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## Using high throughput phenotyping of growth and feed intake to improve adaptation of chickens to sustainable diets

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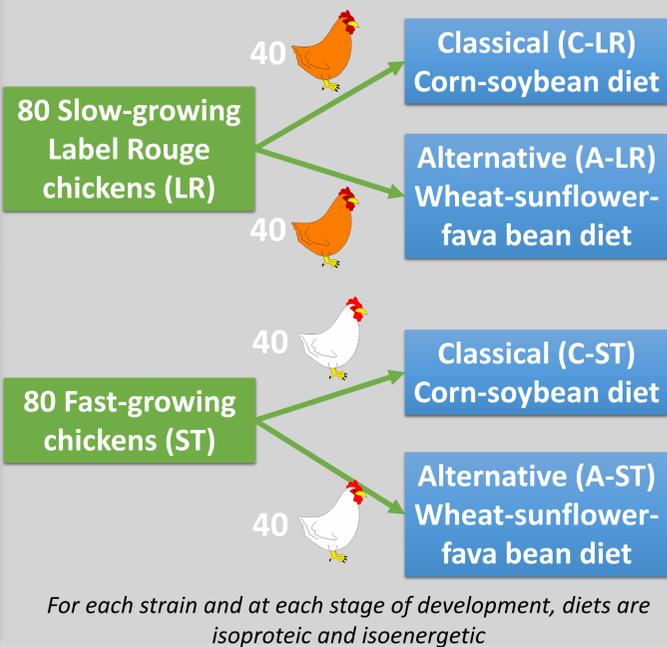
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## Context

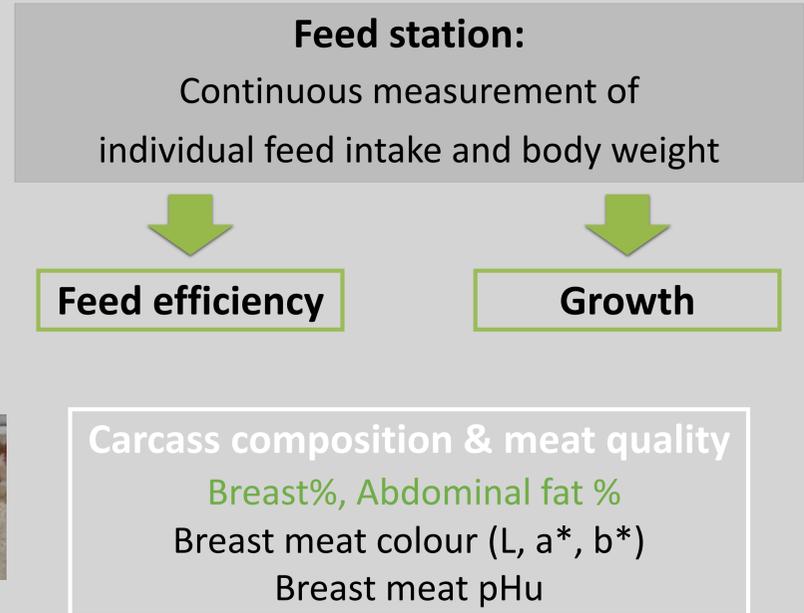
Diversification of feedstuffs used in poultry diets implies that animals have to be able to adapt to alternative diets, in order to maintain their feed efficiency and growth when fed with various diets. We thus compared slow and rapid-growing broilers fed with a corn-soybean diet or with an alternative diet including more sustainable feedstuffs. Adaptation to the diets was assessed through a continuous and individual phenotyping of body weight and feed intake on floor-reared animals, thanks to an electronic feed station.

