Weak Acid Hypochlorous Solution used for Hygienic Control in the Laboratory Animals Facilities and the Poultry Farms

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The Drinking Study of Weak Acid Hypochlorous Solution in Chicken

Material

Chicken (Chunky breeding hen)

8200 hens (Tested) 8200 hens (Control)

WAHS (50ppm) Tap water (Control)

Drinkers

Methods

Drinking period

From hatching to culled (1week ～ 60 weeks)

Histopathology

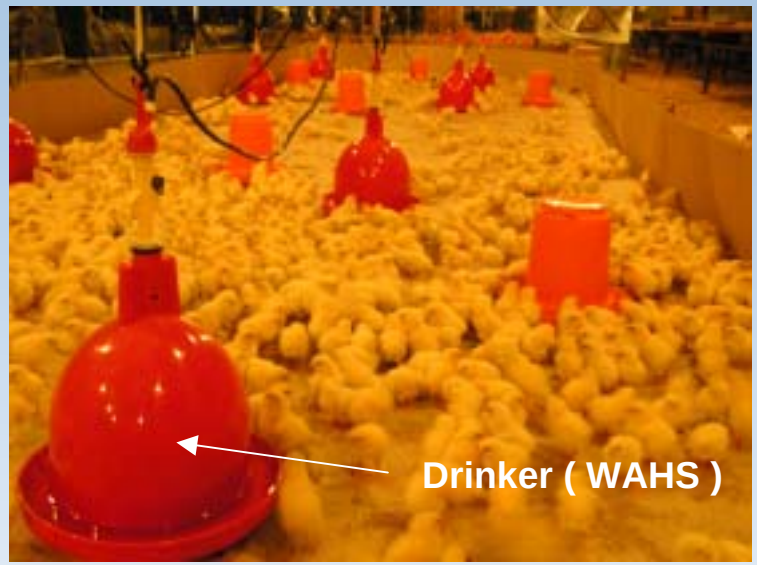

Table The body weight, rate of organ weight and Histopathology of chicken after drinking Weak Acid Hypochlorous Solution

Means±S.E.

	Weeks (w)	Body weight	Liver		Lung		Ovary		Heart		Alimentary canal	
		Weight (g)	Rates of weight (%)	Findings	Rates of weight (%)	Findings	Rates of weight (%)	Findings	Rates of weight (%)	Findings	Rates of weight (%)	Findings
WAHS (50ppm)	1	148.5±4.3	3.75±0.3		0.61±0.07		0.03±0.01		0.67±0.04		8.47±0.5	
	7	829.3±15.4	2.78±0.3	－※	0.43±0.05	－	0.02±0.002	－	0.35±0.05	－	6.63±0.5	－
	20	1916.7±13.1	1.89±0.04	－	0.44±0.03		0.03±0.002		0.30±0.01		4.37±0.2	
Control (Tap water)	1	139.1±15.8	3.44±0.2		0.61±0.07		0.02±0.003		0.65±0.06		8.68±1.0	
	7	832.3±34.4	2.35±0.2	－	0.44±0.04	－	0.02±0.002	－	0.32±0.03	－	8.05±1.4	－
	20	1914.3±14.6	1.74±0.1	－	0.45±0.02		0.02±0.001		0.28±0.01		4.56±0.3	

※ －： no lesions

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The inhalation study of Weak Acid Hypochlorous Solution in rat

