

## LAMPIRAN

### Lampiran 1. *Layout* Penelitian

B1C0	B4C1	B3C0
B3C1	B2C0	B1C1
B4C0	KO	B2C1

Keterangan:

Faktor pertama adalah konsentrasi Natrium Bisulfit (Natrium Bisulfit) yang terdiri dari 4 aras yaitu:

B1 = 50 ppm

B2 = 100 ppm

B3 = 150 ppm

B4 = 200 ppm

Faktor kedua adalah perlakuan *edible coating* CMC 1% yang terdiri dari dua aras yaitu:

C0 = tanpa *edible coating* CMC 1%

C1 = *edible coating* CMC 1%

Sehingga dihasilkan 8 kombinasi perlakuan yaitu:

B1C0 = Natrium Bisulfit 50 ppm+ tanpa *edible coating* CMC 1%

B1C1 = Natrium Bisulfit 50 ppm+ *edible coating* CMC 1%

B2C0 = Natrium Bisulfit 100 ppm+ tanpa *edible coating* CMC 1%

B2C1 = Natrium Bisulfit 100 ppm+ *edible coating* CMC 1%

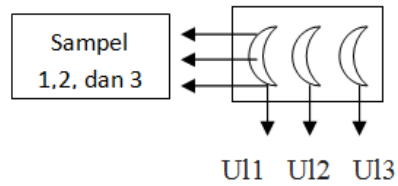
B3C0 = Natrium Bisulfit 150 ppm+ tanpa *edible coating* CMC 1%

B3C1 = Natrium Bisulfit 150 ppm+ *edible coating* CMC 1%

B4C0 = Natrium Bisulfit 200 ppm+ tanpa *edible coating* CMC 1%

B4C1 = Natrium Bisulfit 200 ppm+ *edible coating* CMC 1%

KO (Kontrol) = Tanpa perlakuan



Keterangan:

S1= Sampel 1

S2= Sampel 2

S3= Sampel 3

U1 1= Ulangan 1

U1 2= Ulangan 2

U1 3= Ulangan 3

## Lampiran 2. Perhitungan Kebutuhan Bahan

### A. Kebutuhan Apel

Terdapat 6 kali pengamatan yaitu pada hari ke 0,3,6,9,12,15

1 kg buah terdapat 5 buah apel

1 apel bisa dibagi menjadi 6 potong

1 sterofom berisi 3 atau 4 potong

Jumlah buah apel Manalagi yang diperlukan ditentukan berdasarkan parameter pengamatan yang dilakukan di antaranya :

1. Pengujian Susut Berat

Perlakuan x pengamatan x jumlah buah dalam satu sterofom

$$9 \times 1 \times 3 = 27 \text{ potong}$$

2. Pengujian Warna

Perlakuan x pengamatan x jumlah buah dalam satu sterofom

$$9 \times 1 \times 3 = 27 \text{ potong}$$

3. Pengujian gula reduksi, total asam titrasi, gula total, kekerasan, dan mikrobiologi

Perlakuan x pengamatan x jumlah buah dalam satu sterofom

$$9 \times 6 \times 4 = 216 \text{ potong}$$

4. Pengujian Organoleptic

Perlakuan x pengamatan x jumlah buah dalam satu sterofom

$$9 \times 6 \times 3 = 162 \text{ potong}$$

5. Total

$$27 \text{ potong} + 27 \text{ potong} + 216 \text{ potong} + 162 \text{ potong} = 432 \text{ potong}$$

$$432 \text{ potong} : 6 \text{ potong (1 buah dipotong 6)} = 72 \text{ buah}$$

$$70 \text{ buah} : 5 \text{ buah (1 kg isi 5 buah)} = 14,4 \text{ kg buah apel}$$

Jadi kebutuhan buah apel Manalagi sebanyak 72 buah dengan berat 14,4 kg. Jumlah total sterofom 126 yang terdiri dari 56 sterofom dengan edible CMC, 56 sterofom tanpa *edible* CMC, dan 14 sterofom tanpa perlakuan.

**B. Kebutuhan Natrium Bisulfit**

Diketahui : 1 ppm Natrium bisulfit = 1 mg/liter

Jadi :

Natrium bisulfit 50 ppm = 50 mg/liter

Natrium bisulfit 100 ppm = 100 mg/liter

Natrium bisulfit 150 ppm = 150 mg/liter

Natrium bisulfit 200 ppm = 200 mg/liter

**C. Kebutuhan CMC**

1% x 1 liter

$$\frac{1}{100} \times 1000 \text{ ml}$$

= 10 gram CMC / liter

= 10 gram/1000 ml

= 5 gram/500 ml

Terdapat 4 perlakuan yang menggunakan metode pencelupan CMC sehingga total kebutuhan CMC adalah:

$$5\text{gram} \times 4 = 20 \text{ gram}$$

**D. Kebutuhan nelson C**

Diketahui : Nelson C = 1 ml

Perbandingan nelson A dan B = 25 : 1

Jumlah total campuran = 26

Perlakuan = 9

Ulangan = 3

Pengamatan = 6 kali

Ditanya : Jumlah nelson A dan B ?

Jawab :

$$\text{a. Nelson A} = \frac{25}{26} \times 1 = 0,96 \text{ ml}$$

Kebutuhan total nelson A = 0,96 ml x 9 x 3 x 6

$$= 155,52 \text{ ml}$$

$$\text{b. Nelson B} = \frac{1}{26} \times 1 = 0,04 \text{ ml}$$

$$\begin{aligned} \text{Kebutuhan total nelson B} &= 0,04 \times 9 \times 3 \times 6 \\ &= 6,48 \text{ ml} \end{aligned}$$

**E. Kebutuhan Arsenomoblidat**

$$1 \text{ ml arseno} \times 9 \text{ perlakuan} \times 3 \text{ ulangan} \times 6 \text{ kali pengamatan} = 162 \text{ ml}$$

Jadi, kebutuhan total arseno sebanyak 162 ml

**F. Medium PCA**

22,5 gram/liter

### Lampiran 3. Lampiran SAS

#### 1. Susut Bobot

Keterangan: s = *significant*  
ns = *non significant*

##### Hari ke 3

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	3.13497051	0.39187131	7.01	0.0004s
Natbis	4	0.81965385	0.20491346	3.66	0.0250s
CMC	1	1.83033333	1.83033333	32.73	0.0001s
Natbis*CMC	3	0.48498333	0.16166111	2.89	0.0657ns
Galat	17	0.95058333	0.05591667		
Total	25	4.08555385			
R2	0.767331	Akar KTG	0.236467		
CV	22.45487	Rata-rata	1.05307		

##### Hari ke 6

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	6.34291852	0.79286481	1.74	0.1569ns
Natbis	4	1.73063519	0.43265880	0.95	0.4588ns
CMC	1	3.47320417	3.47320417	7.62	0.0129s
Natbis*CMC	3	1.13907917	0.37969306	0.83	0.4932ns
Galat	18	8.20686667	0.45593704		
Total	26	14.54978519			
R2	0.435946	Akar KTG	0.675231		
CV	28.98909	Rata-rata	2.329259		

##### Hari ke 9

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	5.04173846	0.63021731	2.15	0.0877ns
Natbis	4	2.82954179	0.70738545	2.41	0.0891ns
CMC	1	1.90589754	1.90589754	6.51	0.0207s
Natbis*CMC	3	0.30629912	0.10209971	0.35	0.7907ns
Galat	17	4.97965000	0.29292059		
Total	25	10.02138846			
R2	0.503098	Akar KTG	0.541221		
CV	15.88772	Rata-rata	3.406538		

**Hari ke 12**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	8.85905185	1.10738148	2.05	0.0982ns
Natbis	4	3.40831852	0.85207963	1.58	0.2231ns
CMC	1	3.24135000	3.24135000	6.00	0.0248s
Natbis*CMC	3	2.20938333	0.73646111	1.36	0.2857ns
Galat	18	9.72213333	0.54011852		
Total	26	18.58118519			

R2 0.476775 Akar KTG 0.734928  
 CV 16.85900 Rata-rata 4.359259

**Hari ke 15**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	13.71118519	1.71389815	3.34	0.0159s
Natbis	4	12.93498519	3.23374630	6.31	0.0023s
CMC	1	0.54601667	0.54601667	1.07	0.3157ns
Natbis*CMC	3	0.23018333	0.07672778	0.15	0.9285ns
Galat	18	9.22553333	0.51252963		
Total	26	22.93671852			

R2 0.597783 Akar KTG 0.715912  
 CV 13.02272 Rata-rata 5.497407

**2. Kekerasan**

Keterangan: s = *significant*  
 ns = *non significant*

**Hari ke 0**

Sumberragam	db	JK	KT	F Hitung	Prab
Model	8	0.12929630	0.01616204	1.09	0.4138ns
Natbis	4	0.05004630	0.01251157	0.84	0.5160ns
CMC	1	0.02343750	0.02343750	1.58	0.2249ns
Natbis*CMC	3	0.05581250	0.01860417	1.25	0.3199ns
Galat	18	0.26713333	0.01484074		
Total	26	0.39642963			

