

Study of Salmonella Spread Spin Food from Plant Origin in the Market

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Abstract

Fresh food from plants (PSAT) is fresh food consumed directly or after experiencing minimal processing. Therefore PSAT to be consumed must be safe from aspects of microbial contamination and physical chemical contamination. There are several types of pathogenic microbes, which can contaminate PSAT and can cause disease disorders. One microbe, which includes pathogenic microbes and potentially contaminates PSAT, is Salmonella sp. Salmonella sp microbes are pathogenic to society in general. Some health problems caused by PSAT contaminated with Salmonella sp, disorders of the digestive tract, in the form of diarrhea, or typhus. Land and water used in the cultivation process and handling of it contaminated with salmonella sp.

To know the prevalence of Salmonella sp in PSAT, a study was carried out, by taking samples at locations, and selected commodities. The locations chosen are West Java, Banten and DKI Jakarta in two traditional markets in each province. While the selected commodities are bean sprouts, tomatoes and cabbage. Sampling was carried out by random method, with the population in accordance with the number of vegetable traders in that location. Testing of samples for Listeria monocytogenes contamination is carried out in accredited laboratories.

From the results of testing of 300 (three hundred) samples, consisting of 100 samples of bean sprouts, 100 samples of tomatoes, and 100 samples of cabbage, 4 samples of bean sprouts (or 4%) were stated to be positively contaminated with Salmonella sp. 3 samples of cabbage (3%) were positive for salmonella contamination. In other words, Salmonella sp contamination is found in 4 sample bean sprouts from 100 samples, pollution also occurs in 2 tomato samples from 100 samples and occurs in 3 samples of cabbage from 100 samples.

Study Method

The method used in the assessment of Salmonella sp contamination in PSAT, is to determine the location and method of sampling, determine the type of selected commodity for example, establish an accredited test laboratory to carry out testing and evaluate the results of the study.

Taking into account financial support, three selected provinces were chosen to take samples. The provinces include: DKI Jakarta province, West Java province and Banten province. In DKI Jakarta province, there are 2 municipalities with the highest population, namely the southern Jakarta municipalities (PasarMinggu and PasarKebayoran Lama) and East Jakarta municipalities (Kramatjati Market and Klemder Market). West Java Province, determined by 2 municipalities or regencies, namely Bogor (Bogor market and Anyar market) and Bandung Regency (Lembang market and caringin market). Banten Province, selected Tangerang Regency (Serpong Market and High Land) and Serang District (Attack Market and New Market).

The number of samples taken, according to the method that has been set, and in accordance with the population specified.

The sample that has been taken, is taken with cold rabsai (with ice box equipped with blue ice) to guarantee the freshness and condition and then sent to Angler's laboratory, by courier pickup.

At the time of sampling, completed with questionnaire data, to gather information about the origin; the proposed PSAT is taken as an example

Result and Discussion

Of the 300 test samples, which were tested and consisted of, 100 samples of bean sprouts, 100 samples of cabbage and 100 samples of tomatoes, found 4 samples of bean sprouts (or 4%), 3 samples of cabbage (3%), and 2 samples of tomatoes (2%) positive salmonella?

Based on data obtained from the questionnaire at the time of sampling, all samples of PSAT found to be positively contaminated

with *Salmonella* sp, were obtained by traditional market traders from intermediary traders or traders. Whereas the data on the origin of PSAT cannot be traced, considering that until now the distribution of PSAT, especially those in traditional markets, has not implemented a traceability system.

Besides that, most collector traders have not implemented a good post-harvest handling method, so the potential for *Salmonella* sp pollution is very high. By not implementing Good Handling Practices, several requirements that can avoid food from pathogenic microbial contamination cannot be fulfilled. Some basic requirements for GHP that can prevent the occurrence of *Salmonella* sp contamination include.

- Requirements for using water for handling products, water used must be water that has Potable Water quality standards.
- Personnel who come into contact with PSAT are not allowed to touch food when they are sick, or after getting sick during leave.
- Personnel who work in conjunction with PSAT must wear special clothing, headgear, masks and do not use jewelry when working.
- Fresh Produce must be transported in a vehicle that has a temperature controller, because fresh produce must be transported in a vehicle with a temperature of 4-10 degrees Celsius, so that pathogenic microbes will not multiply.

Besides Fresh produce source that does not meet the requirements, the positive test results are also supported by handling commodities in the merchant, before being sold, and storing the product, when the PSAT is not selling. For bean sprouts, most traders store PSAT in a place and put it under the table. Whereas the traders of cabbage and tomatoes keep back the PSAT which is not buried in the sack again, on the other hand the condition of the sack is not clean. Inadequate storage conditions are factors that accelerate the growth of *salmonella* sp. especially for bean sprouts.

The physiological form of bean sprouts that are bent and angled become a very good place for microbial growth of *Salmonella* sp. the growth of *Salmonella* spin bean sprouts will be faster, if the water used to wash bean sprouts has been contaminated with *Salmonella* sp [1-10].

Conclusion

Of the 300 examples of fresh food consisting of 100 samples of bean sprouts, 100 samples of tomatoes and 100 samples of cabbage, 4 samples of bean sprouts (4%) were obtained, 3 samples of cabbage (3%) 2 samples of tomatoes (2%) exposed to microbial contamination of *salmonella* sp.

The example above was taken from 12 traditional markets located in West Java province (Bogor City and Lembang Regency), DKI Jakarta province (South Jakarta and East Jakarta) and Banten province (Serang district and Tangerang Regency).

Follow up Suggestion

With the prevalence of 4% *salmonella* sp contamination in bean sprout commodities, 3% in cabbage commodities and 2% in tomato commodities sold in traditional markets, some follow-up needs to be done to ensure PSAT is free from *Salmonella* sp. from *salmonella* contamination.

The recommended follow-up are:

1. Fostering the application of Good Handling Practices to intermediate traders / traders or container houses.
2. Guidance on the application of Good Distribution Practices in the process of transporting PSAT from collector / between home containers to the retail market.
3. Fostering the application of Good retail practices (GRP) to retail traders, especially traders in traditional markets.

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