

# To toast or not to toast – Grass peas for weaned piglets



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## Background and aim of work

As part of the EU Core Organic II project ICOPP („Improved contribution of local feed to support 100% organic feed supply to pigs and poultry“), a feeding trial with grass peas (*Lathyrus sativus*) fed to weaned piglets was conducted in Austria in 2012.

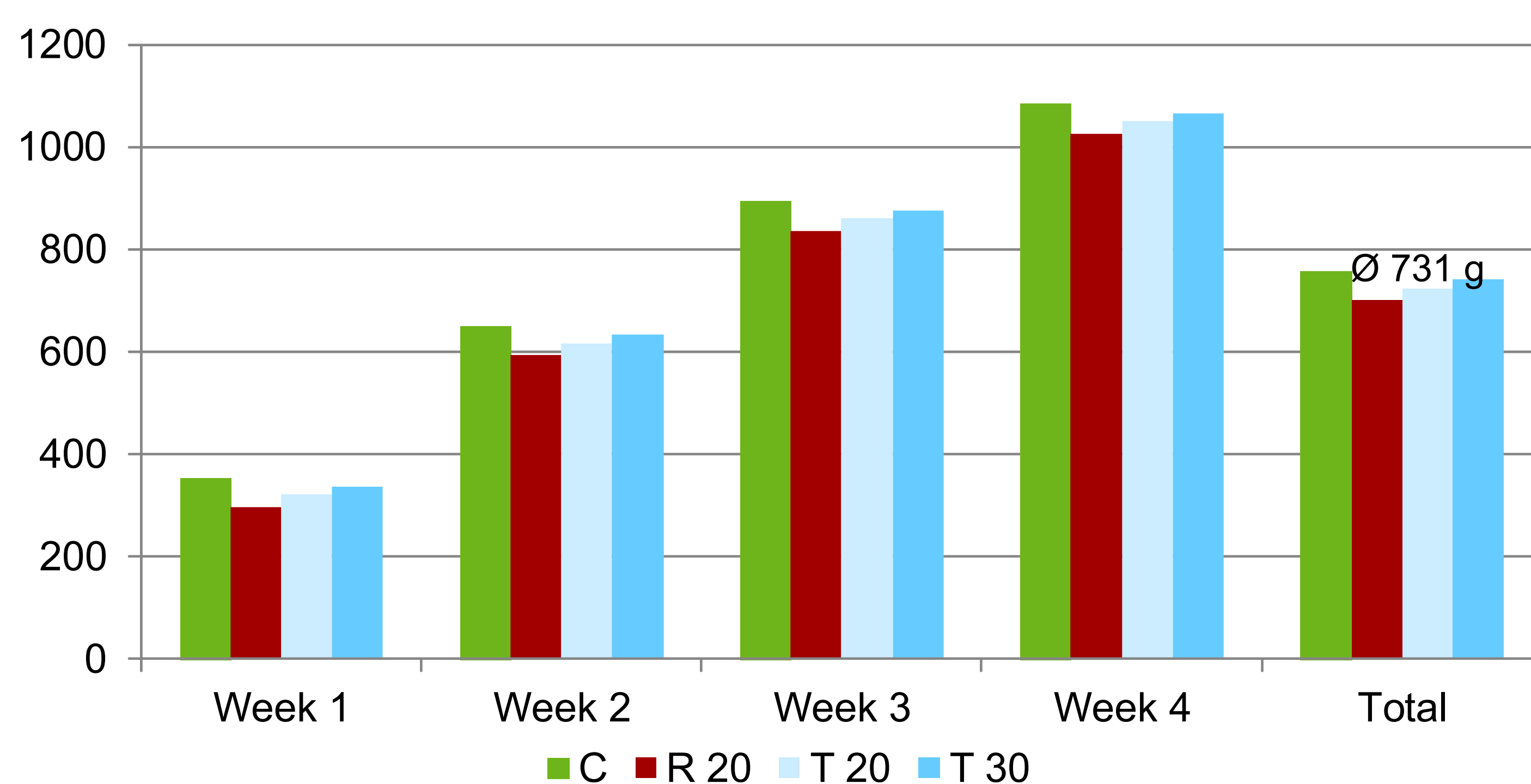
The grass pea is a hardy grain legume that produces seeds with crude protein contents between 200 and 300 g kg<sup>-1</sup>. Unfortunately it contains the neurotoxin ODAP, which causes nerve damage after prolonged and/or intensive feeding. Since ODAP is water-soluble and susceptible to heat, hydrothermal treatment (=toasting) greatly reduces toxicity. Therefore a feeding trial was conducted in order to compare raw and toasted grass peas as feed for weaned piglets.