R2 0.326152 Akar KTG 0.121823  
 CV 6.079870 Rata-rata 2.003704

**Hari ke 3**

Sumberragam	db	JK	KT	F Hitung	Prab
Model	8	0.72986154	0.09123269	3.66	0.0117s
Natbis	4	0.28157487	0.07039372	2.82	0.0579s
CMC	1	0.00000070	0.00000070	0.00	0.9958ns
Natbis*CMC	3	0.44828596	0.14942865	5.99	0.0056s
Galat	17	0.42400000	0.02494118		
Total	25	1.15386154			
R2 0.632538	Akar KTG	0.157928			
CV 0.632538	Rata-rata	1.762308			

**Hari ke 6**

Sumberragam	db	JK	KT	F Hitung	Prab
Model	8	1.54219872	0.19277484	4.73	0.0034s
Natbis	4	0.59678538	0.14919635	3.66	0.0251s
CMC	1	0.00236070	0.00236070	0.06	0.812ns
Natbis*CMC	3	0.94305263	0.31435088	7.71	0.0018s
Galat	17	0.69306667	0.04076863		
Total	25	2.23526538			
R2 0.689940	Akar KTG	0.201912			
CV 10.15224	Rata-rata	1.988846			

**Hari ke 9**

Sumberragam	db	JK	KT	F Hitung	Prab
Model	8	0.40240741	0.05030093	0.91	0.5272ns
Natbis	4	0.30424074	0.07606019	1.38	0.2797ns
CMC	1	0.00026667	0.00026667	0.00	0.9453ns
Natbis*CMC	3	0.09790000	0.03263333	0.59	0.6277ns
Galat	18	0.99086667	0.05504815		
Total	26	1.39327407			
R2 0.288821	Akar KTG	0.234623			
CV 12.51201	Rata-rata	1.875185			

**Hari ke 12**

Sumberragam	db	JK	KT	F Hitung	Prab
Model	8	0.69779615	0.08722452	5.09	0.0023s
Natbis	4	0.22428282	0.05607071	3.28	0.0366s
CMC	1	0.02963526	0.02963526	1.73	0.2058ns
Natbis*CMC	3	0.44387807	0.14795936	8.64	0.0010s
Galat	17	0.29105000	0.01712059		
Total	25	0.98884615			
R2 0.705667	Akar KTG	0.130846			
CV 7.291014	Rata-rata	1.794615			



**Hari ke 15**

Sumberragam	db	JK	KT	F Hitung	Prab
Model	8	0.26174074	0.03271759	1.29	0.3096ns
Natbis	4	0.19619074	0.04904769	1.93	0.1488ns
CMC	1	0.00000417	0.00000417	0.00	0.9899ns
Natbis*CMC	3	0.06554583	0.02184861	0.86	0.4795ns
Galat	18	0.45713333	0.02539630		
Total	26	0.71887407			

R2	0.364098	Akar KTG	0.159362
CV	10.58754	Rata-rata	1.505185

**3. Total Asam Titrasi**

Keterangan: s = *significant*  
 ns = *non significant*

**Hari ke 0**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	0.60774074	0.07596759	4.83	0.0027s
Natbis	4	0.47324074	0.11831019	7.52	0.0010s
CMC	1	0.02535000	0.02535000	1.61	0.2205ns
Natbis*CMC	3	0.10915000	0.03638333	2.31	0.1106ns
Galat	18	0.28326667	0.01573704		
Total	26	0.89100741			

R2	0.682083	Akar KTG	0.125447
CV	4.865793	Rata-rata	2.578148

**Hari ke 3**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	0.43313333	0.05414167	4.19	0.0056s
Natbis	4	0.15960000	0.03990000	3.09	0.0424s
CMC	1	0.23601667	0.23601667	18.25	0.0005s
Natbis*CMC	3	0.03751667	0.01250556	0.97	0.4297ns
Galat	18	0.23273333	0.01292963		
Total	26	0.66586667			

R2	0.650481	Akar KTG	0.113709
CV	5.478462	Rata-rata	2.075556

**Hari ke 6**

Sumberragam	db	JK	KT	F Hitung	Prab
Model	8	1.59369630	0.19921204	4.38	0.0044s
Natbis	4	0.98066296	0.24516574	5.39	0.0050s
CMC	1	0.13801667	0.13801667	3.03	0.0987ns
Natbis*CMC	3	0.47501667	0.15833889	3.48	0.0376s
Galat	18	0.81926667	0.04551481		
Total	26	2.41296296			

R2 0.660473    Akar KTG 0.213342  
 CV 12.21165    Rata-rata 1.747037

**Hari ke 9**

Sumberragam	db	JK	KT	F Hitung	Prab
Model	8	4.40225185	0.55028148	6.54	0.0005s
Natbis	4	4.02366852	1.00591713	11.96	<.0001s
CMC	1	0.08760417	0.08760417	1.04	0.3210ns
Natbis*CMC	3	0.29097917	0.09699306	1.15	0.3548ns
Galat	18	1.51400000	0.08411111		
Total	26	5.91625185			

R2 0.744095    Akar KTG 0.290019  
 CV 13.32854    Rata-rata 2.175926

**Hari ke 12**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	0.04065185	0.00508148	0.65	0.7273ns
Natbis	4	0.02558519	0.00639630	0.82	0.5305ns
CMC	1	0.00540000	0.00540000	0.69	0.4169ns
Natbis*CMC	3	0.00966667	0.00322222	0.41	0.7464ns
Galat	18	0.14080000	0.00782222		
Total	26	0.18145185			

R2 0.224037    Akar KTG 0.088443  
 CV 13.69249    Rata-rata 0.645926

**Hari ke 15**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	0.95285185	0.11910648	7.89	0.0001s
Natbis	4	0.51043519	0.12760880	8.45	0.0005s
CMC	1	0.34800417	0.34800417	23.05	0.0001s
Natbis*CMC	3	0.09441250	0.03147083	2.08	0.1381ns
Galat	18	0.27173333	0.01509630		
Total	26	1.22458519			

R2 0.778102    Akar KTG 0.122867  
 CV 13.64066    Rata-rata 0.900741

#### 4. Total Padatan Terlarut

Keterangan: s = *significant*  
ns = *non significant*

##### Hari ke 0

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	42.88702949	5.36087869	458.27	0.0001s
Natbis	4	26.22312949	6.55578237	560.42	0.0001s
CMC	1	0.30107018	0.30107018	25.74	0.0001s
Natbis*CMC	3	16.36282982	5.45427661	466.26	0.0001s
Galat	17	0.19886667	0.01169804		
Total	25	43.08589615			

R2 0.995384 Akar KTG 0.108157

CV 0.919736 Rata-rata 11.75962

##### Hari ke 3

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	14.80547407	1.85068426	733.75	0.0001s
Natbis	4	5.75707407	1.43926852	570.64	0.0001s
CMC	1	0.76326667	0.76326667	302.62	0.0001s
Natbis*CMC	3	8.28513333	2.76171111	1094.95	0.0001s
Galat	18	0.04540000	0.00252222		
Total	26	14.85087407			

R2 0.996943 Akar KTG 0.050222

CV 0.430540 Rata-rata 11.66481

##### Hari ke 6

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	22.14386667	2.76798333	75.89	0.0001s
Natbis	4	2.41728333	0.60432083	16.57	0.0001s
CMC	1	7.78620417	7.78620417	213.47	0.0001s
Natbis*CMC	3	11.94037917	3.98012639	109.12	0.0001s
Galat	18	0.65653333	0.03647407		
Total	26	22.80040000			

R2 0.971205 Akar KTG 0.190982

CV 1.556072 Rata-rata 12.27333

**Hari ke 9**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	9.04271852	1.13033981	930.46	0.0001s
Natbis	4	5.94296852	1.48574213	1223.02	0.0001s
CMC	1	0.08520417	0.08520417	70.14	0.0001s
Natbis*CMC	3	3.01454583	1.00484861	827.16	0.0001s
Galat	18	0.02186667	0.00121481		
Total	26	9.06458519			

R2 0.997588 Akar KTG 0.034854  
 CV 0.294607 Rata-rata 11.83074

**Hari ke 12**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	36.77520000	4.59690000	28.97	0.0001s
Natbis	4	20.94470000	5.23617500	33.00	0.0001s
CMC	1	11.56481667	11.56481667	72.89	0.0001s
Natbis*CMC	3	4.26568333	1.42189444	8.96	0.0008s
Galat	18	2.85586667	0.15865926		
Total	26	39.63106667			

