

## PROVEN EFFECTIVENESS OF CALCIUM BOLUS

manufactured by JFARM, on the basis of tests conducted in the Institute of Clinical and Laboratory Diagnostics (Department of Pathology and Veterinary Diagnostics) at SGGW in Warsaw in 2014.

**RESEARCH'S OBJECTIVE WAS TO DETERMINE: ABSORPTION TIME AND CONCENTRATION OF TOTAL CA, IONIZED CA AND MG I P, CONCENTRATION OF VITAMIN IN THE COW BLOOD, CLINICAL CONDITION OF THE COWS.**

Quick release and assimilation of calcium ions were found – an increase in the level of calcium and ionized calcium in the blood – as early as 5 h after the application of 2 boluses, each weighing 100 g. After repeating the application of third bolus, the level of ionized calcium increased by almost 30% compared to the initial content.

Concentration of vitamin D3 in the body after the completion of preventive treatment with the use of calcium boluses manufactured by JFARM increased by 24,28 %. Full results of the research are presented in the table below.

**TAB.1 AVERAGE CONCENTRATION OF TOTAL CALCIUM, IONIZED CALCIUM AND VITAMIN D3 IN THE BLOOD OF COWS (N=20), BEFORE AND AFTER THE APPLICATION OF CALCIUM BOLUSES WITH A WEIGHT OF 100g AND ION CONTENT Ca<sup>++</sup> 26g.**

Blood collection	Total calcium (mg/dl)			Ionized calcium (mg/dl)			Vitamin D3 (1,25-0H-D3) (ug/L)		
	X	% of changes	SD	X	% of changes	SD	X	% of changes	SD
A	9,95	-	0,78	3,5	-	0,4	39,79	-	2,27
B	10,41	4,6	0,95	3,6	2,86	0,4	-	-	-
C	*10,51	5,6	0,83	*4,0	14,29	0,4	*45,11	13,37	2,01
D	*11,49	15,48	0,95	*4,0	14,29	0,6	-	-	-
E	**11,72	17,79	0,82	**3,9	11,43	0,4	-	-	-
F	**11,52	15,78	1,02	**4,5	28,57	0,2	**47,04	18,22	2,32
G	**10,25	3	0,74	**4,4	25,7	0,2	**49,45	24,28	3,76

\* Statistically significant difference between the test results from blood collection A and the others (B-G) (P<0.05)  
 \*\* Statistically significant difference between the test results from blood collection A and the others (B-G) (P<0.01)  
 A - blood collection before the application of first 2 boluses (day no. 1; 8:00)  
 B - blood collection after 5 hours from the application of first 2 boluses (day no. 1; 13:00)  
 C - blood collection after 10 hours from the application of first 2 boluses (day no. 1; 18:00)  
 D - blood collection after 24 hours from the application of first 2 boluses (before the application of second bolus) (day no. 2; 8:00)  
 E - blood collection after 5 hours from the application of third bolus (day no. 2; 18:00)  
 F - blood collection after 24 hours from the application of third bolus (day no. 2; 18:00)  
 G - blood collection after 24 hours from the application of third bolus (day no. 3; 8:00)  
 n - number of cows  
 x - arithmetic mean  
 SD - standards deviation

**TAB.2 CHARACTERISTICS OF THE SELECTED INDICATORS OF COW REPRODUCTION AND MILK QUALITY (N=20)**

Lp.	Średnia wartości wskaźnika	Przed podaniem bolusa	Po podaniu bolusa	% zmian
1.	Długość okresu między wycieleniowego (dni)	402	388	-3,50
2.	Liczba dni wystąpienia rui	35	29	-17,00
3.	% krów, u których ruja wystąpiła do 60 dnia po porodzie	88	98	+11,4
4.	Skuteczność 1 inseminacji, % krów	77	82	+6,5
5.	% krów, które zaszło w ciążę w ciągu 3 zbiegów	91	95	+4,4
6.	% krów brakowanych w wyniku zaburzeń w rozrodzie	9	8	-11,00
7.	Średnia liczba porcji nasienia na skuteczne pokrycie	2,3	2,0	-13,00
8.	Kwasowość mleka	6,2°SH	6,2°SH	+4,84
9.	Średnia liczba komórek somatycznych w mleku (100 tys.)	1,2	1,0	-16,7

Assessment of the selected indicators of cow reproduction and milk quality is presented in the alongside table, on the basis of which we can draw the following conclusions:

- There has been a significant improvement in reproduction indicators and milk quality in cows that received boluses,
- Length of inter-calving period was shortened from 402 to 388 days,
- After the application of Calcium Bolus, the next estrous period occurred faster,
- Effectiveness of 1 insemination and % of cows, which became pregnant within 3 procedures increased by approx. 5%,
- Smaller number of semen portions was used for the insemination,
- Average number of somatic cells in the milk decreased by 16%.

# BOLUS

POLISH PRODUCT

## CALCIUM PLUS

innovative solution  
diverse levels of disintegration and assimilation

✓ Ca<sup>++</sup> 45 g  
✓ wit. D3 40 000 j.m.

