



كلية الزراعة



قسم الإنتاج الحيواني



جامعة الفيوم

### **Research paper (3)**

|                     |                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Title</b>        | <b>Wheat germ meal replaces cottonseed meal at different levels in diets of Ossimi lambs: Impact on growth performance, feed utilization and economic efficiency.</b>                                                                                                                                                                                             |
| <b>Participants</b> | Ola G.A. Hassan <sup>1</sup> , Gamal M. El-Garhy <sup>1</sup> , Ahmed E. Kholif <sup>2</sup> , <b>Gamal A. Mousa<sup>1</sup></b><br><i><sup>1</sup>Animal Production Department, Faculty of Agriculture, Fayoum University, Fayoum 63514, Egypt.</i><br><i><sup>2</sup>Dairy Science Department, National Research Centre, 33 Bohouth St. Dokki, Giza, Egypt.</i> |
| <b>Journal</b>      | <b><i>Journal of Animal Physiology and Animal Nutrition, 1–10.</i></b><br><b><i><a href="https://doi.org/10.1111/jpn.13935">https://doi.org/10.1111/jpn.13935</a></i></b>                                                                                                                                                                                         |
|                     | Co-authored with others inside and outside the specialization<br>Published in a <b>Q1 specialized international journal</b> .                                                                                                                                                                                                                                     |

### **ABSTRACT**

This experiment aimed to evaluate the replacement of cottonseed meal (CSM) with wheat germ meal (WGM) in diets of growing lambs on feed utilization and growth performance. Twenty-eight Ossimi male lambs ( $38 \pm 0.8$  kg weight), and  $180 \pm 5$  d were divided randomly into four experimental groups in a complete randomized design for 105 d. Cottonseed meal was replaced with WGM at 0 (WGM0 treatment), 50 (WGM50 treatment), 75 (WGM75 treatment) and 100% (WGM100 treatment). The chemical analysis of the total essential and non-essential amino acids showed an increase at the WGM diet compared to CSM. The replacement of CSM with WGM linearly and quadratically improved ( $P < 0.05$ ) lambs' growth performance and feed conversion. The WGM50 and WGM100 treatments lowered ( $P < 0.05$ ) feed intake and feed conversion, without affecting nutrient digestibility or diets' nutritive. Feeding WGM increased ( $P < 0.05$ ) total protein, albumin, and urea-N concentrations in blood



كلية الزراعة



قسم الإنتاج الحيواني



جامعة الفيوم

of lambs. The WGM100 treatment showed the highest relative percentage of net revenue compared to the other treatments. It is concluded that the complete replacement of CSM with WGM showed positive effects on lambs' performance and economic efficiency.

قائم بأعمال عميد الكلية

رئيس مجلس القسم

أ.د/ جمال محمود الجارحي

أ.د/ عبد العليم محمد عبد المولى