



UTILIZATION OF DRIED PARSLEY LEAVES (*PETROSELINUM CRISPUM*) AND THEIR ESSENTIAL OIL FOR EXTENDING SHELF LIFE OF BEEF BURGER

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ABSTRACT

In an attempt to raise the quality and extend shelf life of beef burger, parsley powder or its essential oil were added to the formula. Three different formulas of beef burgers were prepared. The first one was formulated with 0.5% dried parsley herb, the second formulated with 600ppm of parsley essential oil, and 3rd was free from additions (control). The results showed that the initial pH value of control beef burgers (C) and samples treated with parsley powder or oil (P or O) was the same (5.8), but, after 8 days of storage at 4°C, the pH value significantly increased in all samples. The highest increase was recorded for sample (C), while sample (O) had the lowest increase. As for the TBA values, the data showed that addition of parsley oil to burger formula (O) significantly ($P \leq 0.05$) lowered the TBA value than control sample (C) at zero time of storage. The lowest significant increase in TBA value of all treatments, after 8 days of storage at 4°C, was recorded for (O) sample. The results also indicated that beef burger sample (O), at zero time, had the highest significant cooking loss and the lowest cooking yield than other burger samples. Simultaneously, beef burger sample (P) had the significant lower cooking loss and the higher cooking yield than other beef burger samples. After cold storage of all burger samples at 4°C for 8 days, cooking loss values of all burger treatments were significantly increased. Control sample (C) had the highest significant increase in cooking loss. At the same time, burger sample (P) had the significantly higher cooking yield than other burger samples at the end of storage period. Moreover, beef burgers containing parsley oil or parsley powder have extended the lag phase period to 4 days while control samples have lower lag phase period 2 days for total Bacterial Count (TBC) and total Psychrotrophic bacterial Count. Same data indicated that parsley oil has the highest inhibitory effect against TBC and psychrotrophs count at zero time and till the end of cold storage. Meanwhile, parsley powder recorded a lower inhibitory activity than parsley oils against TBC and psychrotrophs count at zero time and till the end of storage. The results also observed that the total of the three color spectral readings L^* , a^* and b^* values of fresh beef burger are affected by formulation with parsley essential oil or powder. Sensory evaluation showed that beef burger formulated immediately with parsley oil was superior in all quality attributes compared to samples formulated with or without powdered parsley. All recorded sensory score characteristics of control samples, at the 8th days, were rejected. While samples formulated with parsley oil or powder were acceptable till the 8th day, with obvious superiority of beef burger formulated with parsley oil.