R2 0.927939 Akar KTG 0.398321  
 CV 3.002919 Rata-rata 13.26444

**Hari ke 15**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	18.69898519	2.33737315	528.11	0.0001s
Natbis	4	7.87573519	1.96893380	444.86	0.0001s
CMC	1	2.17803750	2.17803750	492.11	0.0001s
Natbis*CMC	3	8.64521250	2.88173750	651.10	0.0001s
Galat	18	0.07966667	0.00442593		
Total	26	18.77865185			

R2 0.995758 Akar KTG 0.066528  
 CV 0.473981 Rata-rata 14.03593

**5. Gula Reduksi**

Keterangan: s = *significant*  
 ns = *non significant*

**Hari ke 0**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	33.09240741	4.13655093	29.89	0.0001s
Natbis	4	27.64985167	6.91246292	49.94	0.0001s
CMC	1	0.00540000	0.00540000	0.04	0.8456ns
Natbis*CMC	3	2.11180000	0.70393333	5.09	0.0100s
Galat	18	2.49140000	0.13841111		

Total	26	35.58380741		
R2	0.929985		Akar KTG	0.372036
CV	3.039054		Rata-rata	12.24185

**Hari ke 3**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	43.78158519	5.47269815	23.57	0.0001s
Natbis	4	5.21231250	1.30307812	5.61	0.0041s
CMC	1	9.11433750	9.11433750	39.25	0.0001s
Natbis*CMC	3	26.04137917	8.68045972	37.38	0.0001s
Galat	18	4.18020000	0.23223333		
Total	26	47.96178519			

R2	0.912843		Akar KTG	0.481906
CV	3.645075		Rata-rata	13.22074

**Hari ke 6**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	105.2847630	13.1605954	43.01	0.0001s
Natbis	4	71.63098167	17.90774542	58.52	0.0001s
CMC	1	10.32281667	10.32281667	33.74	0.0001s
Natbis*CMC	3	32.10388333	10.70129444	34.97	0.0001s
Galat	18	5.5077333	0.3059852		
Total	26	110.7924963			

R2	0.950288		Akar KTG	0.553159
CV	3.994037		Rata-rata	13.84963

**Hari ke 9**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	144.5244741	18.0655593	8.15	0.0001s
Natbis	4	22.72088583	5.68022146	2.56	0.0738ns
CMC	1	79.17033750	79.17033750	35.72	0.0001s
Natbis*CMC	3	42.12357917	14.04119306	6.33	0.0040s
Galat	18	39.8985333	2.2165852		
Total	26	184.4230074			

R2	0.783658		Akar KTG	7.753523
CV	1.488820		Rata-rata	19.20185

**Hari ke 12**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	25.31173333	3.16396667	13.22	0.0001s
Natbis	4	5.43641500	1.35910375	5.68	0.0039s
CMC	1	6.89081667	6.89081667	28.78	0.0001s
Natbis*CMC	3	11.05098333	3.68366111	15.39	0.0001s
Galat	18	4.30906667	0.23939259		
Total	26	29.62080000			
R2	0.854526	Akar KTG	0.489278		
CV	3.417539	Rata-rata	14.31667		

**Hari ke 15**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	42.38789630	5.29848704	9.01	0.0001s
Natbis	4	35.97805000	8.99451250	15.29	0.0001s
CMC	1	0.64681667	0.64681667	1.10	0.3082ns
Natbis*CMC	3	5.89338333	1.96446111	3.34	0.0425s
Galat	18	10.58660000	0.58814444		
Total	26	52.97449630			
R2	0.800157	Akar KTG	0.766906		
CV	5.454665	Rata-rata	14.05963		

**6. Warna**

Keterangan: s = *significant*  
ns = *non significant*

**Hari ke 0**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	446.5524519	55.8190565	9.45	0.0001s
Natbis	4	346.1412685	86.5353171	14.64	0.0001s
CMC	1	32.3176042	32.3176042	5.47	0.0311s
Natbis*CMC	3	68.0935792	22.6978597	3.84	0.0275s
Galat	18	106.3651333	5.9091741		
Total	26	552.9175852			
R2	0.807629	Akar KTG	2.430879		
CV	2.900439	Rata-rata	83.81074		

**Hari ke 3**

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	614.471000	76.808875	1.11	0.4037ns
Natbis	4	238.5866833	59.6466708	0.86	0.5069ns
CMC	1	43.3359375	43.3359375	0.62	0.4398ns
Natbis*CMC	3	332.5483792	110.8494597	1.60	0.2251ns

Galat	18	1249.616800	69.423156
Total	26	1864.087800	

R2 0.329636 Akar KTG 8.332056  
 CV 10.88494 Rata-rata 76.54667

### Hari ke 6

Sumberragam	db	JK	KT	F Hitung	Prab
Perlakuan	8	44.36502963	5.54562870	9.33	0.0001s
Natbis	4	32.07407963	8.01851991	13.49	0.0001s
CMC	1	0.10270417	0.10270417	0.17	0.6826ns
Natbis*CMC	3	12.18824583	4.06274861	6.83	0.0029s
Galat	18	10.70300000	0.59461111		
Total	26	55.06802963			

R2 0.805640 Akar KTG 0.771110  
 CV 0.997250 Rata-rata 77.32370

### Hari ke 9







Sumberragam	db	JK	KT	F Hitung	Prab
Model	8	119.0570074	14.8821259	9.98	<.0001s
Natbis	4	70.19049074	17.54762269	11.77	<.0001s
CMC	1	8.22510417	8.22510417	5.51	0.0305s
Natbis*CMC	3	40.64141250	13.54713750	9.08	0.0007s
Galat1	8	26.8471333	1.4915074		
Total	26	145.9041407			

R2 0.815995 Akar KTG 1.221273  
 CV 1.599603 Rata-rata 76.34852

#### Lampiran 4. Dokumentasi Kegiatan










		
<p>Pembuatan CMC</p>	<p>Penimbangan media PCA</p>	<p>Pembuatan media</p>
		
<p>Pembuatan larutan Natrium bisulfit</p>	<p>Pencucian apel menggunakan klorin</p>	<p>Pemotongan</p>
		
<p>Pengaplikasian Natrium Bisulfit</p>	<p>Pengaplikasian CMC</p>	<p>Pengemasan</p>












		
Uji Titrasi	Uji susut berat	Uji Warna
		
Uji kekerasan	Uji gula reduksi	Uji mikrobiologi
		
Perebusan alat	Autoklaf	Perebusan media

## Kenampakan Warna Pada *Fresh-Cut* Apel Manalagi










### a. Hari ke-0

		
Kontrol	Natrium bisulfit 50 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 50 ppm+ <i>edible coating</i> CMC 1%
		
Natrium bisulfit 100 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 100 ppm+ <i>edible coating</i> CMC 1%	Natrium bisulfit 150 ppm+ tanpa <i>edible coating</i> CMC 1%
		
Natrium bisulfit 150 ppm+ <i>edible coating</i> CMC 1%	Natrium bisulfit 200 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 200 ppm+ <i>edible coating</i> CMC 1%

## b. Hari ke-3










		
Kontrol	Natrium bisulfit 50 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 50 ppm+ <i>edible coating</i> CMC 1%
		
Natrium bisulfit 100 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 100 ppm+ <i>edible coating</i> CMC 1%	Natrium bisulfit 150 ppm+ tanpa <i>edible coating</i> CMC 1%
		
Natrium bisulfit 150 ppm+ <i>edible coating</i> CMC 1%	Natrium bisulfit 200 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 200 ppm+ <i>edible coating</i> CMC 1%

## c. Hari ke 6






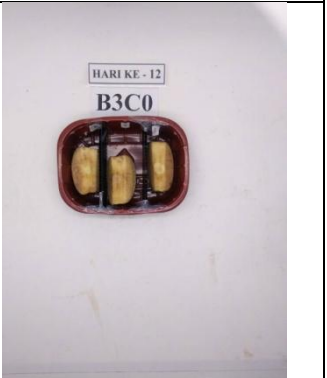



		
Kontrol	Natrium bisulfit 50 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 50 ppm+ <i>edible coating</i> CMC 1%
		
Natrium bisulfit 100 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 100 ppm+ <i>edible coating</i> CMC 1%	Natrium bisulfit 150 ppm+ tanpa <i>edible coating</i> CMC 1%
		
Natrium bisulfit 150 ppm+ <i>edible coating</i> CMC 1%	Natrium bisulfit 200 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 200 ppm+ <i>edible coating</i> CMC 1%












## d. Hari ke-9

		
Kontrol	Natrium bisulfit 50 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 50 ppm+ <i>edible coating</i> CMC 1%
		
Natrium bisulfit 100 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 100 ppm+ <i>edible coating</i> CMC 1%	Natrium bisulfit 150 ppm+ tanpa <i>edible coating</i> CMC 1%
		
