

SURVEI CONTAMINATION OF *Clostridium botulinum* AT SARDINES PRODUCT WHICH SOLD AT SOME TRADITIONAL MARKET IN SEMARANG

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Background and Objective

Clostridium botulinum in tinned food is the main of danger which causing botulinin. The purposes of the research are to know the total and existence of *Clostridium botulinum* on sardines product. The growth of microorganisms in food plays an important role in the formation of compounds that produce unpleasant odors and cause food to become improper to eat. Some microorganisms that contaminate food can cause danger to those who consume them. This condition is called food poisoning.



Clostridium botulinum

Research Methods

This research use the laboratory and survey method with cross sectional approach. The population of this research are all sardines product have sold at traditional market in Semarang. The main sample is the tin which have experinced of damage by cluster sampling method. There are 8 market from 48 market and the number of samples that meet the inclusion criteria of 31 sardines products. Data was analyzed by descriptive analysis and Chi Square test.

Result

The result of this research showed that there are 7 sardines products (22,6%) contain of *Clostridium botulinum*. From 7 sardines products, there are 5 samples have got 300.000.000/gram of *Clostridium botulinum*, one sample has got 900.000.000/gram of *Clostridium botulinum*.

| <i>Clostridium botulinum</i> | Frekuensi | Persentase (%) |
|------------------------------|-----------|----------------|
| positif | 7 | 22.6 |
| negatif | 24 | 77.4 |
| Total | 31 | 100.0 |

Laboratory Examination Results of the Existence of *Clostridium botulinum* on Canned Fish Sold in Traditional Markets in the City of Semarang in 2008

| Jumlah <i>Clostridium botulinum</i> (juta/gram sampel) | Frekuensi | Persentase (%) |
|--|-----------|----------------|
| 0 | 24 | 77.4 |
| 300 | 5 | 16.1 |
| 600 | 1 | 3.2 |
| 900 | 1 | 3.2 |
| Total | 31 | 100.0 |

Laboratory Examination Results Number of *Clostridium botulinum* in Canned Fish Sold at Traditional Markets in the City of Semarang in 2008

| Kondisi kaleng pada saat diambil | Keberadaan <i>Clostridium botulinum</i> | | | | Jumlah | |
|----------------------------------|---|------|---------|------|--------|-----|
| | Positif | | Negatif | | f | % |
| | f | % | f | % | f | % |
| Berkarat banyak | 6 | 30 | 14 | 70 | 20 | 100 |
| Berkarat bocor | 1 | 100 | 0 | 0 | 1 | 100 |
| Berkarat sedikit | 0 | 0 | 10 | 100 | 10 | 100 |
| Jumlah | 7 | 22,6 | 24 | 77,4 | 31 | 100 |

The Relationship of Canned Conditions When Taken With the Existence of *Clostridium botulinum* on Canned Fish Sold in Traditional Markets in the City of Semarang in 2008

Conclusions

The conclusion of this study is a relation between condition of fish can ($p=0,031$), pH ($p=0,002$), the temperature of storage ($p=0,008$) with the contamination of *Clostridium botulinum*. There is not a relation between the method and condition of storage ($p=1,000$), condition of seilling environment ($p=0,412$), expired status ($p=0,077$) with the existence of *Clostridium botulinum*. Therefore, suggested to improve control of the tinned food at traditional market.