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## The "Breme" red onion: effects of home-storage methods on quercetin and quercetin-glycoside contents

E. Dozio, A. Barassi, A. Ravelli, I. Angeli, F. Lodi, G.V. Melzi d'Eril, M.M. Corsi Romanelli

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The "Breme" onion is a red-skinned cultivar growing in the northwest Italy. To date, its nutrient composition has not been described. In this study, we quantified the contents of quercetin (Q) and its glycosides and we studied their stability in the dependence on the local home-storage methods storage at 4°C and freezing. Quercetin-3,4'-O-diglycoside (3,4'-Qdg) was the most abundant form, followed by quercetin-4'-O-diglycoside (4'-Qmg) and Q. We observed the reduction in the contents of all the analysed flavonols after storage at 4°C and after storage in frozen state. No changes have been observed in the ratio Q/3,4'-Qdg + 4'-Qmg, as well as in 3,4'-Qdg /4'-Qmg between the fresh, stored at 4°C, and frozen onions. This could suggest an overall condition of instability, not the activation of a selective deglycosylation pathway. In conclusion, our study shows that the "Breme" onion is mainly rich in 3,4'-Qdg and that home-storage methods do not preserve the stability of some important health-promoting molecules.

### Keywords:

Breme onion; home-storage methods; HPLC-MS/MS; quercetin; quercetin glycosides

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