Natrium bisulfit 150 ppm+ <i>edible coating</i> CMC 1%	Natrium bisulfit 200 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 200 ppm+ <i>edible coating</i> CMC 1%

## e. Hari ke 12

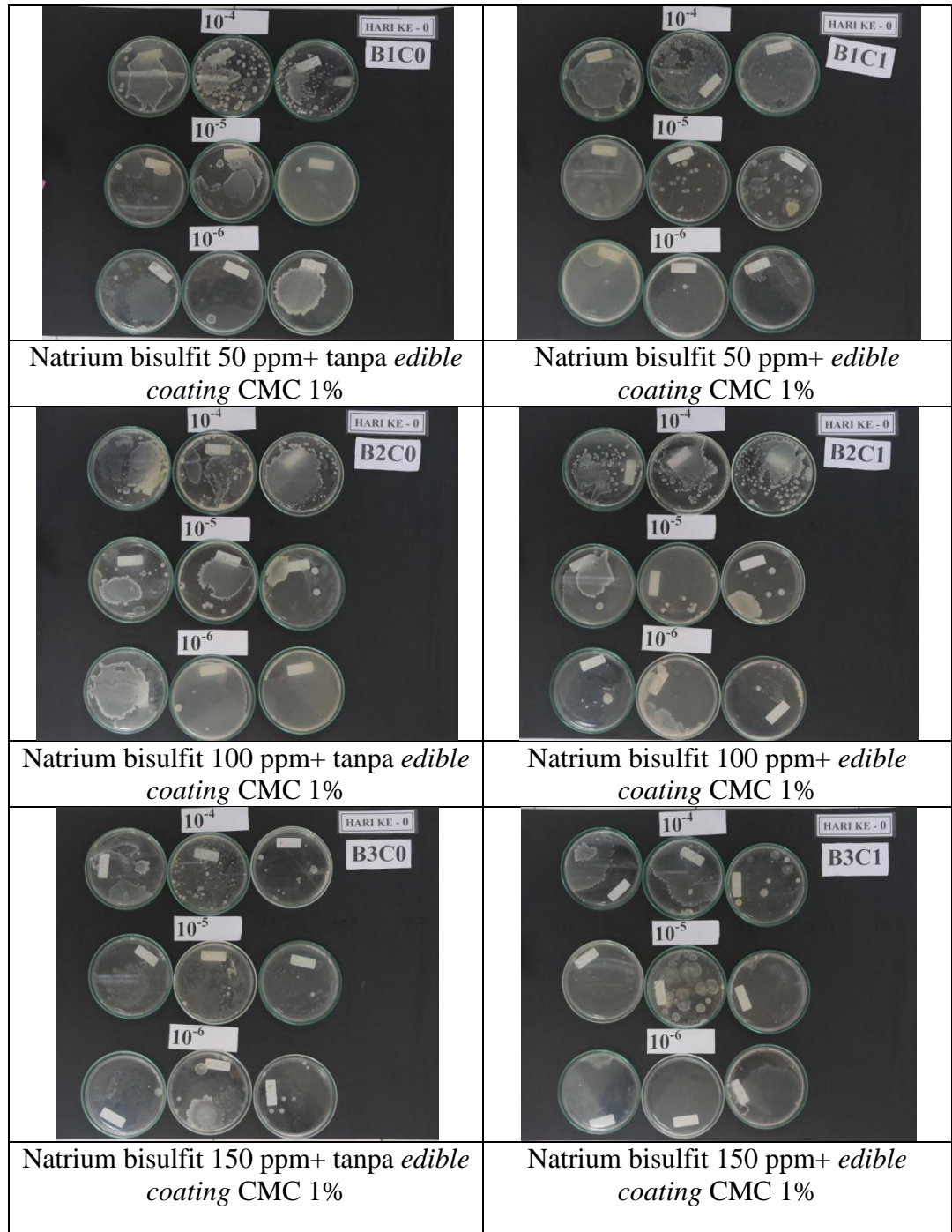
		
Kontrol	Natrium bisulfit 50 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 50 ppm+ <i>edible coating</i> CMC 1%
		
Natrium bisulfit 100 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 100 ppm+ <i>edible coating</i> CMC 1%	Natrium bisulfit 150 ppm+ tanpa <i>edible coating</i> CMC 1%
		
Natrium bisulfit 150 ppm+ <i>edible coating</i> CMC 1%	Natrium bisulfit 200 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 200 ppm+ <i>edible coating</i> CMC 1%

## f. Hari k 15

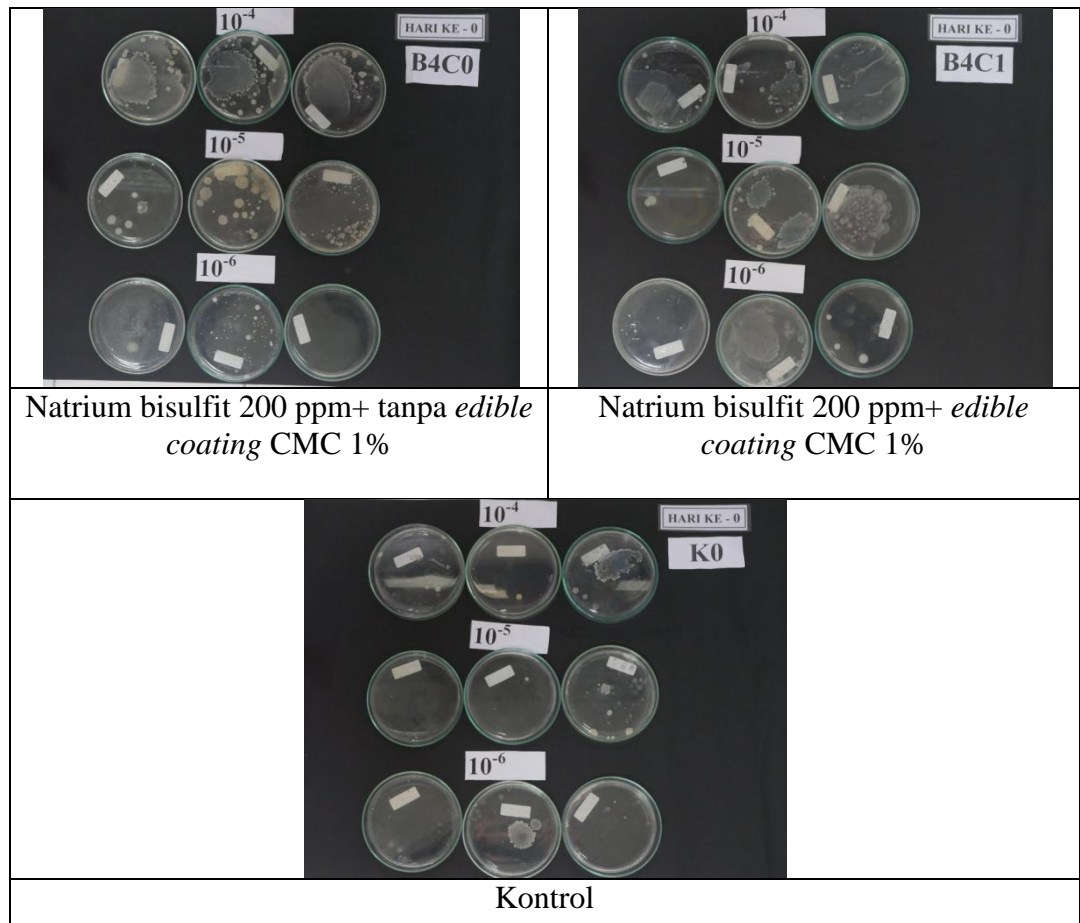
		
Kontrol	Natrium bisulfit 50 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 50 ppm+ <i>edible coating</i> CMC 1%
		
Natrium bisulfit 100 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 100 ppm+ <i>edible coating</i> CMC 1%	Natrium bisulfit 150 ppm+ tanpa <i>edible coating</i> CMC 1%
		
Natrium bisulfit 150 ppm+ <i>edible coating</i> CMC 1%	Natrium bisulfit 200 ppm+ tanpa <i>edible coating</i> CMC 1%	Natrium bisulfit 200 ppm+ <i>edible coating</i> CMC 1%