Quick disintegration and assimilation

1 bolus with a weight of 165 g comprises of two parts with different degree of release and assimilation of calcium ions:

Slow disintegration and assimilation

calcium formate,  
calcium acetate  
28 g Ca<sup>++</sup>

calcium sulfate  
17 g Ca<sup>++</sup>

PREVENTS **HYPOCALCEMIA**  
SUPPLEMENTS CALCIUM DEFICIENCIES

Manufactured in accordance with GMP+ system and ISO 22000-2005 standard



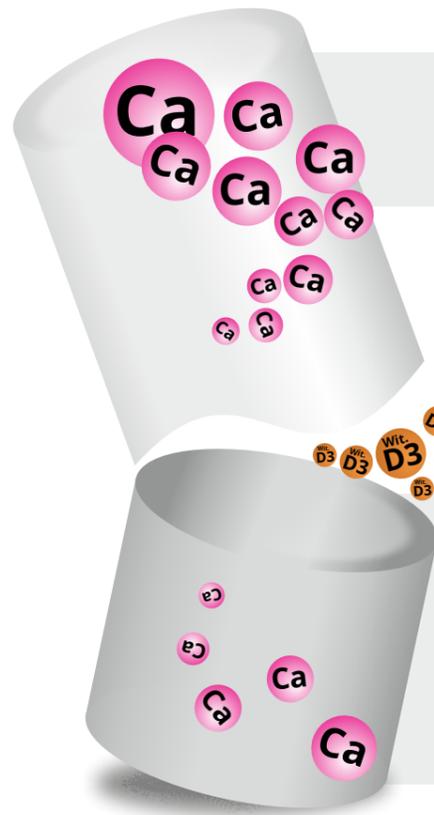
Manufactured by JFARM, ul. Magazynowa 1A  
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# BOLUS

POLISH PRODUCT

## CALCIUM PLUS



### CALCIUM FORMATE AND ACETATE

quicker disintegration and assimilation of Ca ions

### VITAMIN D3

participates in the active transportation of Ca ions through intestinal mucosa

### CALCIUM SULFATE

extended time of disintegration and assimilation; it's anionic in nature, which causes the lowering of rumen's pH and facilitates the absorption of calcium ions.

## FULL ONE-TIME DOSE OF 45 g Ca<sup>++</sup> ions for application:

- ➔ preventively on the day of birth,
- ➔ after intravenous injection of calcium in order to extend Ca<sup>++</sup> supplementation,
- ➔ the application can be repeated every 8 hours.

### Mineral complementary compound feed for cattle.

**Composition:** Calcium formate, calcium acetate, calcium sulfate, vitamin D3- 40 000 IU

**Recommended use:** In high-yield cows during perinatal period or lactation peak.

**Application:** Cows – on the day of birth or immediately after birth, apply 1 bolus with the use of applicator into the mouth. The application of 1 bolus can be repeated after 12 hours.

**Note:** Do not apply boluses to lying cows or with the symptoms of postpartum paralysis.

**Packaging:** 4 boluses in a tube, each weighing ± 175 g.

**Shelf live:** 20 months from the date of manufacture.

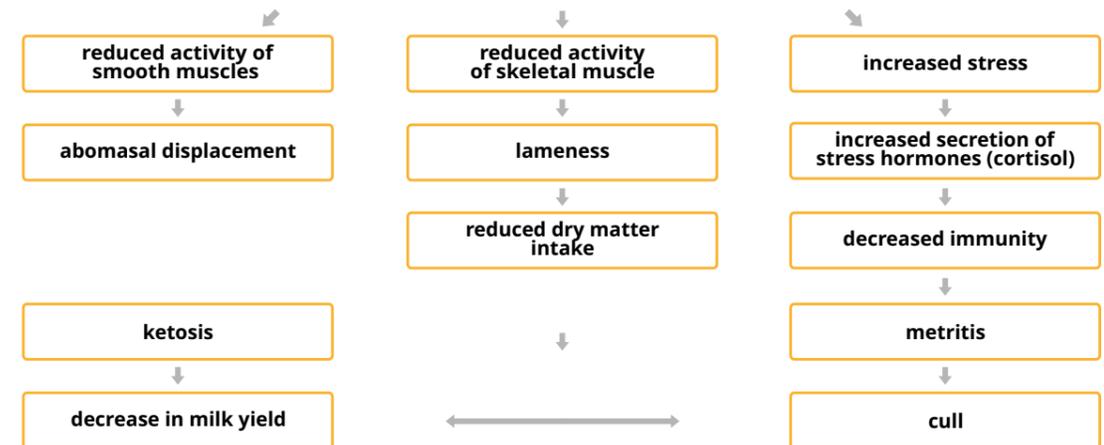
**Storage:** Store in dry place, in closed packaging.



WYSOKA JAKOŚĆ W  
HODOWLI ZWIERZĄT



## CONSEQUENCES OF HYPOCALCEMIA



In cows suffering from postpartum paralysis, the risk of retention of fetal membranes is several times higher. Due to impaired Ca balance, a delayed uterine involution occurs, which is often accompanied by endometritis and in consequence it affects the prolongation of inter-calving period. Moreover, decreased Ca content in cow's blood serum causes a disturbance in motility of forestomachs, increasing the likelihood of abomasal displacement. This disease is always accompanied by decrease in dry matter intake, which increases the risk of ketosis. In cows with subclinical hypocalcemia or cows suffering from milk fever, due to impaired contractility of the sphincter muscles of the teats, very often mastitis occurs.

## AGE, LACTATION AND MILK YIELD are the predictive factors of postpartum paralysis.



**ELIMINATE THE RISK OF POSTPARTUM PARALYSIS BY USING BOLUS CALCIUM PLUS**