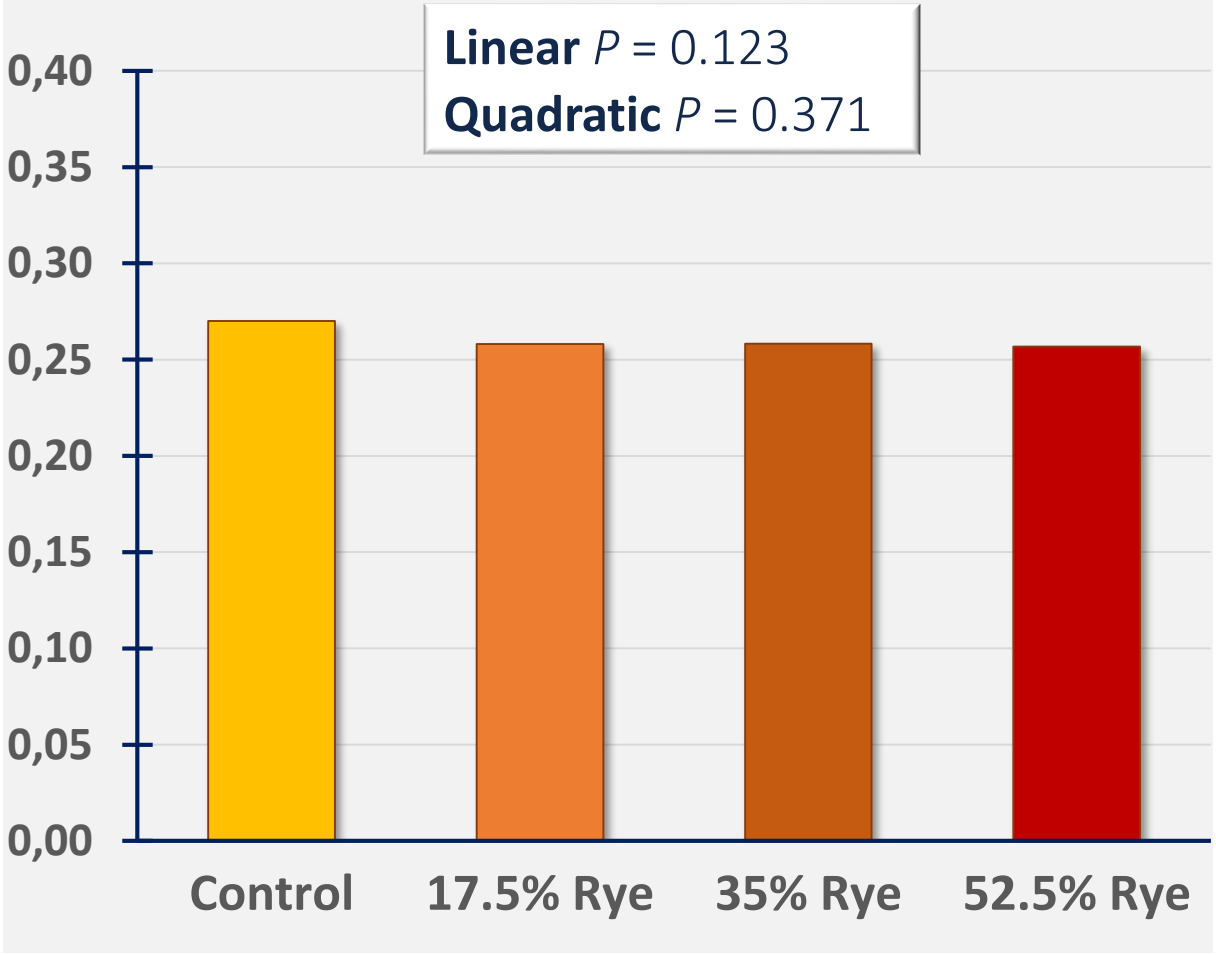
Avg. live wt., kg



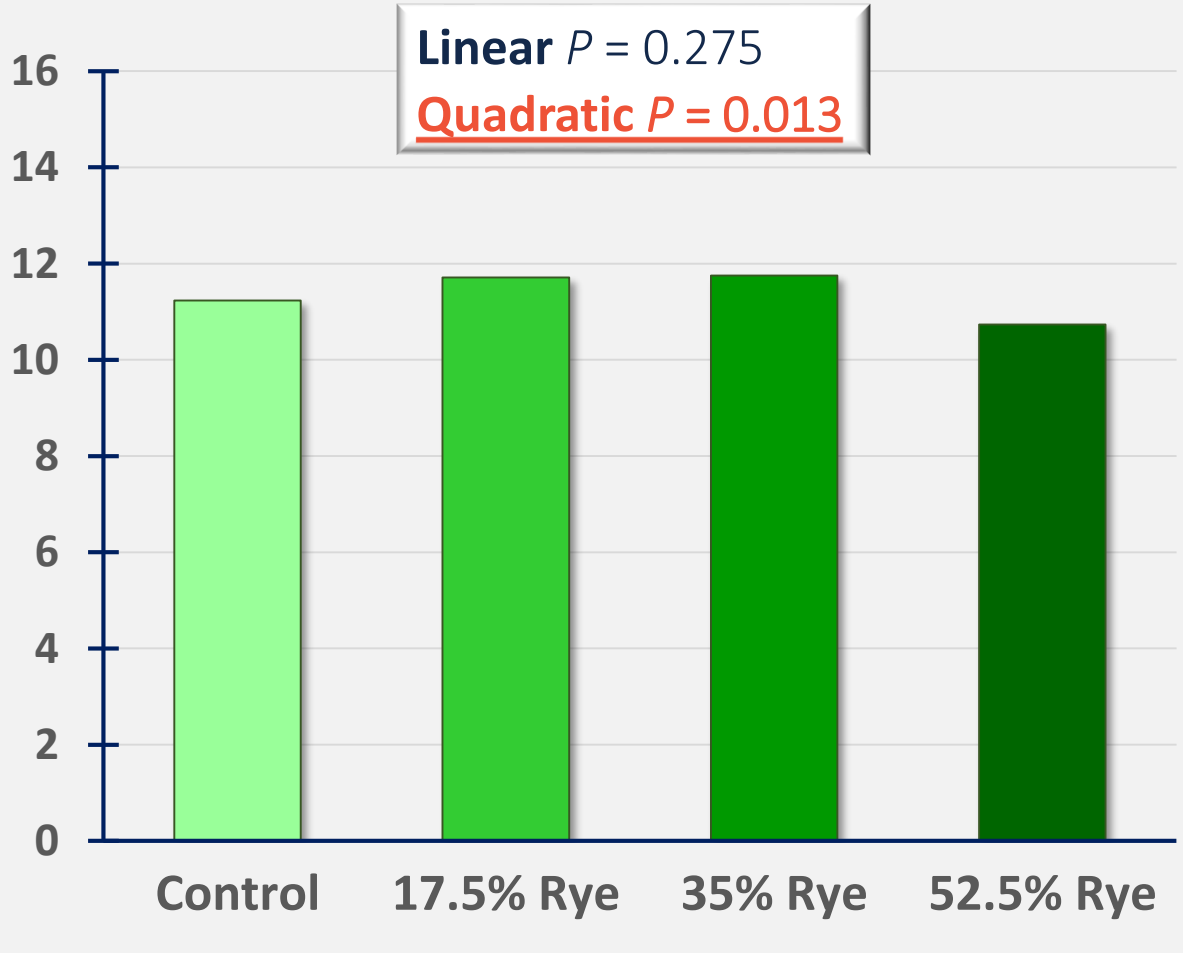
Avg. wean wt., kg



Avg. pig ADG, kg



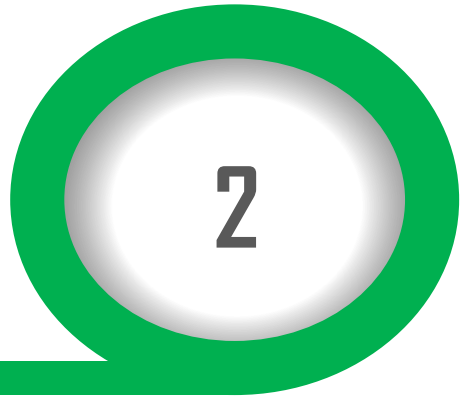
Est. milk/d, kg



Conclusions, Hybrid Rye

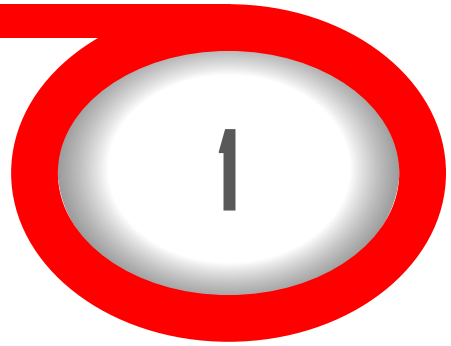
1. Distinct different composition
2. Digestibility similar to corn
3. May also improve intestinal health

Hybrid Rye For Sows

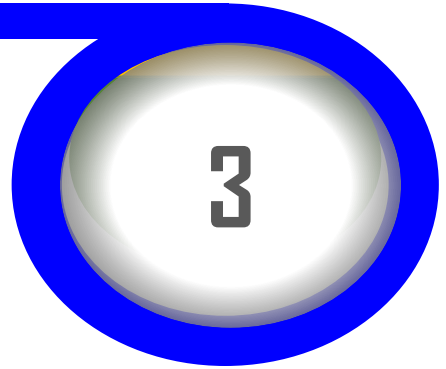


Possible that greater inclusion is OK

Milk yield appears to be greater with moderate levels of hybrid rye



No negative impact of 52.5% hybrid rye in sow diets



Increase in weaned pigs per litter with hybrid rye

Future Work

- Growth performance of weaned pigs and growing finishing pigs
- Impact of hybrid rye on Diet palatability
- Impact of hybrid rye on carcass quality

Improved Pig Performance

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