## Mikrobiologi

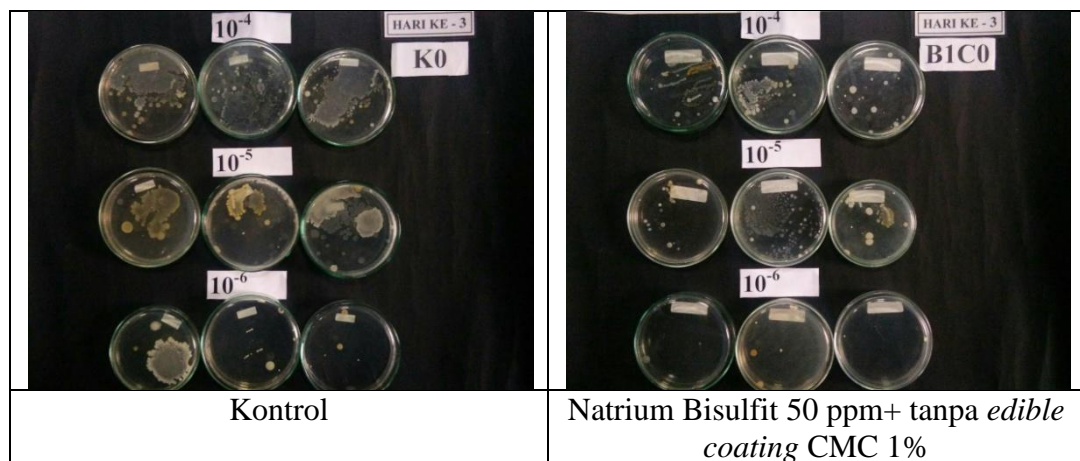
### a. Hari ke-0

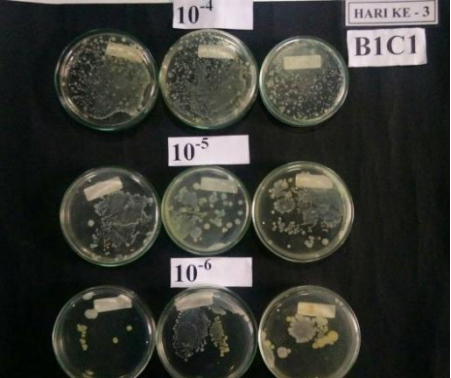
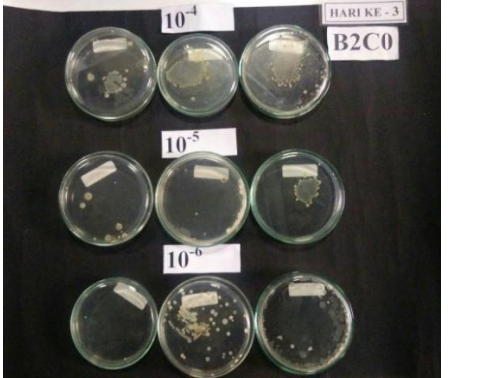
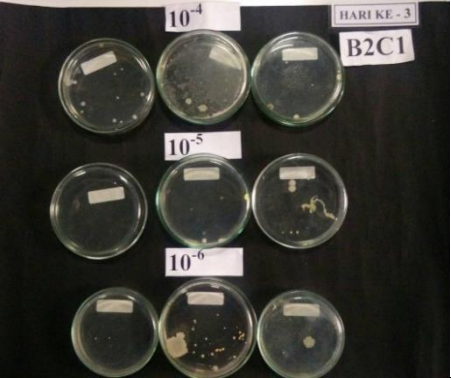
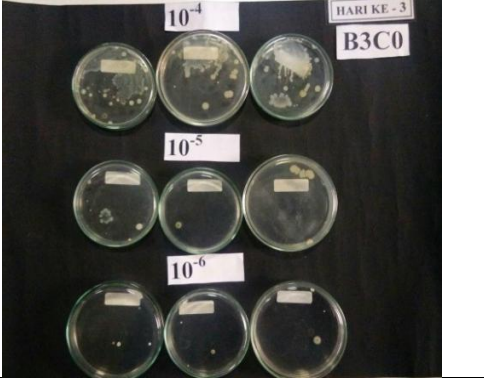




