Multispectral imaging has been evaluated for characterization of the concentration of a specific carotenoid pigment; astaxanthin. 59 fillets of rainbow trout, Oncorhynchus mykiss, were filleted and imaged using a rapid multispectral imaging device for quantitative analysis. The multispectral imaging device captures reflection properties in 19 distinct wavelength bands, prior to determination of the true concentration of astaxanthin. The samples ranged from 0.20 to 4.34 μg per g fish. A PLSR model was calibrated to predict astaxanthin concentration from novel images, and showed good results with a RMSEP of 0.27. For comparison a similar model were built for normal color images, which yielded a RMSEP of 0.45. The acquisition speed of the multispectral imaging system and the accuracy of the PLSR model obtained suggest this method as a promising technique for rapid in-line estimation of astaxanthin concentration in rainbow trout fillets.

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