



## DIETARY SUPPLEMENT FACT SHEET

<http://chppm-www.apgea.army.mil/dhpw/Wellness.aspx>

### Bitter Orange (*Citrus Aurantium*)

**Also known as:** Citrus Aurantium Amara, Citrus Bergamia, Citrus Bigaradia, Citrus Vulgaris

**Historical Perspective:** Bitter Orange is a plant that belongs to the Rutaceae Family. The peel, flower, leaf, and fruit are used in both traditional Chinese medicine and in modern medicine.

**Common Uses:** As a dietary supplement, bitter orange has been marketed to help relieve stomach upset, stimulate the appetite, assist with mild insomnia, and treat ringworm infections such as athletes foot and jock itch. Bitter orange fruit and peel are also commonly marketed as a weight loss remedy and a nasal decongestant. Topically, bitter orange peel is used for inflammation of the eyelid, skin bruising, and muscle pain. The Food and Drug Administration (FDA) has approved bitter orange (in small amounts) as a flavoring agent. In manufacturing, bitter orange is used in pharmaceuticals, cosmetics, and soaps.

**Form(s) Used:** Bitter orange is available as an oil, fruit, peel, or juice.

**Potential Side Effects:** Bitter orange is safe in the small amounts found in foods. **HOWEVER, bitter orange is not safe when used in high doses** due to the fact that it contains the stimulant called synephrine. Bitter orange, which contains synephrine and N-methyltyramine, can cause hypertension and cardiovascular toxicity. The adverse side effects of bitter orange can be exacerbated when used in combination with other stimulants such as caffeine, coffee, cola nut, ephedra, guarana, and mate. Frequent contact with bitter orange peel or oil can also cause adverse skin reactions, which include sensitivity to the sun, blisters, pigment spots, and others. The ingestion of large amounts of bitter orange peel in children can cause intestinal colic, convulsions, and even death.

**Food-Drug-Supplement Interactions:** Bitter orange interferes with many drugs. Bitter orange may INCREASE stomach acid, which might interfere with the effectiveness of acid lowering drugs. Some of these medications include:

- 1) **Antacid medications** – calcium carbonate (Tums), aluminum/magnesium hydroxide (Maalox), and others
- 2) **Ulcer medications** – sucralfate (Carafate) ranitidine (Zantac), omeprazole (Prilosec), and others. Bitter orange can also INCREASE THE SIDE EFFECTS of many other medications. Some of these medications include, but are not limited to the following:
  - 1) **Anti-anxiety medication** – Alprazolam (Xanax), and others
  - 2) **Blood pressure medications** – felodipine (Plendil), losartan (Cozaar), verapamil (Calan, Isoptin), and others
  - 3) **Cholesterol medications** – lovastatin (Mevacor), simvastatin (Zocor), and others
  - 4) **Decongestant medications** – phenylpropanolamine (Dura -Vent, Entex LA), pseudoephedrine (Sudafed), and others
  - 5) **Depression medications** – amitriptyline (Elavil), buspirone (Buspar), citalopram (Celexa), sertraline (Zoloft), phenelzine (Nardil), and others
  - 6) **Allergy medication** – fexofenadine (Allegra)
  - 7) **Fungal medications** – itraconazole (Sporonox), and ketoconazole (Nizoral)

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- 8) **HIV medications** – Saquinavir (Fortovase, Invirase), amprenavir (Agenerase), nelfinavir (Viracept), and others
- 9) **Sedation medication** – Midazolam (Versed)
- 10) **Anti-nausea medication** – Ondansetron (Zofran)
- 11) **Steroid medication** – Prednisone (Orasone)
- 12) **Weight loss medication** – Sibutramine (Meridia)
- 13) **Erectile dysfunction medication** – Sildenafil (Viagra)

**Contraindication to Use:** Children and pregnant or breastfeeding women should not use this herb. People with hypertension, tachyarrhythmia, or narrow-angle glaucoma should avoid bitter orange. The ingestion of large amounts of bitter orange peel in children can cause intestinal colic, convulsions, and even death.

**Research Data on Safety and Efficacy:** Bitter orange is possibly effective in relieving stomach upset because it can stop stomach spasms. It is also possibly effective in stimulating the appetite, relieving ringworm infections (such as athlete's foot), and relieving mild insomnia. There is **insufficient evidence** indicating bitter orange is effective in, 1) assisting with weight loss, 2) relieving nasal congestion, 3) reducing inflammation of the eye, 4) reducing inflammation of skeletal muscles. Bitter orange is likely safe when used orally in the small amounts found in foods. However, **bitter orange** is **unsafe** when used orally in **high doses**. Although widely used in over-the-counter weight loss supplements, bitter orange **has NOT been proven effective as a weight loss remedy**.

**Bottom-Line:** Given the increased potential for serious adverse reactions and herb-drug interactions, bitter orange is not recommended as an herbal remedy. The small amounts found in food have not been shown to be harmful, but larger amounts found in over-the-counter herbal supplements can be harmful. Before taking bitter orange, talk with a health care provider, registered dietitian, or pharmacist.

### References:

Natural Medicines Comprehensive Database, 4<sup>th</sup> Edition. Jeff M. Jellin, Pharm D. Therapeutic Research Facility, 2002.