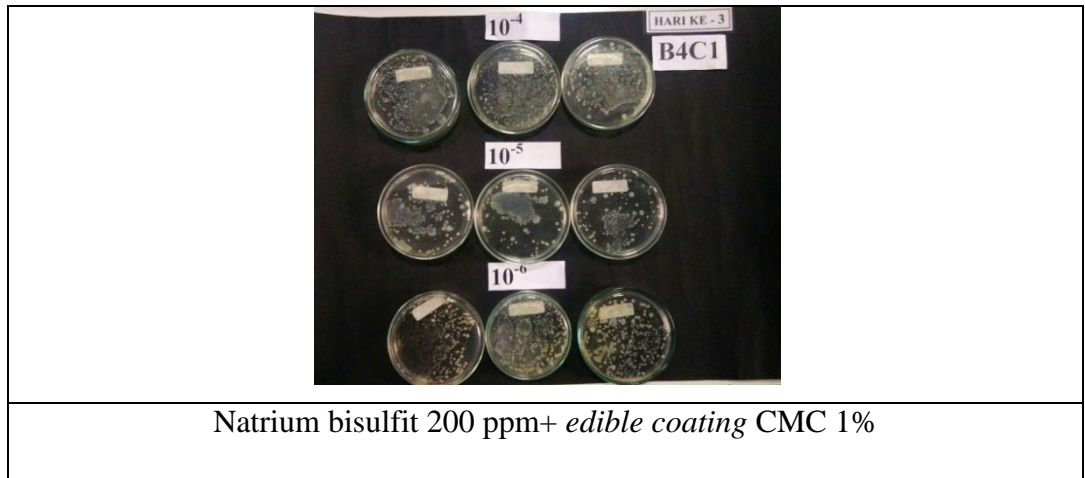




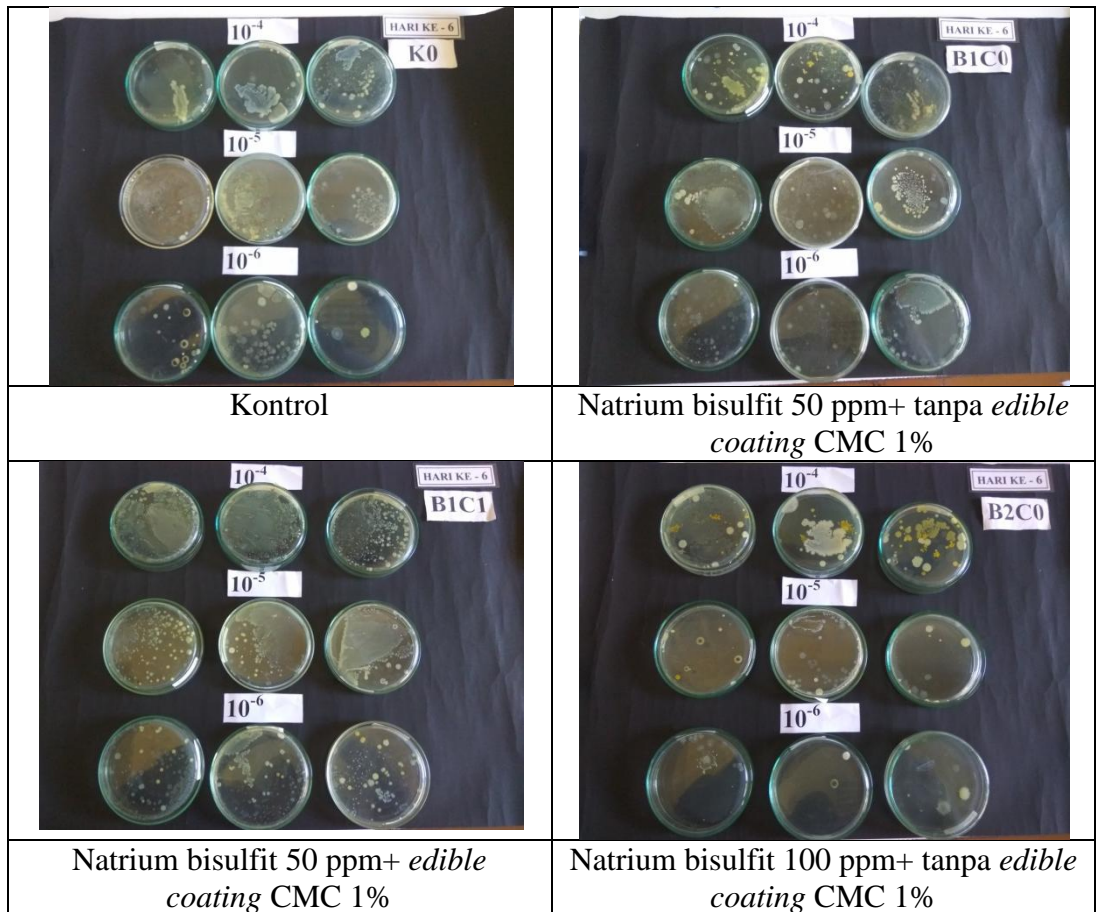
**b. Hari ke 3**



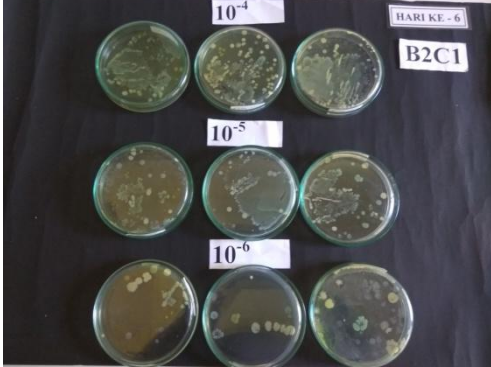
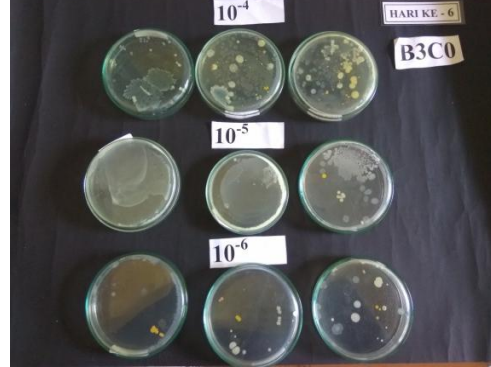
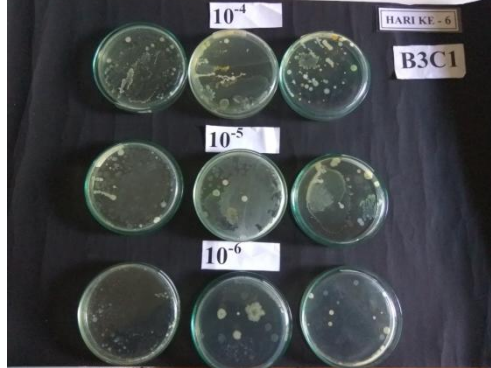
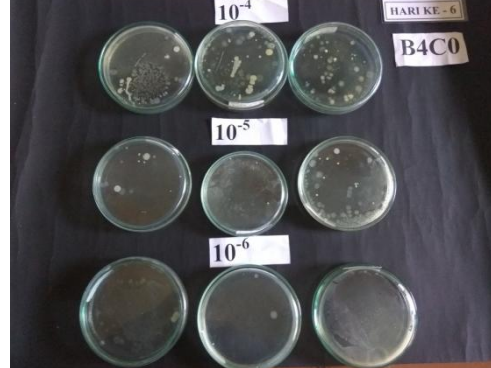
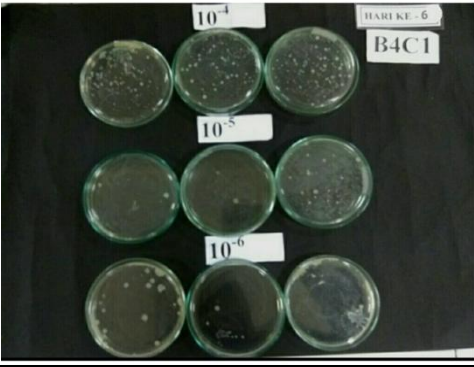
 <p>10<sup>-4</sup> HARI KE - 3 B1C1 10<sup>-5</sup> 10<sup>-6</sup></p>	 <p>10<sup>-4</sup> HARI KE - 3 B2C0 10<sup>-5</sup> 10<sup>-6</sup></p>
<p>Natrium bisulfit 50 ppm+ <i>edible coating</i> CMC 1%</p>	<p>Natrium bisulfit 100 ppm+ tanpa <i>edible coating</i> CMC 1%</p>
 <p>10<sup>-4</sup> HARI KE - 3 B2C1 10<sup>-5</sup> 10<sup>-6</sup></p>	 <p>10<sup>-4</sup> HARI KE - 3 B3C0 10<sup>-5</sup> 10<sup>-6</sup></p>
<p>Natrium bisulfit 100 ppm+ <i>edible coating</i> CMC 1%</p>	<p>Natrium bisulfit 150 ppm+ tanpa <i>edible coating</i> CMC 1%</p>
 <p>10<sup>-4</sup> HARI KE - 3 B3C1 10<sup>-5</sup> 10<sup>-6</sup></p>	 <p>10<sup>-4</sup> HARI KE - 3 B4C0 10<sup>-5</sup> 10<sup>-6</sup></p>
<p>Natrium bisulfit 150 ppm+ <i>edible coating</i> CMC 1%</p>	<p>Natrium bisulfit 200 ppm+ tanpa <i>edible coating</i> CMC 1%</p>



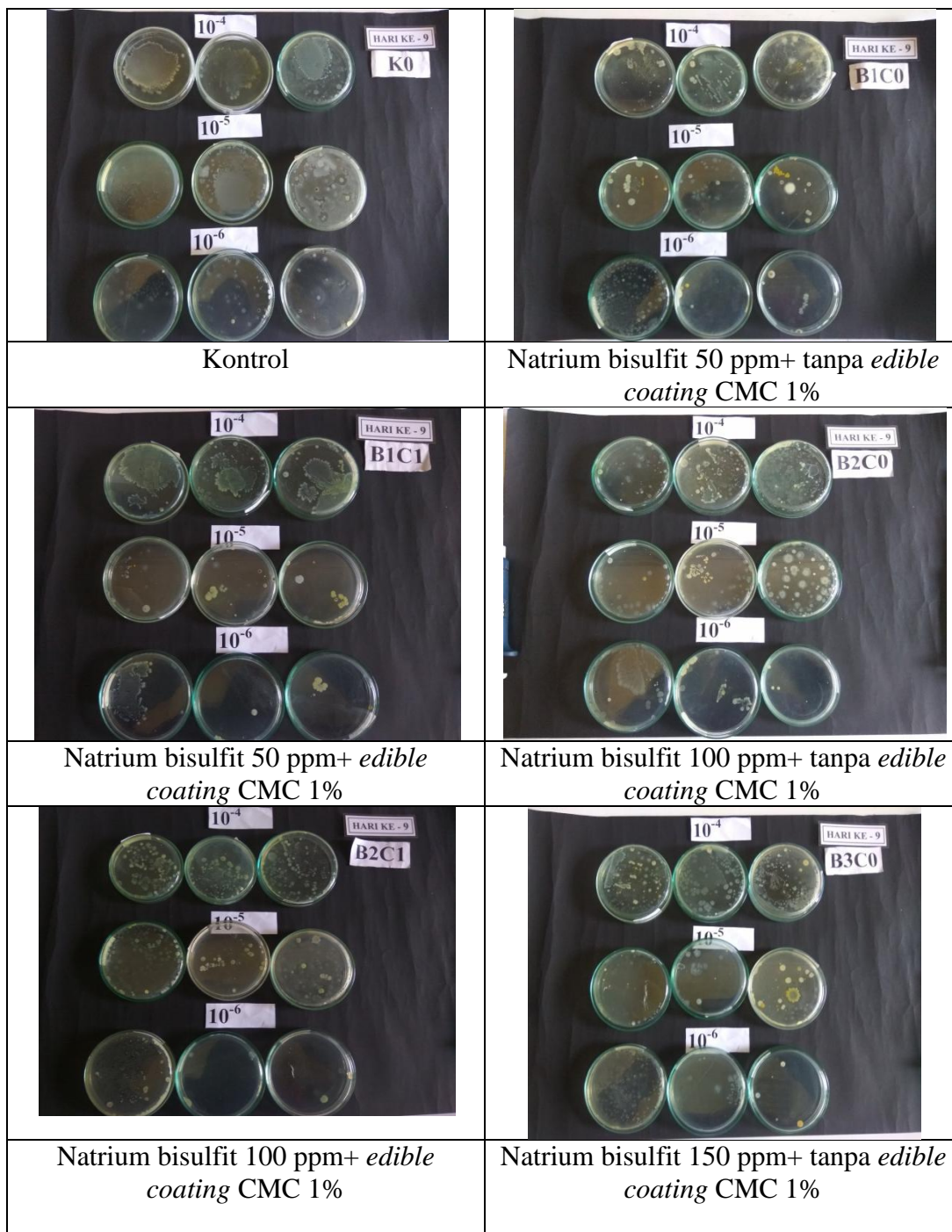
c. Hari ke-6

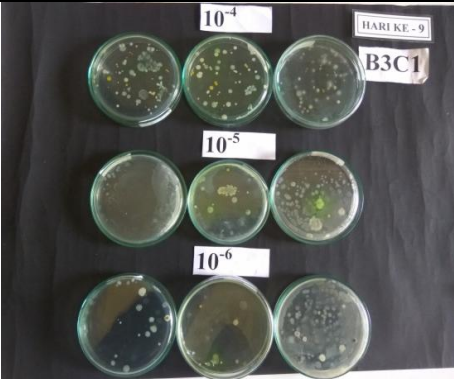
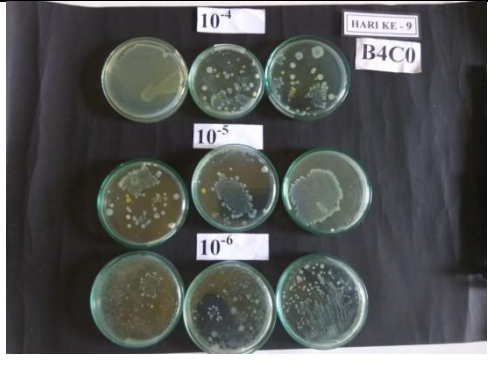