Materials and methods

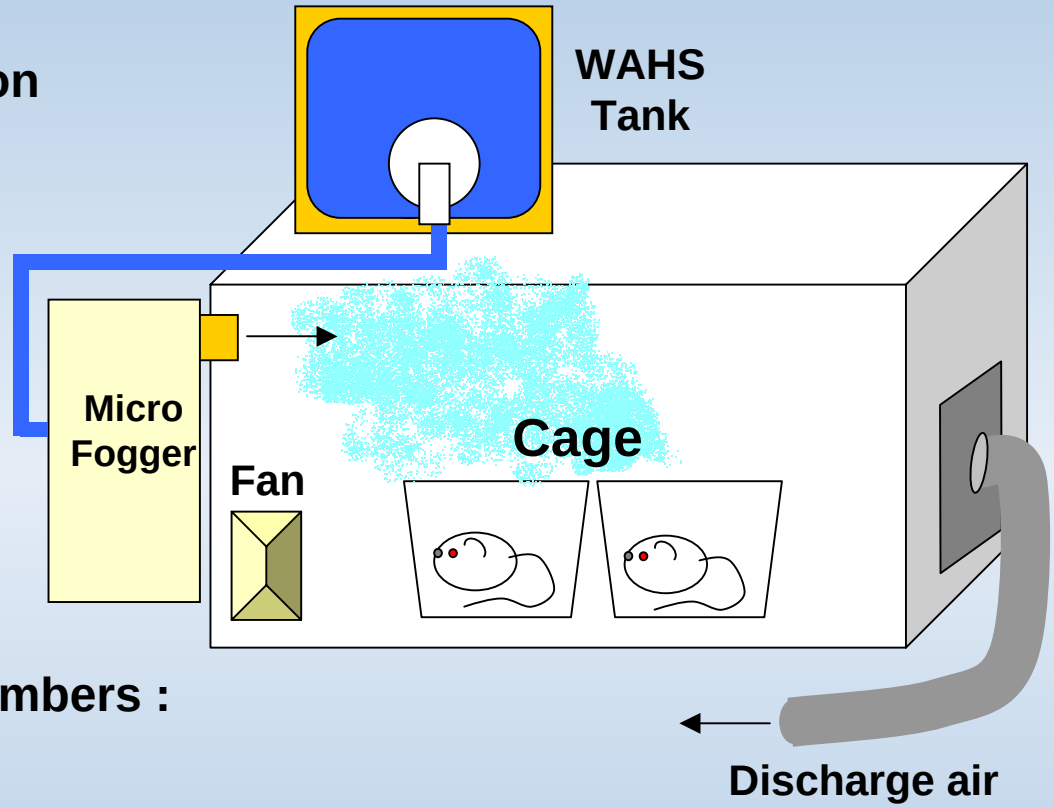
Materials

Weak Acid Hypochlorous Solution (WAHS)

Concentration in air

13・27・53mg/h・m³

Tap water for Control



Animals

Wistar Rats (SPF) , 7-week- old

8 rats in each group

Methods

Concentration of WAHS in 4 chambers :

