

Effect of Ozone on Chicken Meat (Antibiotics Removal)

Test Parameter	Unit	Results	
-	-	Foam	Chicken meat
Chlortetracycline	mg/kg	Present	Absent
Oxy tetracycline	mg/kg	Present	Absent
Chloramphenicol	mg/kg	Absent	Absent

Remarks

The above chicken meat sample was bubbling in Multi-Functional Ozone Food Sterilizer for 30 minutes in 3 liters of tap water. The foam generated from the bubbling and the meat after bubbling was used for testing.

On analysis, the result showed 2 of the above antibiotics was present on the foam sample while the chicken meat after bubbling was totally absent. As such, we are of opinion that the above antibiotics in the chicken meat had been extracted out by the top-Ozone Multi-Functional Ozone Food Sterilizer.

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Effect of Ozone on Microbiological (Comparison)

Test Parameter	Unit	Deionised water, without ozone treatment			Deionised water *with ozone treatment		
		0 min	30 min	Growth rate	0 min	30 min	Growth rate
Total Bacterial Count @ 37° C for 48 hours	cfu/ml	1.0x10 ⁷	2.4x10 ⁷	+140%	1.1x10 ⁷	2.8x10 ⁶	-75%
E.coli per g. (MPN)	cfu/ml	6.2x10 ⁶	8.4x10 ⁶	+35%	5.4x10 ⁶	1.6x10 ⁶	-70%
Coliform per g. (MPN)	cfu/ml	8.2x10 ⁶	1.1x10 ⁷	+34%	5.6x10 ⁶	4.0x10 ⁶	-28%
Salmonella in 25 ml	-	8.0x10 ⁴	1.1x10 ⁵	+38%	8.5x10 ⁴	7.0x10 ⁴	-18%

The above microbiological test were carried out on the 0 minute and 30 minutes sample after the addition of cultured bacteria to determine the growth rate in normal and ozone treated deionised water. The above results showed a reduction in microbiological testing on the deionised water with ozone treatment. *The ozone treatment was carried out in 3 litres of water for 30 minutes using top-ozone Multi-Functional Ozone Food Sterilizer (FS-505).

Effect of Ozone on Fish (Formaldehyde Removal)

One sample of "Kampung Fish" was sprayed with Formaldehyde and left overnight. The sample was then divided into two portions and treated as follows for the analysis of formaldehyde residue :-

- A) Unwashed sample
- B) Soaked in tap water with ozone treatment for 30 minutes.

On analysis of the Formaldehyde removal efficiency test, the following results were obtained:-

A)	Unwashed sample	...	1000 mg/kg
B)	Ozone treated sample	...	0.53 mg/kg

The results showed that the Formaldehyde residue was reduced to low level after ozone treatment.
*The ozone treatment was carried out in 3 litres of tap water using top-Ozone Multi-Functional Ozone Food Sterilizer (FS-505) for 30 minutes.

Effect of Ozone on Vegetables (Pesticide Removal)

One sample of leafy vegetable "choy sum" was sprayed with Lindane and Profenofos, two types of commercially used pesticide. The "choy sum" was then left overnight and divided into two portions and treated as follows for the analysis of pesticide residue :-

- A) Unwashed
- B) Soaked in tap water with ozone treatment for 30 minutes.

On analysis of the pesticide removal efficiency test by High Performance Liquid Chromatography (HPLC) and Gas Chromatography (GC), the following results were obtained: -

			Lindane, mg/kg	Profenofos, mg/kg
A)	Unwashed sample	...	50	5000
B)	Ozone treated sample	...	1.02	124

The results showed that both pesticide residues were reduced to low level after ozone treatment.*The ozone treatment was carried out in 3 litres of tap water.

Effects of Ozone on Food: Meat and Vegetables - This is an extremely fascinating look at the effect of ozone on foods. The laboratory testing done by these I.O.A. members in Indonesia demonstrates that antibiotics and pesticides are removed by ozonating food in water, and that the shelf life of vegetables may be extended via ozonation.

Effect of Ozone on Vegetables (Bacterial Removal)

SAMPLE DESCRIPTION : ONE (1) UNIT OF (TOP-OZONE) UV-OZONE FOOD STERLIZER (MODEL: FS-505) FOR BACTERIA REMOVAL EFFICIENCY TESTING USING LEAFY VEGETABLE 'PAK CHOY'

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SAMPLE MARKING : 1) UNWASHED
2) SOAKED IN TAP WATER (30 MINUTES IN 3 LITRES)
3) SOAKED AND OZONE BUBBLING IN TAP WATER (30 MINUTES IN 3 LITRES)

TEST PARAMETER	UNIT	TEST METHOD	RESULT				
			1	2		3	
			Unwashed (as control)	Result	% Removal	Result	% Removal
Total Bacterial Count @ 37°C for 48 hours	cfu/kg	AS 1766.1.3, 1991	1.2×10^6	4.2×10^5	65	3.0×10^5	75
E.coli	MPN/g	BS 5763:PART 3/ISO 7251	>1100	93	92	9.1	>99

REMARKS:

- 1) AS – Australian Standard
- 2) BS – British Standard
- 3) ISO – International Organization for Standardization
- 4) The above analysis was carried out on leafy vegetable "Pak Choy" which was soaked in cultured bacteria solution and left dried. The air-dried "Pak Choy" was then divided into 3 portions of unwash, soaked in tap water, and soaked and ozone bubbling in tap water for the above testing.

Laboratory Tests - Laboratory testing done in Malaysia demonstrates activated oxygen's effect on chemicals in food and bacterial contaminants. Tests quoted include nutrient comparisons, shelf life extension testing, antimicrobial effect, effect of ozone on pesticides.