Digestible indispensable amino acid scores (DIAAS) for egg and plant proteins

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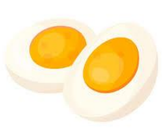
INTRODUCTION AND OBJECTIVES

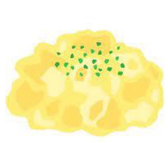
- Eggs are rich in essential amino acids that are required for many functions
- Cooking procedures affect protein quality
- Eggs are often eaten with a variety of foods
- FAO-recommended protein quality assessment: DIAAS method
- Determine DIAAS values for boiled, scrambled, and fried eggs
- Determine DIAAS values for combined meals of eggs with breads and potatoes
- Determine complementarity and additivity of DIAAS

MATERIAL AND METHODS

10 Experimental Diets



Boiled egg

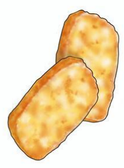


Scrambled egg

Fried egg

English muffin

Texas toast



Hash brown

English muffin w/ fried egg

Texas toast w/ boiled egg

Hash brown w/ scrambled egg

Nitrogen free

x 9

51.1 kg

Youden square design

Six 7-day periods

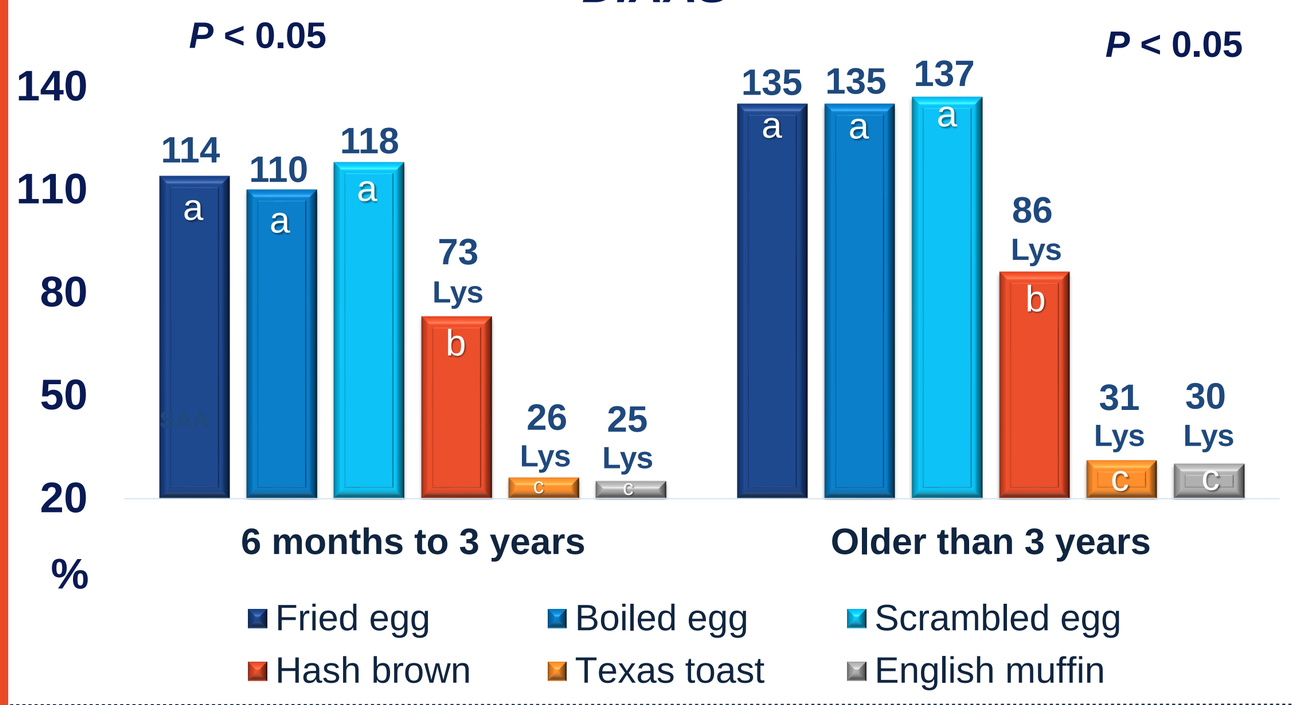
Collection days 6 and 7

SID

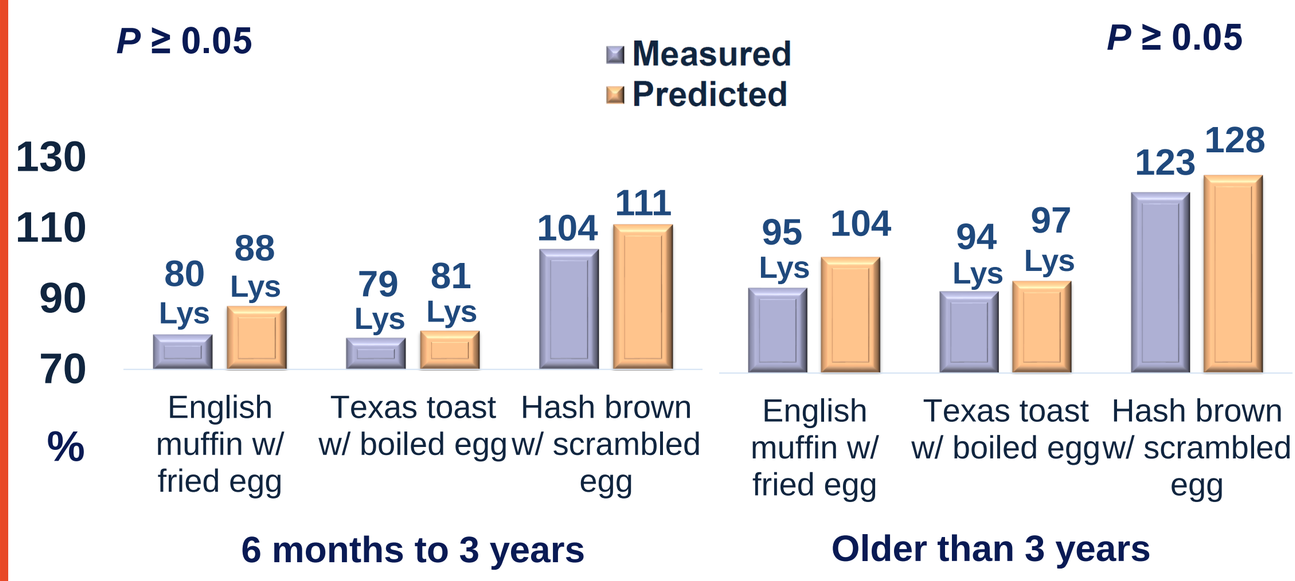
DIAAS

RESULTS

DIAAS



Measured vs Predicted



CONCLUSIONS

- Eggs have greater DIAAS than plant proteins
- The low quality of plant proteins can be compensated if they are consumed in combination with eggs, but both combinations of bread and egg presented lysine as first limiting amino acid
- There is no limiting amino acid for cooked eggs calculated for children over 6 months of age
- Boiling, frying, or scrambling did not affect protein quality of eggs
- DIAAS is additive in combined meals

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