0, 13, 27, 53 mg/h・m³

Period of inhalation : 3 months

Body weight
Hematology
Clinical biochemistry

Laboratory Animal and Environment 11(1)2003

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Results

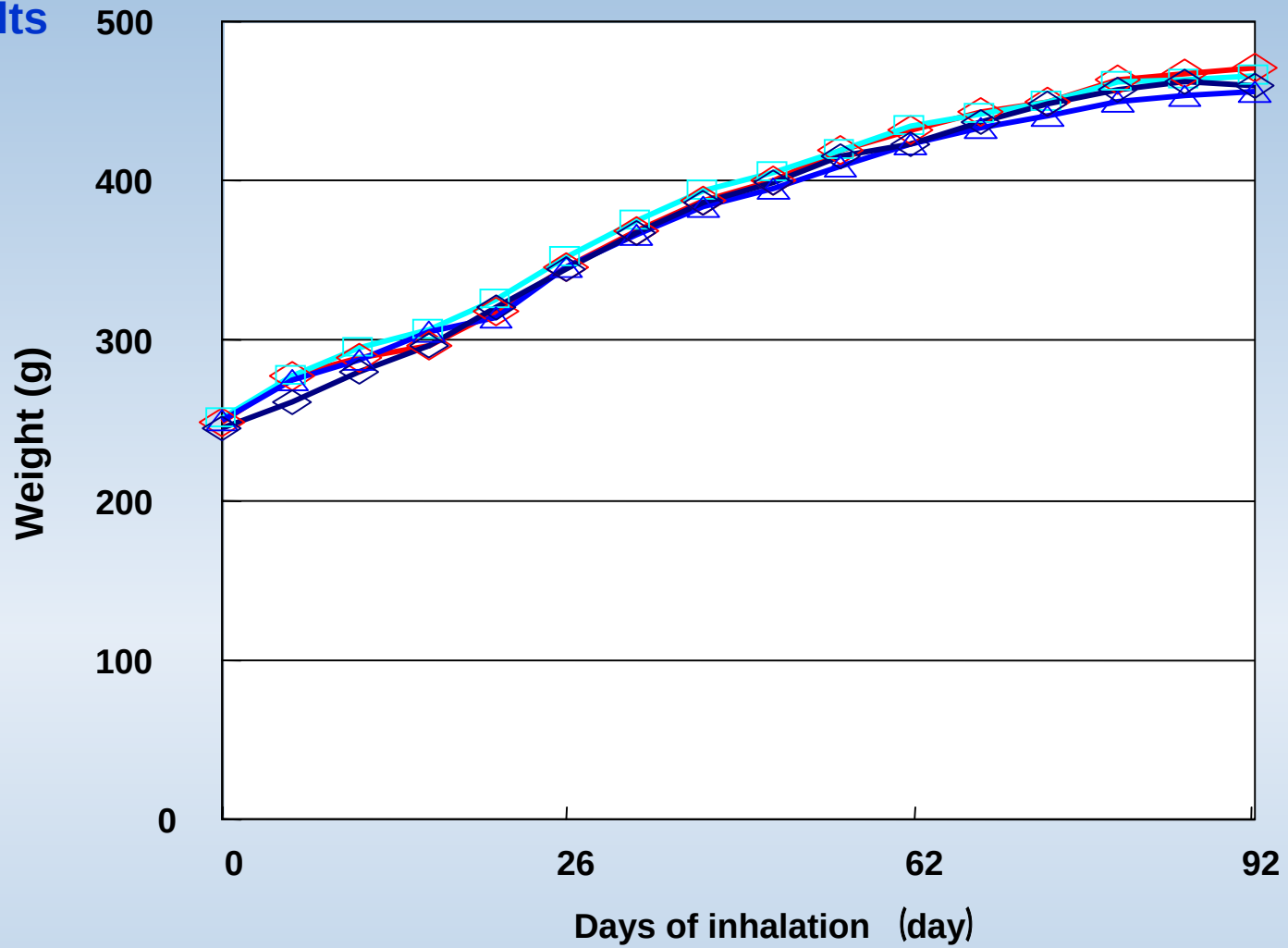

Fig The growth of Wistar rats after exposed 3 months in different concentrations of Weak Acid Hypochlorous Solution

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Hematology of Wistar rats after 3 months exposed in different concentrations of Weak Acid Hypochlorous Solution

	WBC	RBC	Hb	Ht	Blood platelet
Control	6600	771.4	13.5	40.2	81.5
13mg/h·m^3	7700	838.6	14.6	42.8	84.4
27mg/h·m^3	5260	775.2	13.5	40.1	75.1
53mg/h·m^3	7600	796.6	13.9	40.7	78.9

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Clinical biochemistry of Wistar rats after 3 months exposed in different concentrations of Weak Acid Hypochlorous Solution

	T.Bilirubin	D. Bilirubin	Id.Bilirubin	GOT	GPT	Ch-E	LDH	ALP	LAP	γ-GTP	T.Protein	Albumin	A/G
Control	0.2	0.02	0.18	161.2	47.2	3.0	692.2	807.2	66.4	2.6	5.8	3.0	1.1
13 mg/h·m^3	0.2	0.02	0.18	105.6	42.0	3.0	502.4	731.6	66.0	2.2	5.7	3.0	1.1
27 mg/h·m^3	0.2	0.02	0.18	129.4	43.0	3.6	720.8	778.6	71.2	2.2	5.7	3.0	1.1
53 mg/h·m^3	0.2	0.02	0.18	120.8	41.0	3.4	609.1	771.1	65.2	3.0	5.7	3.0	1.1

	T. Chores.	N.Fat	HDL-C	LDL-C	BUN	U. Acid	Creatinine	S.Na	S.Cl	S. K	S.Ca
Control	68.8	52.6	53.2	5.0	18.8	2.32	0.5	143.2	105.8	4.0	10.3
13mg/h·m^3	67.6	53.6	51.8	4.8	18.6	2.18	0.5	142.2	107.4	4.5	10.2
27mg/h·m^3	76.0	38.0	56.8	11.2※	17.1※	1.52※	0.5	143.4	106.8	4.1	10.2
53mg/h·m^3	61.8	38.0	46.2	7.6	17.8	1.62	0.5	142.6	108.8	4.0	10.0

(※：$p<0.05$)

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