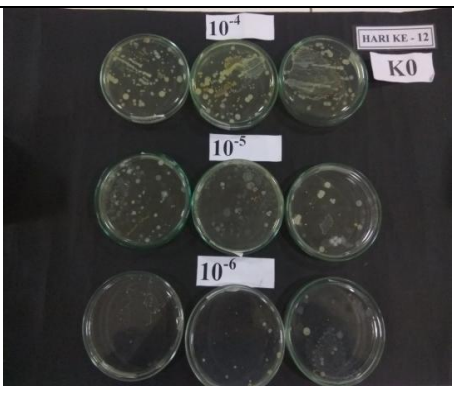
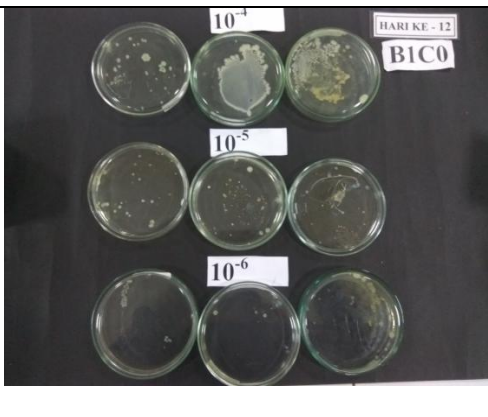
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<p>Natrium bisulfit 100 ppm+ <i>edible coating CMC 1%</i></p>	<p>Natrium bisulfit 150 ppm+ tanpa <i>edible coating CMC 1%</i></p>
 <p>10<sup>-4</sup> HARI KE - 6 B3C1 10<sup>-5</sup> 10<sup>-6</sup></p>	 <p>10<sup>-4</sup> HARI KE - 6 B4C0 10<sup>-5</sup> 10<sup>-6</sup></p>
<p>Natrium bisulfit 150 ppm+ <i>edible coating CMC 1%</i></p>	<p>Natrium bisulfit 200 ppm+ tanpa <i>edible coating CMC 1%</i></p>
 <p>10<sup>-4</sup> HARI KE - 6 B4C1 10<sup>-5</sup> 10<sup>-6</sup></p>	
<p>Natrium bisulfit 200 ppm+ <i>edible coating CMC 1%</i></p>	

## d. Hari ke-9

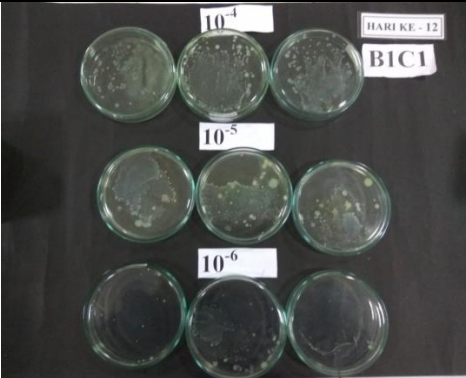
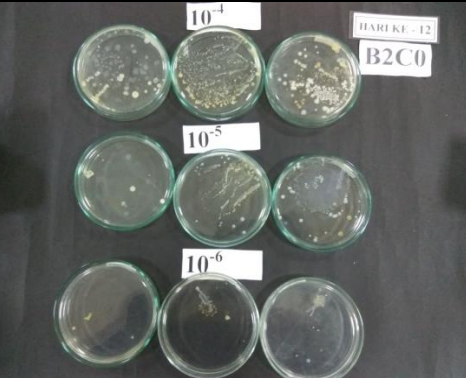
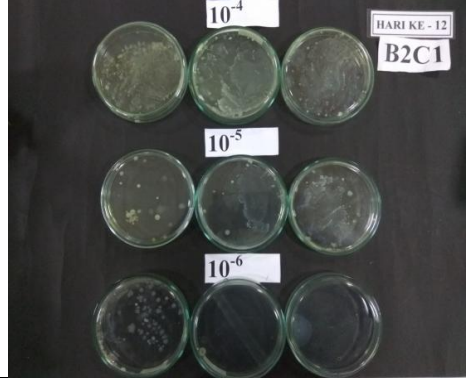
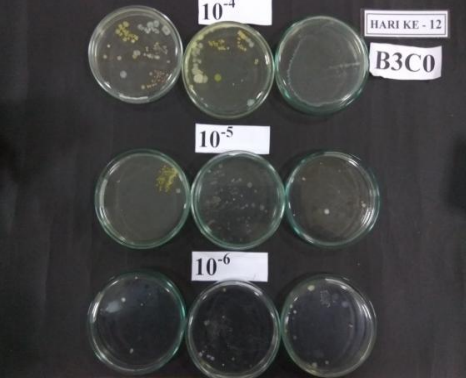
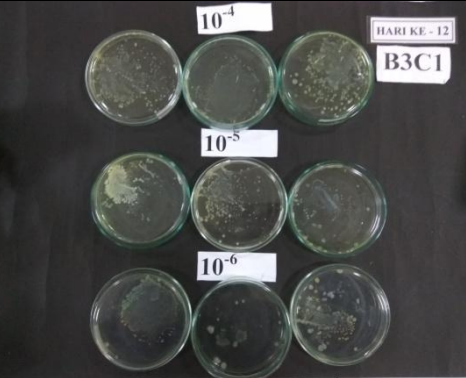
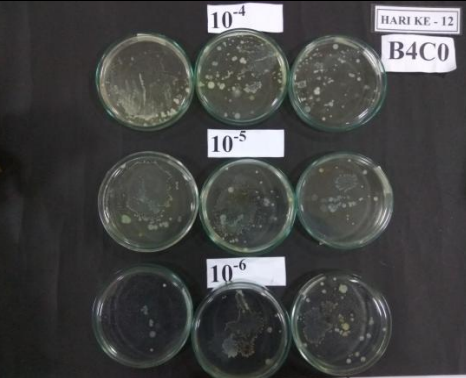


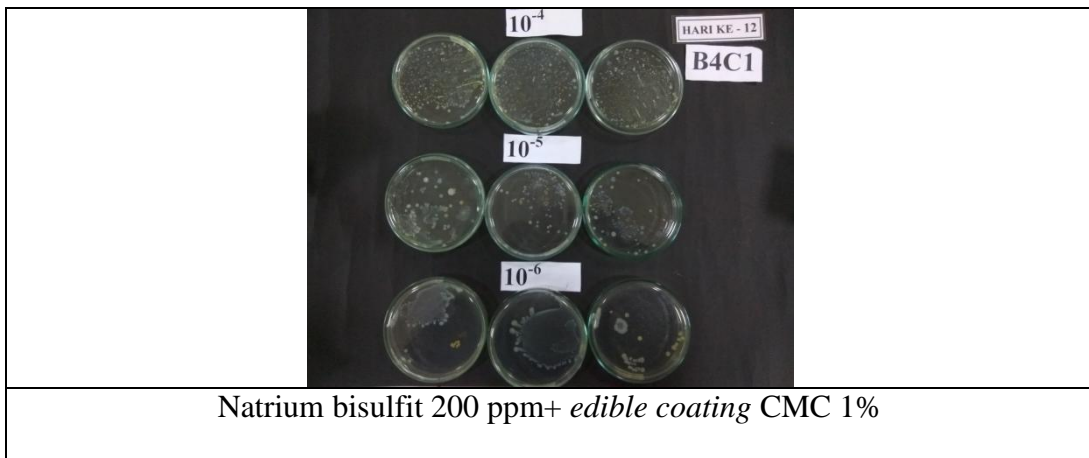
	
<p>Natrium bisulfit 150 ppm+ <i>edible coating</i> CMC 1%</p>	<p>Natrium bisulfit 200 ppm+ <i>tanpa edible coating</i> CMC 1%</p>
	
