

**Title** Development of an antioxidant coating to extend shelf-life of brown rice (*Oryza sativa*)  
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### Abstract

**Introduction:** Brown rice, despite being more nutritious than the polished one, has a low consumption mainly due to its low stability and unpleasant flavor. The main deteriorating mechanism of brown rice and dried cereals is the oxidation of lipids due to its content of unsaturated fatty acids like oleic (40%), linoleic (35%) and linolenic (1-2%). The purpose of this work was to develop a coating of carboxymethylcellulose (CMC) and spices (onion (*Allium cepa* L.), turmeric (*Curcuma longa*), garlic (*Allium sativum*), oregano (*Origanum vulgare*), sweet pepper (*Capsicum anum*), black pepper (*Piper nigrum*)), as antioxidants, aiming to improve the flavor and stability of brown rice. **Materials and Methods:** In order to do this, several formulations of the coating were made and sensory evaluations were carried out to select the best formula, to which and acceptability test with 100 consumers was performed later. Subsequently, the shelf life of coated and uncoated brown rice was determined at 4 temperatures (25, 35, 45 and 55°C), measuring the rancidity with the Thiobarbituric acid (TBA) method for 12 weeks. **Results and Discussion:** The formula selected had an acceptability higher than 70% and the shelf-life was of 7 months at an average storage temperature of 28°C, indicating that the shelf-life of brown rice was extended in 350%. In conclusion, brown rice with an edible coating as a flavor agent and with antioxidant properties was obtained.