Effects of increasing dietary concentrations of specific structured triacylglycerides on performance and nitrogen and energy metabolism in broiler chickens - DTU Orbit (30/12/2018)

Effects of increasing dietary concentrations of specific structured triacylglycerides on performance and nitrogen and energy metabolism in broiler chickens

1. Specific structured triacylglycerides (STG) containing medium chain fatty acids in sn-1,3 positions and along chain fatty acid in sn-2 position were prepared from rapeseed oil and capric acid (C10:0). 2. A total of 80 female broiler chickens (Ross 208) were randomly allocated into five dietary treatments as two series of 40 chicks: a basal diet with graded levels of STG of 0, 20, 40, 60 and 80 g/kg diet at the expense of rapeseed oil were fed to the chickens in groups of four. At 12d of age the chickens were placed pair-wise in metabolism cages. The grower period (d 13-36) was divided into four consecutive balance periods each of 6 d. Two 24 h measurements of gas exchange in two open-air circuit respiration chambers were performed during the second and third day of each balance period. 3. During the whole experiment there was a negative effect of the inclusion of STG on average feed intake. However, this only slightly affected average daily weight gain. Feed conversion efficiency improved linearly with the inclusion level of STG. Daily gain adjusted to mean daily feed intake increased linearly with inclusion rate of STG, indicating that the weight gain was affected by both feed intake and the enhancing effect on digestibility of STG. Weight of small intestine and colon decreased with increasing inclusion of STG. 4. Utilisation of dietary protein relative to intake increased while that of retained fat tended to decrease resulting in a decreased utilisation of metabolisable energy (RE/ME) in birds receiving STG. Heat production (HE) was slightly lower in the STG groups. 5. More of the dietary fat was oxidised when more STG was added, although the total amount of fat in the diets was kept constant.

General information
State: Published
Organisations: Department of Systems Biology, Danish Institute of Agricultural Sciences
Contributors: Zheng, C., Jørgensen, H., Hey, C., Jakobsen, K.
Pages: 180-189
Publication date: 2006
Peer-reviewed: Yes

Publication information
Journal: British Poultry Science
Volume: 47
Issue number: 2
ISSN (Print): 0007-1668
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.19 SJR 0.477 SNIP 0.672
Web of Science (2017): Impact factor 1.096
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.15 SJR 0.544 SNIP 0.927
Web of Science (2016): Impact factor 0.884
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.1 SJR 0.582 SNIP 0.823
Web of Science (2015): Impact factor 0.933
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.15 SJR 0.569 SNIP 0.893
Web of Science (2014): Impact factor 0.936
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.2 SJR 0.549 SNIP 0.883
Web of Science (2013): Impact factor 0.782
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.27 SJR 0.705 SNIP 1.108
Web of Science (2012): Impact factor 1.147
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.21 SJR 0.734 SNIP 0.954
Web of Science (2011): Impact factor 1.005
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.81 SNIP 1.036
Web of Science (2010): Impact factor 1.033
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.753 SNIP 1.04
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.686 SNIP 1.142
Scopus rating (2007): SJR 0.694 SNIP 1.029
Scopus rating (2006): SJR 0.603 SNIP 0.918
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.559 SNIP 0.966
Scopus rating (2004): SJR 0.577 SNIP 1.175
Scopus rating (2003): SJR 0.621 SNIP 0.993
Scopus rating (2002): SJR 0.525 SNIP 0.774
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.588 SNIP 0.894
Scopus rating (2000): SJR 0.662 SNIP 0.691
Scopus rating (1999): SJR 0.755 SNIP 1.166
Original language: English
DOIs:
10.1080/00071660600610930
Source: orbit
Source-ID: 197734
Research output: Research - peer-review › Journal article – Annual report year: 2006