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Antioxidant Treatment in Whole and Partitioned Coffee Seeds.

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Coffee seed quality is influenced by various factors, such as the post-harvest operations of hulling, storage, and drying. Recent studies have confirmed that the endosperm is more sensitive to the deterioration process than the embryo, and that the embryo can germinate and generate a normal seedling when isolated from a deteriorated seed. The use of antioxidants can improve the performance of seeds subjected to stresses, through removal of free radicals present in deteriorated seeds. Thus, the aim of this study was to evaluate antioxidant treatments in whole seeds and in seeds with part of the endosperm removed. We used seed lots of *Coffea arabica* L., cultivar Catuai amarelo IAC 62, with different levels of seed quality; the seed lots were obtained from newly-harvested seeds and from seeds subjected to accelerated aging. Whole seeds and partitioned seeds were immersed in cathode water, ascorbic acid, and distilled water, and one part was evaluated without imbibition. The germination test was performed, which evaluated the percentage of radicle protrusion, normal seedlings, strong normal seedlings, and seedlings with expanded cotyledon leaves. Partitioned seeds exhibit lower quality than whole seeds for all the variables analyzed, regardless of the level of quality and of the antioxidant treatment. Seeds with a higher level of quality do not show significant effects from the antioxidant treatment and from removal of the endosperm. Partitioned seeds and lower quality seeds show better results when immersed in cathode water or in ascorbic acid. Ascorbic acid and cathode water have antioxidant activity in coffee seeds when used in seeds with a high level of deterioration.

Key words: *Endosperm, Embryo, Cathode Water, Ascorbic acid.*

References

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