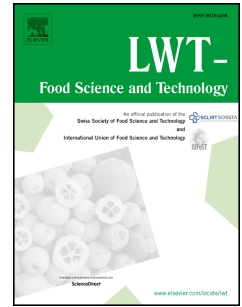


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Microstructure and bioaccessibility of different carotenoid species as affected by hot air drying: Study on carrot, sweet potato, yellow bell pepper and broccoli

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1 **Microstructure and bioaccessibility of different carotenoid species as**
2 **affected by hot air drying: study on carrot, sweet potato, yellow bell**
3 **pepper and broccoli**

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11 **Abstract:**

12 Carotenoids are widely distributed in fruits and vegetables. However, their bioactivity
13 depends on their release and intestinal uptake. Food matrix changes due to processing
14 seem of critical importance to understand the effect of food processing on carotenoid
15 bioaccessibility and bioavailability. Based on the observation of outstanding
16 dissimilarities of the morphology of pigment-containing chromoplasts in carotenoid
17 sources, the bioaccessibility of carotenoids from edible portions of carrot, sweet
18 potato, yellow bell pepper and broccoli was compared during hot air drying (HAD) in
19 present study. The natural structural barriers and the other factor interact to govern the
20 carotenoid bioaccessibility upon HAD. HAD resulted in cell wall disruption and
21 induced an anticipated enhancement of carotenoid release in carrot and yellow bell
22 pepper. Starch granules might be playing an important role in limiting carotenoid

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