## Methods

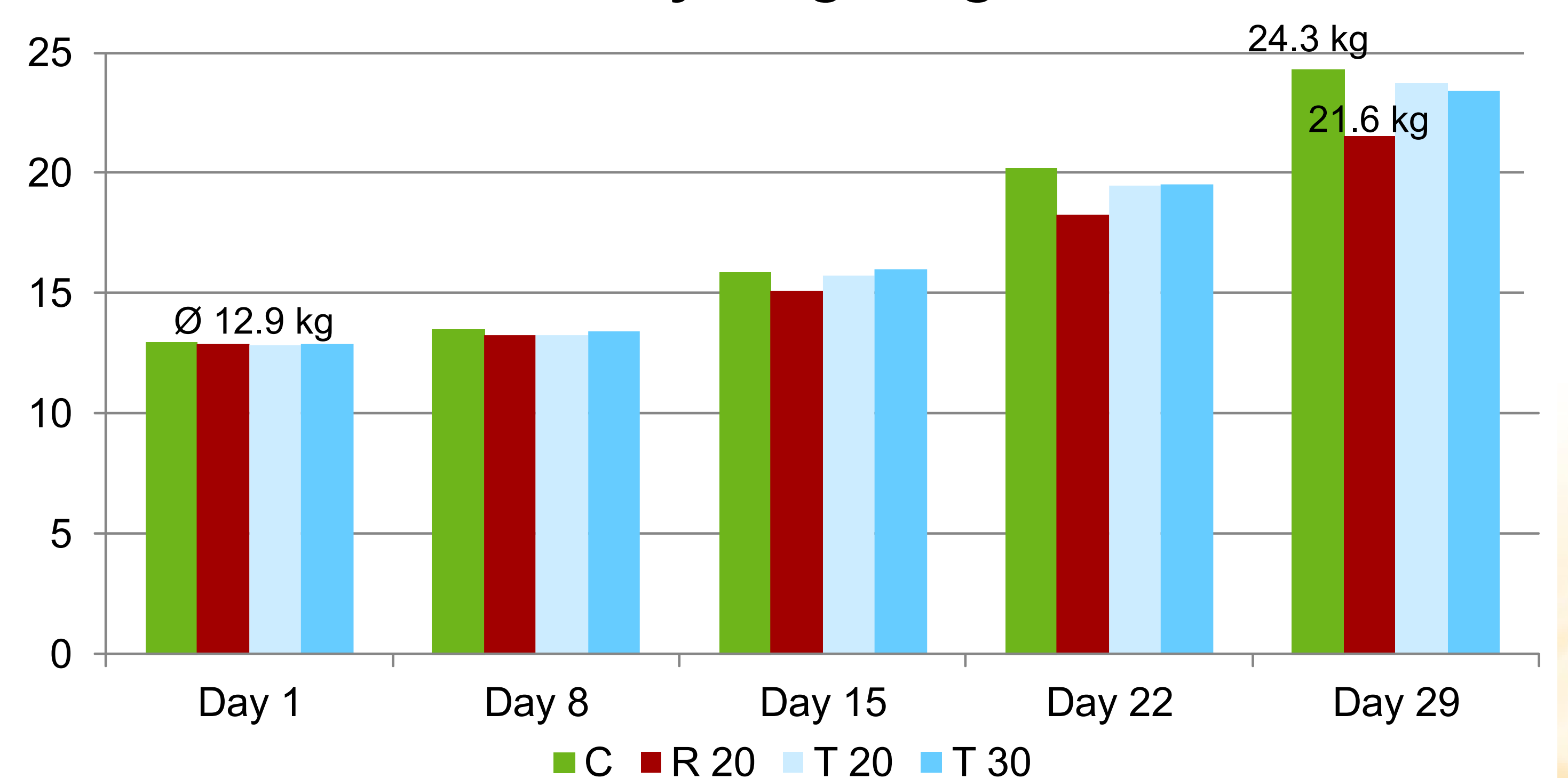
- 4 diets (C = control, R 20 with 20% raw grass peas, T20 and T30 with 20 and 30% toasted grass peas, respectively; as fed basis)
- Grass peas replaced peas and reduced the proportion of soybean cake in the diets.
- Diets were fed during the 4-week rearing phase after weaning to 144 (Landrace\*Large White)\*(Pietrain\*Duroc) piglets.
- Groups of piglets were limit-fed using an automated feeding system.
- Statistical analysis was performed using SAS 9.1 proc glm (feed intake and feed conversion ratio) and proc mixed (body weight); graphs show lsmeans.

