

GIRAFFE MILK REPLACER 1,2

TYPICAL ANALYSIS (Powder)

Protein	32%
Fat	44%
Carbohydrate	15%
Ash	5%
Moisture	4%
Energy (ME)	25 MJ/kg

INGREDIENTS: Whole milk solids, casein, whey protein, vegetable oils, omega-3 and omega-6 fatty acids, vitamins and minerals.

PACK SIZE: 20kg Net.

DIRECTIONS FOR USE: To make 1 litre of milk mix 180g of powder with 900ml of preboiled warm water. Add about half of the water first, mix to a paste then make up to 1 litre with remaining water and mix thoroughly. An electric whisk can be used for mixing.

Feed Impact Colostrum Supplement to new-borns that did not receive sufficient maternal colostrum.

TYPICAL COMPOSITION PER LITRE OF PREPARED MILK

Protein	61g	Vitamin E	14mg	Folic Acid	0.90mg	Sodium	400mg
Fat	80g	Vitamin K	1.0mg	Vitamin B ₁₂	17µg	Magnesium	80mg
-Omega 3	3.9g	Vitamin C	23mg	Biotin	80µg	Zinc	4.9mg
-Omega 6	8.8g	Thiamine	6.8mg	Choline	100mg	Iron	5.2mg
Carbohydrate	27g	Riboflavin	1.8mg	Inositol	80mg	Manganese	2.9mg
Energy (ME)	4.4MJ	Niacin	27mg	Calcium	1.9g	Copper	0.72mg
Vitamin A	450µg	Pantothenic Acid	10mg	Phosphorus	1.4g	Iodine	100µg
Vitamin D₃	4.4μg	Pyridoxine	2.3mg	Potassium	1000mg	Selenium	25μg

FEED VOLUME: Estimates of feed volume are based on the animal being maintained in a thermoneutral environment with milk as the only source of food. Milk volume in ml per day for an animal of body weight W kg is given by the basal metabolic rate for Artiodactyla⁴, with an energetic multiplier of 2.1:

2.1 x 305W^{0.802}

Body Weight	Feed Volume	Body Weight	Feed Volume	Body Weight	Feed Volume
(kg)	(mL/day)	(kg)	(mL/day)	(kg)	(mL/day)
40	2800	80	4800	120	6700
45	3100	85	5100	125	6900
50	3300	90	5300	130	7200
55	3600	95	5600	140	7600
60	3800	100	5800	150	8000
65	4100	105	6000	160	8500
70	4400	110	6300	170	8900
75	4600	115	6500	180	9300

GROWTH & DEVELOPMENT: Typical birth weight is 60–70kg. Average daily weight gain is typically about 1.0-1.5kg per day³.

REFERENCES

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- 2. Osthoff, G., Hugo, A., Madende, M., Deacon, F., & Nel, P. J. (2017). Milk composition of free-ranging red hartebeest, giraffe, Southern reedbuck and warthog and a phylogenetic comparison of the milk of African Artiodactyla. *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology*, 204, 93-103.
- 3. Livingston S., Sullivan K., Kerr K. & Valdez, E. (2015). Birth weights and growth rates of giraffe and okapi at Disney's Animal Kingdom. Proceedings of the Eleventh Conference on Zoo and Wildlife Nutrition, AZA Nutrition Advisory Group, Portland, OR.
- 4. Hayssen V. & R.C. Lacey (1985). Basal Metabolic Rates in Mammals. Comp. Biochem. Physiol. Vol 81A, No.4:741-754.