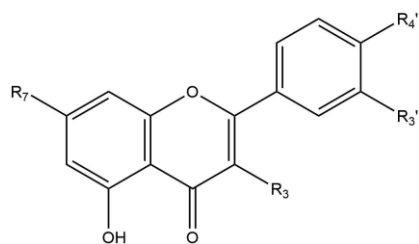


SUPPLEMENTARY MATERIAL



| Flavonol type | R3 | R7 | R3' | R4' |
|--|-------|-------|-------|-------|
| Quercetin 3- <i>O</i> -glucoside | O-Glu | OH | OH | OH |
| Quercetin 4'- <i>O</i> -glucoside | OH | OH | OH | O-Glu |
| Quercetin 3,4'- <i>O</i> -diglucoside | O-Glu | OH | OH | O-Glu |
| Quercetin 7,4'- <i>O</i> -diglucoside | OH | O-Glu | OH | O-Glu |
| Quercetin 3,7,4'- <i>O</i> -triglucoside | O-Glu | O-Glu | OH | O-Glu |
| Isorhamnetin 4'- <i>O</i> -glucoside | OH | OH | O-CH3 | O-Glu |
| Isorhamnetin 3,4'- <i>O</i> -diglucoside | O-Glu | OH | O-CH3 | O-Glu |

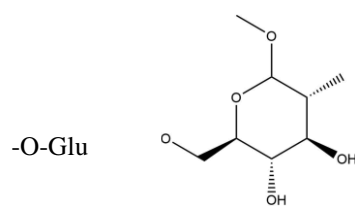


Figure S1. Structural types of analyzed flavonols.

Table S1. characteristics of the different onions studied.

| Onion variety | Origin | Supermarket | Format | Company | Caliber (mm) |
|----------------------|--|-------------|---|-----------------------|--------------|
| Spring white onion 1 | Spain | DÍA | Sold by mesh net bag 2 kg | La Gramola | 50/90 |
| Sweet white onion 2 | Chile | LIDL | Sold individually | - | - |
| Spring white onion 3 | Spain | Mercadona | Sold 3 by 3 | Tara | 65 |
| Sweet white onion 4 | Spain | Mercadona | Sold by mesh net bag 2 kg | Tara | 55 |
| Sweet white onion 5 | Spain | Carrefour | Sold in bulk | - | 70/100 |
| Sweet white onion 6 | Spain | Carrefour | Sold by mesh net bag 500 g | Ajos Malsamar S.L. | 60/80 |
| Yellow onion 1 | Spain (Valencia) | LIDL | Unit | - | - |
| Yellow onion 2 | Spain | Carrefour | Sold in bulk | - | 55/75 mm |
| Yellow onion 3 | Spain | Carrefour | Sold 3 by 3. Assortment of yellow, red and white | - | 60/80 |
| Red onion 1 | Spain | LIDL | Sold by mesh net bag 500 g | Linda | 50/70 mm |
| Red onion 2 | Austria | Mercadona | Sold by mesh net bag 500 g | Tara | 50/90 mm |
| Red onion 3 | Spain (Cuenca) | DÍA | Sold by mesh net bag 500 g | La Gramola | 50/70 mm |
| Red onion 4 | Spain (Castilla la Mancha/Valencia) | LIDL | Sold individually | - | - |

Table S2. Mass spectra information for the seven flavonols identified in onion bulbs by UHPLC-PDA-Q-ToF-MS in negative ESI mode.

| Peak number | Flavonols present in onion | Molecular formula | Maximum absorbance wavelength (nm) | Time of elution (min) | Theoretical mass [M-H] ⁻ (m/z) | Measured mass [M-H] ⁻ (m/z) |
|-------------|---------------------------------|---|------------------------------------|-----------------------|---|--|
| 1 | Quercetin 3,7,4'-O-triglucoside | C ₃₃ H ₄₀ O ₂₂ | 346.7 | 2.873 | 787.1433 | 787.1421 |
| 2 | Quercetin 7,4'-O-diglucoside | C ₂₇ H ₃₀ O ₁₇ | 371.8 | 4.507 | 625.1425 | 625.1396 |
| 3 | Quercetin 3,4'-O-diglucoside | C ₂₇ H ₃₀ O ₁₇ | 343.2 | 5.138 | 625.1410 | 625.1398 |
| 4 | Isorhamnetin 3,4'-O-diglucoside | C ₂₈ H ₃₂ O ₁₇ | 346.7 | 5.213 | 639.1566 | 639.1559 |
| 5 | Quercetin 3-O-glucoside | C ₂₁ H ₂₀ O ₁₂ | 346.7 | 5.341 | 463.0877 | 463.0886 |
| 6 | Quercetin 4'-O-glucoside | C ₂₁ H ₂₀ O ₁₂ | 362.3 | 5.487 | 463.0882 | 463.0873 |
| 7 | Isorhamnetin 4'-O-glucoside | C ₂₂ H ₂₂ O ₁₂ | 371.1 | 5.543 | 477.1038 | 477.1040 |