## Results

### Feed intake, g day<sup>-1</sup>



### Body weight, kg



### Feed conversion ratio, kg feed intake kg<sup>-1</sup> weight gain

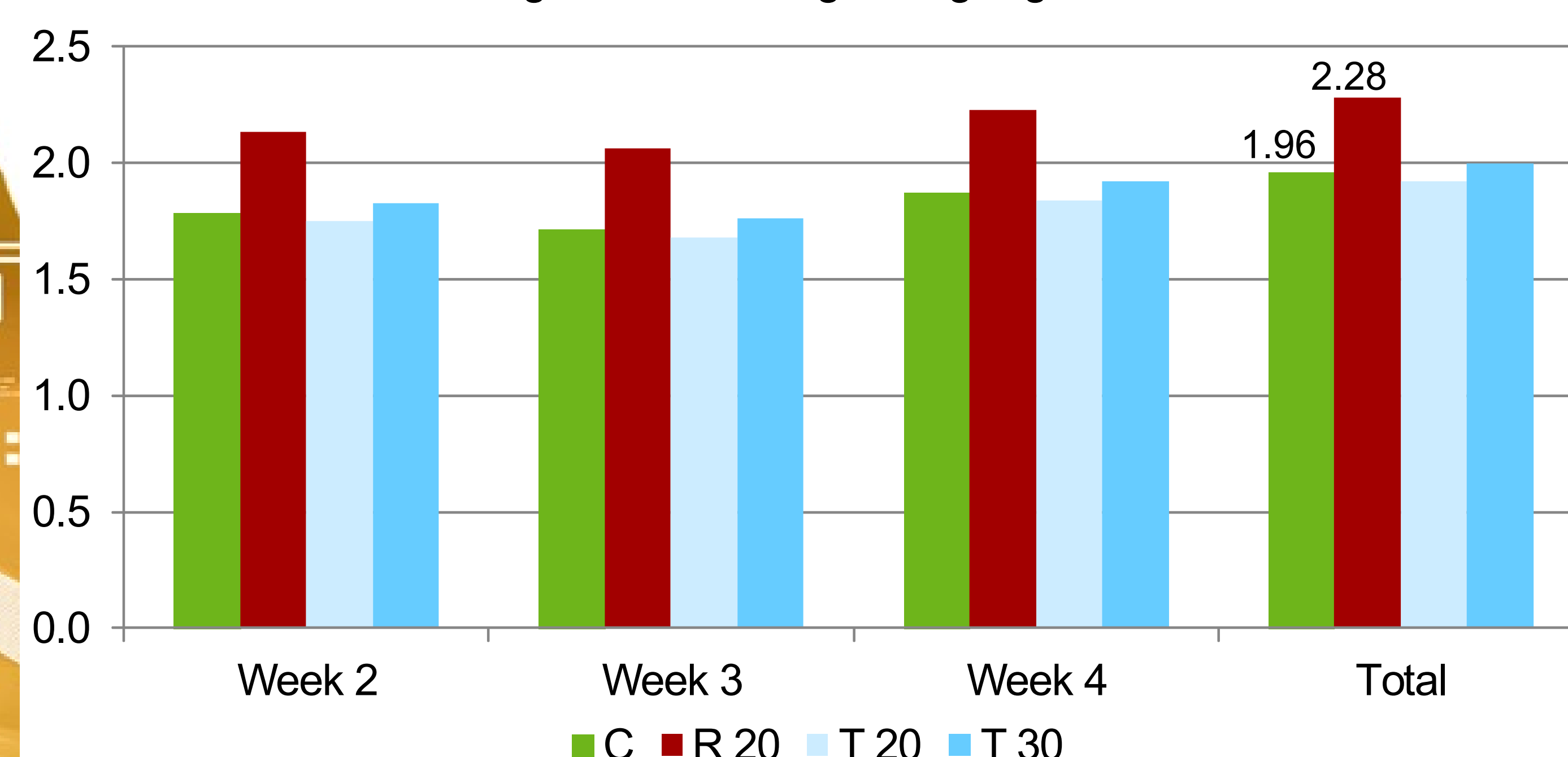


Table 1. Nutrient contents of the diets, as fed basis

	C	R 20	T 20	T 30
Crude protein, g kg <sup>-1</sup>	182	178	180	177
Lysine, g kg <sup>-1</sup>	9.7	9.2	9.5	9.4
Energy, MJ ME	13.5	13.6	13.6	13.5
g Lys MJ <sup>-1</sup> ME	0.72	0.68	0.70	0.70

Feed intake of piglets did not differ (p-value diet = 0.102), but feeding 20% raw grass peas had significant negative effects on body weight gain: While the diets containing toasted grass peas resulted in a body weight development similar to the control diet, from day 15 on piglets fed diet R 20 were significantly (p-value diet\*day <0.001) lighter than all others, and the difference grew more pronounced with time. Consequently, from day 15 on, feed conversion ratio was significantly higher in diet R 20 (p-value diet <0.001).

## Conclusions

- Including 20-30% toasted grass peas in diets for weaned piglets had no negative effect on feed intake, body weight development and feed conversion ratio.
- Including 20% raw grass peas led to significantly lower body weights and a higher feed conversion ratio.
- Therefore toasting of grass peas prior to feeding to weaned piglets is recommended.