## Materials and methods

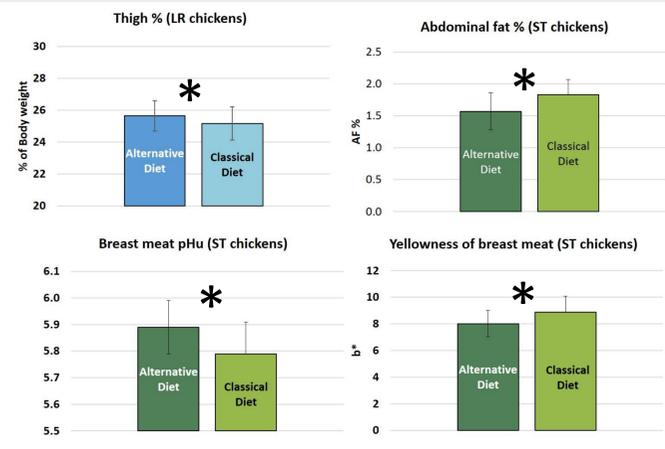
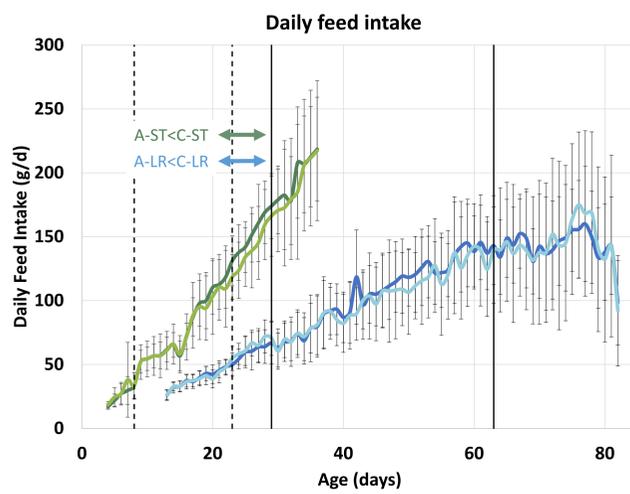
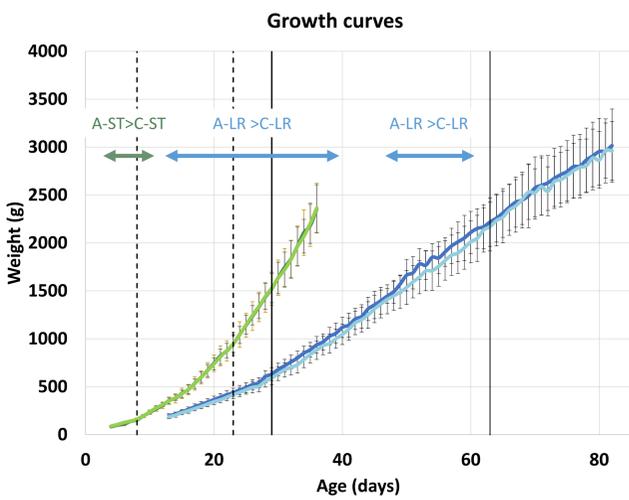
### Experimental design



### Deep large scale phenotyping



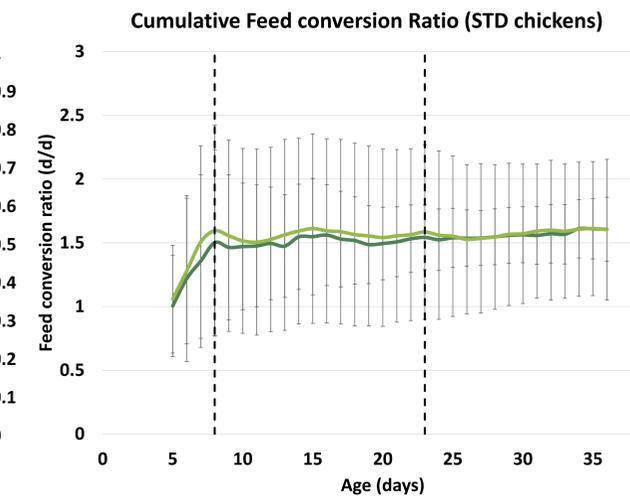
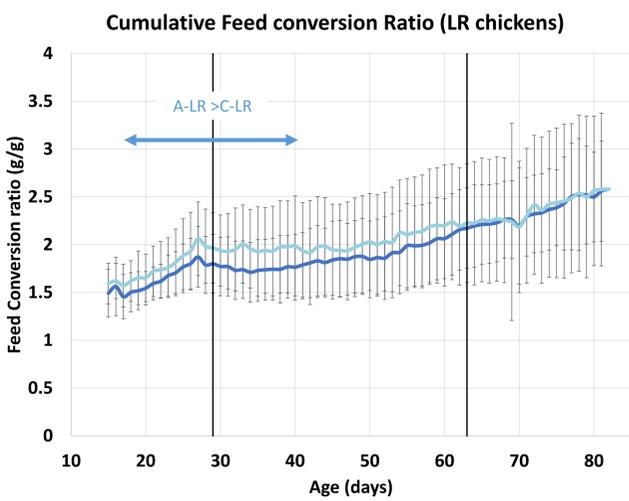
## Results



C-ST : Classical diet, standard chicken  
 A-ST : Alternative diet, standard chicken  
 C-LR : Classical diet, label rouge chicken  
 A-LR : Alternative diet, label rouge chicken

⇌ Significant effect of diet (ST)  
 ⇌ Significant effect of diet (LR)

..... Age of diet changes (ST) Starter → Grower → Finisher  
 ..... Age of diet changes (LR) Starter → Grower → Finisher



**CONCLUSION**

Label Rouge chickens have a similar FI, a slightly better growth until 58 days and a better efficiency during the first 40 days with the alternative diet. Except for thigh percentage, higher with the alternative diet, no difference was observed on carcass composition nor meat quality between the two diets. Standard chickens have the same FI, growth and FCR whatever the diet. Animals fed with the classical diet have more abdominal fat and a more acidic and yellower meat.

*Animals adapt well to the alternative diet, having periods of enhanced or identical performances than with a classical corn-soybean diet.*