

Name of Candidate: Eman Abdef Salam Sorour **Degree:** Ph.D.
Title of Thesis: Effect of non-hormonal growth promoting supplementation on the production performance of Friesian calves.
Supervisors: Prof. Dr. Mohamed Aly Ibrahim Salem, Prof. Dr. Hanaa Abdel Hamid El-Kossy and Dr. Slem Mohamed Salem.
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This work was carried out at El-Karada Experimental Station, Kafer El-Sheikh Governorate, which belongs to the Animal Production Research Institute (APRI), Agriculture Research Center (ARC), Ministry of Agriculture and Land Reclamation (MALR) to study the effect of yeast culture supplemented (Baker's yeast and Diamond-V XP yeast) as growth promoters to rations of growing Friesian calves on performance of calves and physical and chemical characteristics of meat. Twenty five growing Friesian male calves about 5-6 months of age and average body weight was 116.3 ± 3.8 kg. The animals divided into three experimental groups according to their live body weight, with no significant differences in their body weight. The experimental treatments were schemed as following: group (1) received 80% concentrate : 20% roughage (Control), group (2) received control ration + 10 g Baker's yeast/head/day, and group (3) received control ration + 35 Diamond-v yeast/head/day.

The obtained results could be summarized as follows:-

1. The yeast culture increased ADG at 6, 8, 12, and 13 month of age.
2. Diamond-v yeast appeared improving in feed conversion at 10 – 15 month of age, while backer's yeast led to increase the feed conversion at 6 and 13 month of age.
3. The ruminal VFA were higher after two months by dietary treatments (before feeding), while the highest value of VFA was D group at 13 month of age. After feeding, observed increasing in the level of VFA during the experimental period in treatment groups,
4. The concentrate of $\text{NH}_3\text{-N}$ increased by backer's yeast supplement at 11 and 13 month of age, but it

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decreased in group at 7,13 and 15 month.

5. The yeast culture decreased the ruminal pH before and after 4 h. at 7 month of age, also at 11 and 15 month of age after feeding. There was increase in pH value before feeding at 13 month of age.
6. The lowest value of ruminal protozoa count was in backer's yeast group before feeding, while the same group had a higher value after feeding than the other groups at 15 month of age.
7. There was a significant effect of yeast culture on plasma IGF-1 concentrate at 11, 13, 16 month of age. While it decreased at 9 and 14 month of age.
8. The plasma insulin concentration was not differ till 11 month of age, then the concentration decreased in treatment groups.
9. The concentration of plasma cortisol was increased by feeding yeast culture at 11 and 14 month of age.
10. The yeast culture had a significant effect on plasma testosterone concentration. It increased the hormone concentration at 8, 10, 12, and 16 month of age.
11. The backer's yeast improved the carcass weight and the meat carcass weight, so, it caused increase in dressing percentages and boneless meat percentages as a percent from the empty body weight.
12. Diamond-v yeast appeared a positive effect on meat color, WHC and tenderness values but it decreased the pH value in longissimus dorsi muscle compared with backer's yeast and control groups.
13. There was no effect of adding the yeast culture on chemical composition of meat.

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