REPLACEMENT OF SODIUM NITRITE BY CELERY EXTRACT AND STARTER CULTURE IN LOW COST FRANKFURTER: EFFECT ON LIPID OXIDATION STABILITY AND COLOR

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Despite the essential properties of sodium nitrite, this additive receives critical regarding to toxicological issues when its addition is upper than that established by legislation. Plant extracts naturally rich in nitrate have been applied in many cured meat products because it is possible to reduce nitrate in nitrite preserving the functions color development, safety and antioxidant properties, a process known as natural cure. The objective of this study was to evaluate the stability to lipid oxidation and the color attributes of frankfurters with reduced sodium nitrite. Four treatments were elaborated: FC (150ppm sodium nitrite), F1 (37,5ppm sodium nitrite + 0,35% of celery extract + 0,025% culture Bactoferm CS300), F2 (75ppm sodium nitrite + 0,35% celery extract + 0,025% Bactoferm culture CS300), F3 (112,5ppm sodium nitrite + 0,35% celery extract + 0,025% CS300 Bactoferm culture). The analysis of color (L*, a*, b*) and the contents of TBARS (malonaldehede/1000 mg sample) were evaluated at 0, 15, 30, 45 and 60 days storage. The F1 treatment had higher TBARS values at 0, 15, 45 and 60 days storage compared to control formulation, indicating the low levels of nitrite reduction cannot avoid lipid oxidation. Regarding the color index, F1 treatment (37,5ppm sodium nitrite) presented lowest a* values (p<0,05) along 60 days. There were no difference for L* and b* parameters among all formulations.(p<0,05). The partial replacement of sodium nitrite in low cost sausage by celery extract requires further investigation for the contents of oxidized lipids, but did not affect significantly the color parameters.