

PROCENA LIMITA DETEKCIJE *SALMONELLA* SPP. U VEŠTAČKO KONTAMINIRANOJ U PILEĆOJ PAŠTETI

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Sažetak. Salmoneloza je bolest koju izaziva bakterija salmonela. Uobičajeni simptomi infekcije salmonelom su dijareja, groznica, grčevi u stomaku, groznica, glavobolja, mučnina ili povraćanje. Ovi simptomi se obično javljaju nakon konzumiranja kontaminirane hrane. Efikasna izolacija salmonele iz hrane omogućava preventivno djelovanje ili identifikaciju uzročnika bolesti. Cilj ove studije bio je da odredi granice detekcije *Salmonella* spp. u vještački kontaminiranim uzorcima pileće paštete. Za kontaminaciju je korišćena bakterijska suspenzija *Salmonella enterica* subsp. *enterica* serovar Paratyphi B (ATCC 8759). Detekcija *Salmonella* spp. provedena je prema SRPS EN ISO 6579-1:2017, uključujući tri selektivna bujona za bogaćenje (Muller Kauffmann tetracionat-novobiocin bujon, Rappaport-Vassiliadis bujon, selenit cistein bujon) i tri čvrste podloge za izolaciju (salmonela šigela agar, ksiloza lizin dezoskiholatni agar, bizmut sulfitni agar). Pripremljene su četiri koncentracije bakterijske suspenzije i uzorci pileće paštete su kontaminirani na četiri nivoa. Testirano je pet uzoraka koji nisu kontaminirani, ako nulti nivo kontaminacije. Broj pozitivnih nalaza salmonella i ukupan broj uzoraka po inokulacionom nivou obrađeni su u PODLOD_ver12.xls ECEL programu od Wirlich i Wilrich. Ovim programom se procenjuje funkcija vjerovatnoća detekcije (POD) i limit detekcije (LOD) kvalitativnih mikrobioloških metoda. Rezultati detekcije *Salmonella* spp. pokazali su LOD_{50%} 0.028 [0.017; 0.047] CFU u 1 g, i LOD_{95%} 0.122 [0.074; 0.202] CFU u 1 g. Rezultati detekcije *Salmonella* spp. izraženi po testiranoj porciji su za LOD_{50%} 0.706 [0.426; 1.171] CFU u 25 g, i za LOD_{95%} 3.051 [1.839; 5.062] u 25 g. Kombinacija primjenjenih selektivnih bujona za bogaćenje i čvrstih podloga za izolaciju nije pokazala razliku u rezultatima detekcije.

Ključne riječi: limit detekcije, mikrobiološko ispitivanje, pileća pašteta, *Salmonella* spp.

ESTIMATION OF THE LIMIT OF DETECTION OF *SALMONELLA* SPP. IN ARTIFICIALLY CONTAMINATED CHICKEN PASTE

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Abstract. Salmonellosis is the illness caused by the *Salmonella* bacteria. The usual symptoms of salmonella infections are diarrhoea, fever, abdominal cramps, chills, headache, nausea or vomiting. These symptoms typically appear after consuming contaminated food. Effective isolation of *Salmonella* from the food enables preventive action or the identification of the causative agent of the disease. This study aimed to determine the limit of detection of *Salmonellae* spp. in artificially contaminated samples of chicken paste. For contamination, a bacterial suspension of *Salmonella enterica* subsp. *enterica* serovar *Paratyphi* B (ATCC 8759) was used. The detection of *Salmonella* spp. performed following SRPS EN ISO 6579-1:2017, including three selective enrichment broths (Muller Kauffmann Tetrathionate-Novobiocin broth, Rappaport-Vassiliadis broth, Selenite Cystine broth) and three solid media for isolation (*Salmonella Shigella* agar, Xylose Lysine Desoxycholate agar, Bismut Sulfite agar). The four concentrations of bacterial suspension were prepared, and a samples of chicken pasta were artificially contaminated at four levels. Five of the samples were tested with no previous contamination, as the zero level of contamination. The number of positive findings of salmonellae and the total number of samples per inoculation level were used for calculation by the PODLOD_ver12.xls ECEL program by Wirlich and Wilrich. This program estimates the probability of detection (POD) function and the limit of detection (LOD) of qualitative microbiological methods. The results of the detection of *Salmonella* spp. showed a LOD_{50%} 0.028 [0.017; 0.047] CFU in 1 g, and LOD_{95%} 0.122 [0.074; 0.202] CFU in 1 g. The results of the detection of *Salmonella* spp. expressed per tested tested portion were LOD_{50%} 0.706 [0.426; 1.171] CFU in 25 g, and LOD_{95%} was 3.051 [1.839; 5.062] in 25 g. The combinations of applied enrichment broths and solid media for isolation did not show a difference in the results of detection.

Key words: chicken pasta, limit of detection, microbiological analysis, *Salmonella* spp.