



Effect of feeding young age suckling calves with 5-aminolevulinic acid (5-ALA) on growth and immunity

Collaborative study with Prof. Toshihiko Takahashi (Rakuno Gakuen University)
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Materials

173 Holstein calves that were introduced at 3 to 58 days of age (47 for the control group, 23 for the early phase feeding group, and 103 for the late phase feeding group)

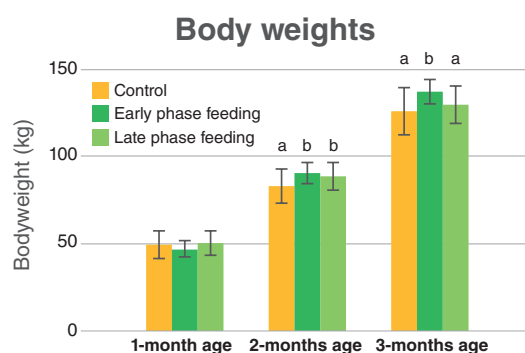
Methods

- **Study groups** Control group : 5-ALA unfed
Early phase feeding group: 35mg/day of 5-ALA was given at the same time with a milk substitute to the calves that were introduced at 10-19 days of age
Late phase feeding group: 35mg/day of 5-ALA was given at the same time with a milk substitute to the calves that were introduced at 20-29 days of age.

Only the individuals with the 5-ALA feeding duration of 10 days or longer were used for the analysis

- **Measurement items** Body weights, body heights, thymus scores, and the number of treatment days per animal during the study

Results



A significant difference was observed between the groups. ab: P<0.05



A significant difference was observed among the groups. abc: P<0.05

Disease incidence (Average treatment days per animal ± standard deviation)

	Control	Early phase feeding	Late phase feeding
Number of treatment days	7.3±6.7	3.8±4.2	6.6±7.0
Of which for diarrhea	1.9±2.4	1.6±2.7	2.1±2.9
Of which for respiratory diseases	5.3±6.1	2.1±2.6	4.4±5.5

As for the thymus score, high values were observed for each group.

Also, average feeding days of 5-ALA were 61 days for the early phase feeding group and 70 days for the late phase feeding group, which did not show a significant difference.

5-ALA feeding to calves is shown to be effective for growth promotion and tended to be more effective when fed it earlier. Also, it is suggested that 5-ALA feeding from the early stage may contribute to the recovery from diseases.

