

Safrax[®]



**Comprehensive Analysis:
Safrax[®] Chlorine Dioxide
Impact on Broiler Chickens
ISA University Study in
the Dominican Republic**



In late 2015, ISA University conducted a study in Santiago, Dominican Republic, to evaluate the effects of Safrax® chlorine dioxide, chlorine, and antibiotics on the productivity, microbiological count, and profitability of broiler chicken production.

Although Safrax® chlorine dioxide had shown promising results in numerous studies, there was a absence of previous methodological research in the Dominican Republic to confirm its superiority over traditional chlorine bleach concerning microbiological control, performance, and profitability in broiler chicken production.





The health and performance of poultry species, particularly broiler chickens, are significantly affected by the **quality of the water they consume.**

Both ensuring an adequate intake of water and providing access to high-quality water are crucial factors in maintaining their overall health and performance.

This study comprehensively analyzed various parameters:

- **Live body weight**
- **Daily weight gain**
- **Feed consumption**
- **Feed efficiency**
- **Carcass weight**
- **Carcass yield**
- **Microbiological count**
- **Cost-benefit ratio**

At the age of 7 days, the supplementation of Safrax® chlorine dioxide resulted in a **significant increase in the average weight** of the chickens compared to the control group.

In the groups where chickens consumed water treated with Safrax® chlorine dioxide, their weights increased to 135.66 grams and 135.08 grams, respectively. In contrast, the chickens in the control group weighed 127.66 grams.

Furthermore, the utilization of Safrax® chlorine dioxide is observed to **improve feed efficiency in broiler chickens during their first week of life**. Notably, when chlorine dioxide is applied, the chickens achieved a **feed efficiency exceeding 81%**.

Based on the research results and conclusions, it is recommended to use Safrax® chlorine dioxide as an alternative to chlorine bleach and antibiotics for disinfecting and purifying the water consumed by chickens. This practice can contribute to improved feed efficiency, among other benefits.

Meat Production

- Improved growth potential
- Very low cost per bird
- Improvement in uniformity (reduction in the percentage of out of size range)
- Decreased epidemic risk (preventive effect)
- Safe drinking water
- Long-lasting action in water for several days without forming deposits

Eggs and Chicks

- Decrease in mortality
- Improved shell quality
- Improved water consumption
- Clean pipelines allow the addition of water-soluble additives
- Reduction in health risks
- Water is always potable, regardless of original source and quality
- Disinfection of eggs and incubators with a non-corrosive product that is non-hazardous for the animals

Typical Results

- Comparison Between Peroxide and Chlorine Dioxide (ISA University Study in Santiago).

Base Example 45,000 Chickens (for meat)	Peroxide	ClO ₂
Mortality	3.92%	2.54%
Out of Size Range	0.85%	0.24%
Daily Growth (in Grams)	59.46 gr	61.33 gr



Pathogens Eliminated

List of Pathogens Eliminated with Safrax® Chlorine Dioxide:

- Adenovirus
- Avian paramyxovirus
- Campylobacter jejuni
- Coxsackievirus
- Culex quinquefasciatus (a type of mosquito)
- Echovirus
- Feline parvovirus
- Encephalomyocarditis virus (EMC)
- Fonsecaea pedrosoi
- Fusarium
- Avian Influenza
- Iridovirus

Additional Pathogens:

- Infectious bursal disease virus (IBDV)
- Marek's disease virus
- Newcastle disease virus (NDV)
- Salmonella enterica
- Escherichia coli (E. coli)
- Clostridium perfringens
- Staphylococcus aureus
- Aspergillus fumigatus (fungus)
- Escherichia coli O157:H7
- Mycoplasma gallisepticum
- Mycoplasma synoviae
- Infectious bronchitis virus (IBV)
- Histomonas meleagridis

This comprehensive list includes viruses, bacteria, fungi, and parasites that can impact poultry health and production. Implementing effective biosecurity measures with Safrax® chlorine dioxide is essential for preventing and controlling these pathogens on poultry farms.



Protocols

- Dosage Rule: **1 PPM = 1 Safrax® Tablet (1 Gram) in 25 Gallons of Water.**

Typical Use	PPM	1 gr Tablets	20 gr Tablets	Contact Time
Water Disinfection to Obtaining Potable Water	0.5	One 1 gram tablet per 200 liters of water	One 20 gram tablet per 4000 liters of water	N/A
Disinfection of the Floor and Walls in Contact With the Animals	8	1 gram per 12.5 liters of water	10 grams per 250 liters of water	20 minutes
Disinfection of Production Area Before Introduction of New Chicks	20	1 gram per 5 liters of water	20 grams per 50 liters of water	Until dry
Decontamination of Poultry Facilities in Case of an Epidemic	100	1 gram per 0.2 liters of water	20 grams per 4 liters of water	Until dry, at least 3 times a day
Decontamination of Permeable Floors	500	1 gram per 0.2 liters of water	20 grams per 4 liters of water	Until dry, at least 3 times a day
Treatment of Contaminated Carcasses	500	1 gram per 0.2 liters of water	20 grams per 4 liters of water	Total water intake
Clothing, Boots, Equipment in Contact	200	1 gram per 0.5 liters of water	20 grams per 10 liters of water	Entry and exit from the infected area

Application Examples

Location	Purpose	PPM	Application	Equipment
Incubator	Clean or dirty zones, Intermediate zone	8	Vaporization after washing. The solution can also be used as a rinse	Vaporizer and cold water
Eggs	Disinfection of eggs in an egg washer	8	Treated wash water; Check concentration every 4 hours	Photometer (DPD + glycine)
Leg bands for chicks	Disinfection before use	8	Vaporization	Vaporizer and cold water
Poultry house	Disinfection before introduction of chicks	8	Vaporization after washing. The solution can also be used as a rinse	Vaporizer and cold water
Drinking Water	Cistern disinfection or continuous pumping	0.5	Tanker: Injection when filling Pump: Continuous injection	Injector (identical to chlorination injectors)
Rubber Nipples, Drinkers and Troughs	Continuous disinfection of rubber supply tubes. Daily water treatment	20	Prepare a concentrated solution (one 20 gram tablet per 1 liter), dilute in 50 liters of water and pass through supply tubes	PVC bucket, minimum 1 liter capacity

Bird Flu

- Emergency, Prevention and Disinfection Measures.

Objective	Concentration (PPM)	Method	Notes
Air Disinfection (Prevention)	500	Fumigate	Aeration, the premises must always maintain air circulation
Air Disinfection (Decontamination)	1000	Fumigate	Aeration, the premises must always maintain air circulation
Floors	100-150	Spray	More than 3 times per day
Contaminated Floors	500	Spray	1 hour after cleaning the floor
Spit Up, Secretions, Expectorations	500	Spray	Minimum once per hour
Surfaces	200-300	Wipe	Wipe twice a day, soak cloths and mops
Personal Items	200	Saturate	Personal items must be saturated by hand; more than 30 minutes contact time
Clothing	50	Soak	Soak for 1 hour and wash afterwards
Vehicles	200	Spray or wet thoroughly	Minimum contact time of 30 minutes
Fruits and Vegetables	20	Soak	Roast thoroughly after disinfection
Hands and Skin	50	Wash	From 1 to 3 minutes
Waste Treatment	200-300	Immerse in water	Stir for 30 minutes
Animals Corpses	500	Spray or immerse	Remains are to be washed in water and, after disinfection, incinerated



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