<p>Natrium bisulfit 200 ppm+ <i>edible coating</i> CMC 1%</p>	

e. Hari ke-12

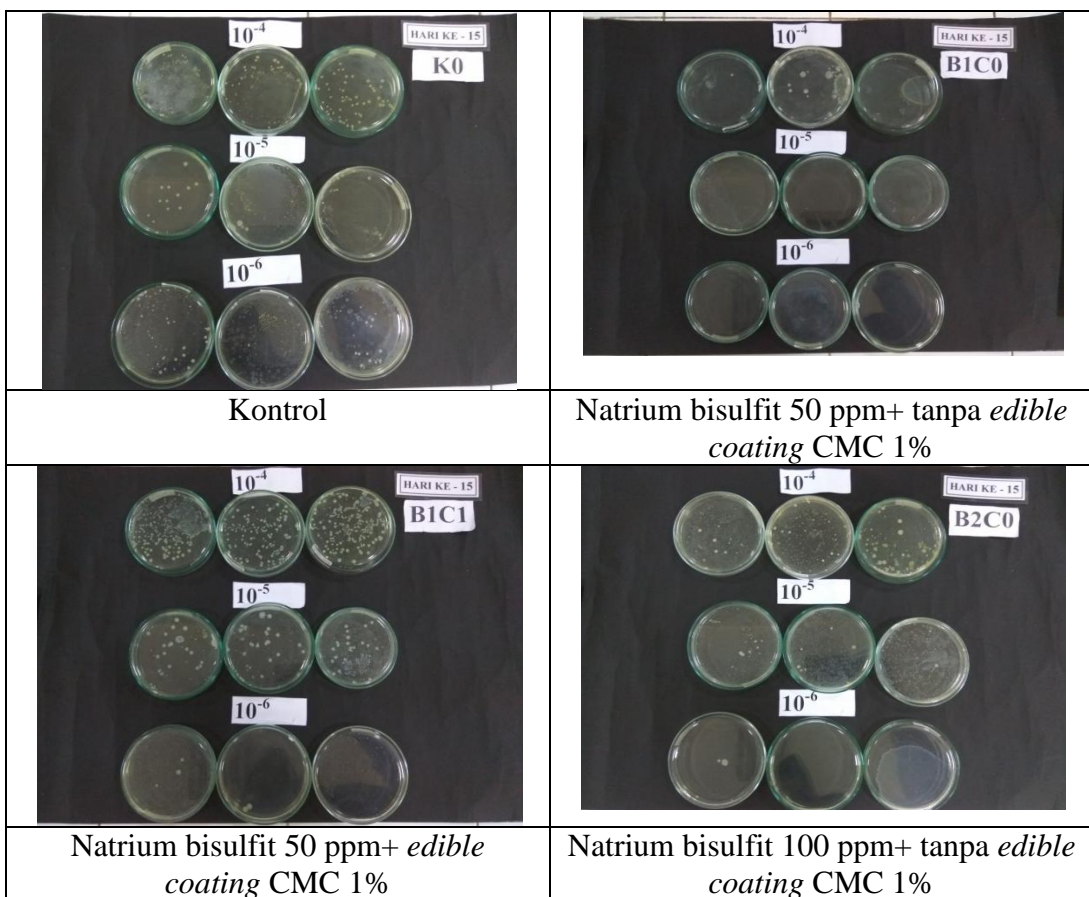
	
<p>Kontrol</p>	<p>Natrium bisulfit 50 ppm+ <i>tanpa edible coating</i> CMC 1%</p>



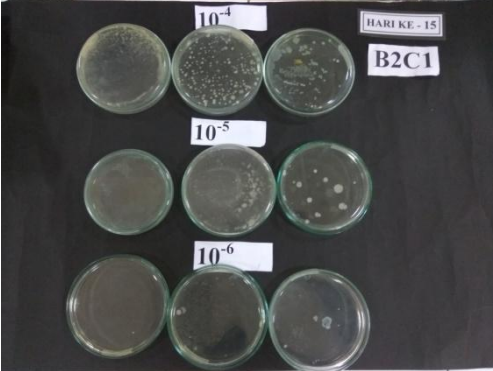
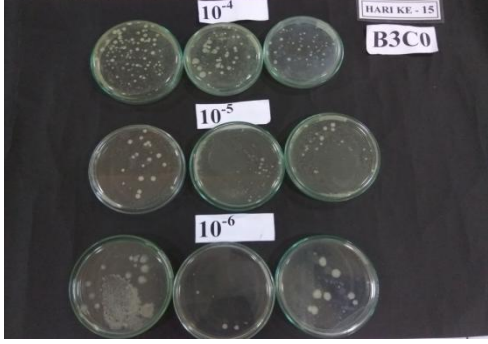
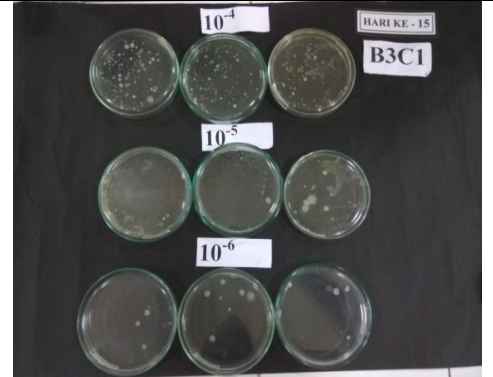
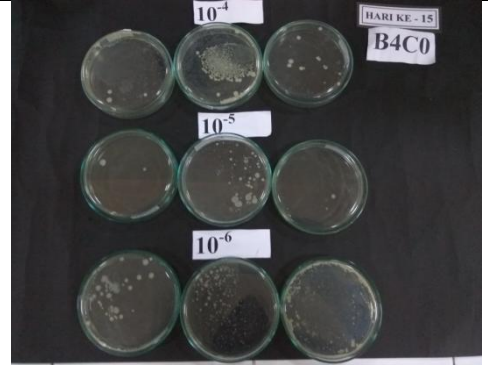
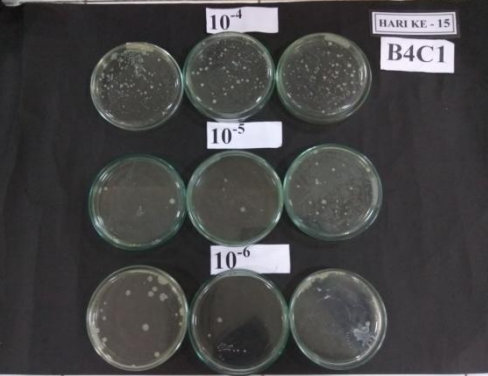
 <p>10<sup>-4</sup> HARI KE - 12 B1C1</p> <p>10<sup>-5</sup></p> <p>10<sup>-6</sup></p>	 <p>10<sup>-4</sup> HARI KE - 12 B2C0</p> <p>10<sup>-5</sup></p> <p>10<sup>-6</sup></p>
<p>Natrium bisulfit 50 ppm+ <i>edible coating</i> CMC 1%</p>	<p>Natrium bisulfit 100 ppm+ tanpa <i>edible coating</i> CMC 1%</p>
 <p>10<sup>-4</sup> HARI KE - 12 B2C1</p> <p>10<sup>-5</sup></p> <p>10<sup>-6</sup></p>	 <p>10<sup>-4</sup> HARI KE - 12 B3C0</p> <p>10<sup>-5</sup></p> <p>10<sup>-6</sup></p>
<p>Natrium bisulfit 100 ppm+ <i>edible coating</i> CMC 1%</p>	<p>Natrium bisulfit 150 ppm+ tanpa <i>edible coating</i> CMC 1%</p>
 <p>10<sup>-4</sup> HARI KE - 12 B3C1</p> <p>10<sup>-5</sup></p> <p>10<sup>-6</sup></p>	 <p>10<sup>-4</sup> HARI KE - 12 B4C0</p> <p>10<sup>-5</sup></p> <p>10<sup>-6</sup></p>
<p>Natrium bisulfit 150 ppm+ <i>edible coating</i> CMC 1%</p>	<p>Natrium bisulfit 200 ppm+ tanpa <i>edible coating</i> CMC 1%</p>



f. Hari ke 15





 <p>10<sup>-4</sup> HARI KE - 15 B2C1 10<sup>-5</sup> 10<sup>-6</sup></p>	 <p>10<sup>-4</sup> HARI KE - 15 B3C0 10<sup>-5</sup> 10<sup>-6</sup></p>
<p>Natrium bisulfit 100 ppm+ <i>edible coating CMC 1%</i></p>	<p>Natrium bisulfit 150 ppm+ tanpa <i>edible coating CMC 1%</i></p>
 <p>10<sup>-4</sup> HARI KE - 15 B3C1 10<sup>-5</sup> 10<sup>-6</sup></p>	 <p>10<sup>-4</sup> HARI KE - 15 B4C0 10<sup>-5</sup> 10<sup>-6</sup></p>
<p>Natrium bisulfit 150 ppm+ <i>edible coating CMC 1%</i></p>	<p>Natrium bisulfit 200 ppm+ tanpa <i>edible coating CMC 1%</i></p>
	 <p>10<sup>-4</sup> HARI KE - 15 B4C1 10<sup>-5</sup> 10<sup>-6</sup></p>
<p>Natrium bisulfit 200 ppm+ <i>edible coating CMC 1%</i></p>	