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Data Article

Dataset on absorption spectra and bulb concentration of phenolic compounds that may interfere with onion pyruvate determinations

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ABSTRACT

We present data on absorption spectra (400–540 nm) and concentration of phenolic compounds quercetin, myricetin, kaempferol, rutin, catechin, epicatechin gallate (ECG) and epigallocatechin gallate (EGCG), in yellow, red and white onions. These data are related to the article entitled "Variability in spectrophotometric pyruvate analyses for predicting onion pungency and nutraceutical value" (Beretta et al., 2017) [1]. Given the relevance of pyruvate determinations for estimating onion pungency and functional value, it is important to identify compounds that can interfere with pyruvate determinations when using two previously published analytical procedures, namely Schwimmer and Weston (1961) (SW) [2] and Anthon and Barret (2002) (AB) [3], which are based on spectrophotometry and light-absorbance at 420 nm and 515 nm, respectively. The data presented in this article are absorption spectra for 7 onion phenolic compounds in the range 400–540 nm, which include wavelengths used by the two

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pyruvate analytical methods (Schwimmer and Weston, 1961; Anthon and Barret, 2002) [2,3] that were compared in our reference article (Beretta et al., 2017) [1]. Additionally, bulb content data for these 7 phenolic compounds in onion cultivars and F2 progenies with different bulb color were included to allow further analyses.

Specifications Table

Subject area	*Biology*
More specific subject area	*Plant sciences, food chemistry*
Type of data	*Figure, graph*
How data was acquired	*High Performance Liquid Chromatography (HPLC)*
Data format	*Processed, analyzed*
Experimental factors	*Aqueous onion extracts were directly analyzed by HPLC. For quercetin and kaempferol, chemical hydrolysis was performed prior to the analysis.*
Experimental features	*Pure standards of seven phenolic compounds commonly found in onion [quercetin, myricetin, kaempferol, rutin, catechin, epicatechin gallate (ECG), and epigallocatechin gallate (ECGC)] were analyzed by HPLC. Absorption spectra in the range 400–540 nm and bulb contents for these seven phenolic compounds were determined in onions with different bulb color.*
Data source location	*INTA La Consulta, San Carlos, Mendoza, Argentina*
Data accessibility	*Data are within this article*

Value of the data

- The dataset is valuable for the identification of phenolic compounds that may interfere with onion pyruvate determinations when using the spectrophotometry-based methods of Schwimmer and Weston [2] and Anthon and Barret [3].
- Characterization of onion germplasm based on their content of seven phenolic compounds; useful for onion breeders and food technologists.
- The dataset can serve to compare flavonoids content among onion germplasm from different geographical origins.

1. Data

Fig. 1 reports light absorption spectra in the range 400–540 nm for 7 standard phenolic compounds [quercetin, myricetin, kaempferol, rutin, catechin, epicatechin gallate (ECG) and epigallocatechin gallate (EGCG)], as possible interfering compound in onion pyruvate determinations by SW and AB methods (see Beretta et al., 2017 [1]), and indicates the wavelengths used in both pyruvate methods.

Fig. 2 presents data on the concentration of these 7 phenolic compounds in onion cultivars (A) and onion F_2 progenies (B) with different bulb color.