Spanish Black Radish (SBR; *Raphanus sativus* L. Var. niger) is a cruciferous vegetable associated with production of detoxification enzymes, healthy digestion, and healthy liver and gallbladder function. SBR is grown for its rich supply of glucosinolates, mainly glucoraphasatin and glucoraphanin. Eating SBR and other vegetables improves your food quality score (FQS).

**Phytoactives**

**Fiber**
Promote healthy cholesterol levels, promote cardiovascular health, support healthy bowel function

**Myrosinase**
Enzyme found in plant tissue that initiates conversion of glucosinolates to bioactive isothiocyanates

**Glucosinolates**
Sulfur-containing secondary metabolites mostly found in cruciferous vegetables, when activated by myrosinase from the plant or after ingestion by gut bacteria, associated with positive effects stemming from antioxidant activity such as cardio-protection and lipididation support

<table>
<thead>
<tr>
<th>Glucosinolate</th>
<th>Concentration (mg/g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucoraphasatin</td>
<td>11.835</td>
</tr>
<tr>
<td>Sinigrin</td>
<td>0.215</td>
</tr>
<tr>
<td>Glucobrassicin</td>
<td>0.2</td>
</tr>
<tr>
<td>Glucoraphanin</td>
<td>0.12</td>
</tr>
<tr>
<td>Glucobrassicin</td>
<td>0.082</td>
</tr>
<tr>
<td>Glucobrassicanapin</td>
<td>0.058</td>
</tr>
<tr>
<td>Glucoraphenin</td>
<td>0.004</td>
</tr>
<tr>
<td>Neoglucobrassicin</td>
<td>0.002</td>
</tr>
<tr>
<td>4-MeOH Glucobrassicin</td>
<td>0.002</td>
</tr>
</tbody>
</table>

**Tannins**
Large set of diverse phenolic compounds found in plants that contribute to antioxidative activity, antimicrobial action and distinct dark color

**Saponins**
Phytoactive compounds that support the immune system and promote healthy cholesterol and blood glucose levels

**What is the Whole Food Matrix?**

**Supports balance immune modulation for healthy inflammation response.**

**Supports the gut microbiome and a healthy metabolic fingerprint.**

**Benefits of nutritive food matrix enhances bioavailability by up to 60%.**

**Organic and adaptive regenerative farming techniques deliver nutrient dense crops of key phytonutrients and help balance healthy lifestyles.**

**Increased intake of vegetable and fruit in whole food nutrition influences individual epigenetic expression of our health potential.**
**Gallic Acid Equivalence**

**What is GAE?**

GAE, or “gallic acid equivalence,” indicates levels of important phytoactives available in the plant and extracts. GAE is derived by comparing to the gallic acid reference standard, a simple phenolic substance. Studies have shown that phytoactives in plants contribute to their beneficial effect on development of chronic diseases.

**Total Phenolic Concentration**

<table>
<thead>
<tr>
<th>Extract</th>
<th>Phenolic (mg/g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish Black Radish**</td>
<td>12.59</td>
</tr>
<tr>
<td>Ginger Root*</td>
<td>4.74</td>
</tr>
<tr>
<td>Raw Red Beet*</td>
<td>1.64</td>
</tr>
<tr>
<td>Potato*</td>
<td>0.70</td>
</tr>
<tr>
<td>Turnip Root*</td>
<td>0.58</td>
</tr>
<tr>
<td>Radish*</td>
<td>0.52</td>
</tr>
<tr>
<td>Carrot*</td>
<td>0.44</td>
</tr>
</tbody>
</table>

* Data is mean values from Phenol-Explorer Database 1
** Data on file with WholisticMatters
Values subject to change based on strain and experimental methods

**Key Nutrients**

**Copper**

Essential mineral required for proper usage of iron in the body, neurotransmissions, and maturation of connective tissues.

15%

**Fiber**

Promotes healthy cholesterol levels, promote cardiovascular health, support healthy bowel function.

6%

**Selenium**

Essential mineral involved in reproduction, thyroid hormone metabolism, DNA synthesis, and protection from oxidative damage.

4%

**Potassium**

Nurturing healthy blood pressure.

3%

**Folate**

An essential vitamin used in synthesis of DNA and RNA, amino acid metabolism, and prevention of neural tube defects.

3%

**Other Nutrients**

(Non order of %DV per 5.5g Spanish black radish)

- **Calcium**
- **Magnesium**
- **Folate**
- **Phosphorus**
- **Protein**
- **Potassium**
- **Zinc**
- **Selenium**
- **Choline**
- **Biotin (Vitamin B7)**
- **Zinc**
- **Lipids**
- **Pantothenic acid (Vitamin B5)**
- **Vitamin B6 (Pyridoxal 5'-phosphate)**

We are dedicated to advancing the latest insights and information available in nutrition therapy and clinical nutrition and to presenting only the most balanced, credible, and reliable clinical nutrition and science available.

References