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## ARABIC SUMMARY

## 5- SUMMARY AND CONCLUSION

A total number of 40 newborn male buffalo calves were divided into four equal groups (10 calves each), after one week of birth to study the effects of milk supplemented probiotic on health, growth rate, some blood constitute, rumen parameters, feed intake, immune response of neonatal buffalo calves.

Buffalo calves (10 calves each) and divided into four groups as follows:

(G1) were fed milk as 10% of birth weight and kept as control ration. Calves in group 2 were fed control ration + 5 gm of *Lactobacillus acidophilus* (LAB). Calves in G3 were fed control ration + 5 gm of *Saccharomyces cerevisiae*. Calves in Group 4 were fed control milk + 5gm live yeast + 5 gm of *Lactobacillus acidophilus*.

The obtained results were as follow:

- 1- Average total live body weight gain in calves fed control milk without additives (control) was lower as compared to calves treated with *Lactobacillus acidophilus* + *Saccharomyces cerevisiae* during the whole experimental period, while milk added with lactic acid bacteria + *Saccharomyces cerevisiae* was the highest daily gain than the others.

- 2- An insignificantly improve on daily intake of calves fed lactic acid or *Saccharomyces cerevisiae* as compared to control group.
- 3- Average daily live body weight gain between calves fed 5gm yeast + 5gm *Lactobacillus acidophilus*, was significantly higher as compared to the control group (G1). The highest value of live body weight was recorded with the calves in G4, while the control calves (G1) and lactic acid bacteria groups (G2) were the lower, and the *Saccharomyces cerevisiae* alone (G3) was intermediate.
- 4- The highest value of body weight gain of calves was recorded for calves fed lactic acid bacteria + yeast (G4) or yeast alone (G3).
- 5- Ruminal pH after 3hour and 6hour post suckling of calves fed lactic acid bacteria + *Saccharomyces cerevisiae* (G4), lactic acid bacteria (G2) and *Saccharomyces cerevisiae* (G3)alone had lower significantly ( $P<0.05$ ) ruminal pH values as compared to the control group (G1).
- 6- Treated calves fed probiotics showed significant higher ( $P<0.05$ ) ruminal ammonia nitrogen than the control calves especially at 3hr. and 6hr.
- 7- The total volatile fatty acids (TVFAs) concentration increased significantly ( $P<0.05$ ) after suckling and

reached the maximum value at 3hr. for all groups fed *Lactobacillus acidophilus* + yeast either control or treated calves. However, addition of *Saccharomyces cerevisiae* + lactic acid bacteria addition to the milk increased significantly ( $P<0.05$ ) TVFAs concentration than other groups. Total volatile fatty acids concentration decreased significantly ( $P<0.05$ ) with the calves in control (G1) fed milk at 3hr., while calves fed yeast and lactic acid bacteria was the highest value ( $P<0.05$ ) total volatile fatty acids concentration at different time of after suckling.

- 8- Plasma total protein (TP) levels increased significantly ( $P<0.05$ ) with the advancement of the calves age. In addition, all calves treated with probiotics had a higher value of TP levels than the control calves.
- 9- Plasma albumin levels showed a significant increase by ( $P<0.05$ ) in all treated groups as compared to the control group and insignificantly higher with the advancement of age in the calves. .
- 10- Plasma globulin levels showed a significant increase ( $P<0.05$ ) especially with the advancement of age. In addition, the lowest ( $P<0.05$ ) value of plasma globulin levels was recorded in G1. While, the highest ( $P<0.05$ ) value was recorded in G4.

- 11- The lowest ( $P < 0.05$ ) value of Hemoglobin level was recorded in calves with G3 and G1, while the highest ( $P < 0.05$ ) value of Hemoglobin was recorded in calves with G2 and G4. The highest ( $P < 0.05$ ) value of Hematocrit level were recorded in calves with G2 and G4. While, the lowest ( $P < 0.05$ ) Hematocrit value was recorded in calves with G1.
- 12- Buffalo calves fed milk supplemented with probiotics had a higher ( $P < 0.05$ ) value of Hematocrit than control ones. Also, calves fed milk supplemented with lactic acid bacteria had a higher Hematocrit value than calves fed milk in control or supplemented with yeast alone.
- 13- Plasma aspartate aminotransferase (AST) and alanine aminotransferase (ALT) enzymes actively were increased significantly ( $P < 0.05$ ) with the advancement of age in the growing buffalo calves. Also, calves fed milk with *Lactobacillus acidophilus* + yeast had a higher level ( $P < 0.05$ ) of AST activity, while, calves in G2 supplemented with (LAB) alone had a highest level of plasma ALT enzyme.
- 14- Plasma triiodothyronine (T<sub>3</sub>) and thyroxine (T<sub>4</sub>) concentrations increased significantly ( $P < 0.05$ ) with the advancement of age in the growing calves. In addition, calves fed milk supplemented with probiotics had higher ( $P < 0.05$ ) levels of plasma T<sub>3</sub> and T<sub>4</sub> than the control group.
- 15- Immunoglobulin levels increased significantly ( $P < 0.05$ ) with the advancement of age in the growing calves. In addition,

immunoglobulin levels increased significantly ( $P < 0.05$ ) in calves treated with probiotics, especially calves fed milk supplemented with lactic acid bacteria + yeast.

In conclusion, the present results revealed an improve of growth performance microbial activity in the digestive tract, feed efficiency, metabolism activity, immunity response and health of buffalo calves suckled milk added with probiotics (lactic acid bacteria alone at a level of 5gm *Saccharomyces cerevisiae* alone.

Therefore, it can be recommended to the milk of suckled buffalo added of 5gm lactic acid bacteria or 5gm of *Saccharomyces cerevisiae* for managerial programs to enhance of productive performance of suckled buffalo calves under Egyptian environmental condition.