

## HOPS

- Date:** February 12, 2008
- Proper name(s):** *Humulus lupulus* L. (Cannabaceae) (USDA 2006)
- Common name(s):** Hops (McGuffin et al. 2000; Bradley 1992)
- Source material(s):** Female inflorescence (strobile) (Mills and Bone 2005; Blumenthal et al. 2000; Bradley 1992)
- Route(s) of administration:** Oral
- Dosage form(s):** Those suited to the allowable routes of administration.  
This monograph is not intended to include food-like dosage forms such as bars, chewing gums or beverages.
- Use(s) or Purpose(s):** Statement(s) to the effect of:
- ▶ Traditionally used in Herbal Medicine to help relieve nervousness (sedative and/or calmative) (EMEA 2007; Mills and Bone 2005; ESCOP 2003; Hoffmann 2003; Blumenthal et al. 2000; Bradley 1992; Grieve 1971 [1931]).
  - ▶ Traditionally used in Herbal Medicine as a sleep aid (hypnotic) (EMEA 2007; Mills and Bone 2005; ESCOP 2003; Hoffmann 2003; Blumenthal et al. 2000; Bradley 1992; Felter and Lloyd 1983 [1898])
  - ▶ Traditionally used in Herbal Medicine as an aromatic bitter to aid digestion and to increase appetite (stomachic) (Mills and Bone 2005; Bradley 1992; Grieve 1971 [1931]).
- Dose(s):**
- Subpopulation:** Adults, adolescents, and children  $\geq$  12 years (EMEA 2007; ESCOP 2003)

**Quantity:** Preparations equivalent to 0.5-6 g dried strobile, per day (EMEA 2007; Mills and Bone 2005; ESCOP 2003; Hoffmann 2003; Blumenthal et al. 2000; Bradley 1992)

**Directions for use (for sleep aid):**

Take one dose before bed time (EMEA 2007; Hoffmann 2003; Bradley 1992)

See Appendix 1 for examples of appropriate dosage preparations, frequencies of use and directions for use according to cited references. The purpose of Appendix 1 is to provide guidance to industry.

**Duration of use:** No statement required.

**Risk information:** Statement(s) to the effect of:

**Caution(s) and warning(s):**

Sleep aid: Consult a health care practitioner if sleeplessness persists continuously for more than 3 weeks (chronic insomnia) (Berardi et al. 2002; Dipiro et al. 2002).

All uses:

- ▶ Consult a health care practitioner if symptoms persist or worsen.
- ▶ Consumption with alcohol, other medications and/or natural health products with sedative properties is not recommended (Brinker 2007).
- ▶ Consult a health care practitioner prior to use if you have depression and/or related diseases (Brinker 2001; McGuffin et al. 1997).
- ▶ Consult a health care practitioner prior to use if you are pregnant or breastfeeding (Barnes et al. 2007; Brinker 2007; Mills and Bone 2005).

**Contraindication(s):** No statement required.

**Known adverse reaction(s):** Some people may experience drowsiness. Exercise caution if operating heavy machinery, driving a motor vehicle or involved in activities requiring mental alertness (EMEA 2007).

**Non-medicinal ingredients:** Must be chosen from the current NHPD *List of Acceptable Non-medicinal Ingredients* and must meet the limitations outlined in the list.

**Specifications:**

- ▶ The finished product must comply with the minimum specifications outlined in the current NHPD *Compendium of Monographs*.
- ▶ The medicinal ingredient may comply with the specifications outlined in the Hop Strobile Monographs published in the European or British Pharmacopoeias.

**References cited:**

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Berardi RR, DeSimone EM, Newton GD, Oszko MA, Popovich NG, Rollins CJ, Shimp LA, Tietze KJ, editors. Handbook of Nonprescription Drugs: An Interactive Approach to Self-Care, 13<sup>th</sup> edition. Washington (DC): American Pharmaceutical Association; 2002.

Blumenthal M, Goldberg A, Brinkmann J, editors. Herbal Medicine: Expanded Commission E Monographs. Boston (MA): Integrative Medicine Communications; 2000.

Bradley PR, editor. British Herbal Compendium Vol. 1. Bournemouth (UK): British Herbal Medicine Association; 1992.

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Hoffmann D. Medical Herbalism. Rochester (VT): Healing Arts Press; 2003.

Mills S, Bone K. The Essential Guide to Herbal Safety. St. Louis (MO): Elsevier Churchill Livingstone; 2005.

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**Appendix 1:** Examples of appropriate dosage preparations, frequencies of use and directions for use

Dried strobile:

- ▶ 1.5-3 g, per day (Mills and Bone 2005)
- ▶ 0.5 g, per day (EMA 2007; Blumenthal et al. 2000)
- ▶ 0.5-1 g, 1 to 4 times per day (Bradley 1992)

**Directions for use:** Take one dose before bedtime (Bradley 1992)

Infusion:

- ▶ 0.5-2 g dried strobile, per day (EMA 2007)
- ▶ 1.5-3 g dried strobile, per day (Mills and Bone 2005)
- ▶ 0.5 g dried strobile, 2 to 4 times per day (ESCOP 2003)
- ▶ 0.5 g dried strobile, per day (Hoffmann 2003)
- ▶ 0.5 g cut or powdered strobile, per day (Blumenthal et al. 2000)
- ▶ 0.5-1 g dried strobile, 1 to 4 times per day (Bradley 1992)

**Directions for use:** Pour 250 ml (1 cup) of boiling water over dried strobile and infuse in a covered container for 10 to 15 minutes (Hoffmann 2003). A cup should be drunk before bedtime to induce sleep (EMA 2007; Hoffmann 2003; Bradley 1992).

0.5 g = 1 tsp (Hoffman 2003)

Fluidextract:

- ▶ 0.5-2 g dried equivalent, per day  
(1:1, 45% ethanol, 0.5-2 ml) (EMA 2007)
- ▶ 1.5-3 g dried equivalent, per day  
(1:1, 1.5-3 ml per day) (Mills and Bone 2005)
- ▶ 0.5-2 g dried equivalent, 1-3 times per day  
(1:1, 45% ethanol, 0.5-2 ml) (ESCOP 2003)
- ▶ 0.5 g dried equivalent, per day  
(1:1, 0.5 ml per day) (Blumenthal et al. 2000)
- ▶ 0.5-1 g dried equivalent, 1-4 times, per day  
(1:1, 45% ethanol, 0.5-1 ml) (Bradley 1992)

**Directions for use:** Take one dose before bedtime (Bradley 1992)

Tincture:

- ▶ 0.2-0.4 g dried equivalent, per day  
(1:5, 60% ethanol, 1-2 ml) (EMA 2007)
- ▶ 0.75-1.5 g dried equivalent, per day  
(1:2, 1.5-3 ml) (Mills and Bone 2005)
- ▶ 0.6-1.2 g dried equivalent, per day  
(1:5, 3-6 ml per day) (Mills and Bone 2005)
- ▶ 0.2-0.4 g dried equivalent, 1-3 times per day

- ▶ (1:5, 60% ethanol, 1-2 ml) (ESCOP 2003)  
0.2-0.8 g dried equivalent, 3 times per day
- ▶ (1:5, 40% alcohol, 1-4 ml) (Hoffmann 2003)  
0.5 g dried equivalent, per day
- ▶ (1:5, 2.5 ml per day) (Blumenthal et al. 2000)  
0.2-0.4 g dried equivalent, 1-4 times per day
- ▶ (1:5, 60% ethanol, 1-2 ml) (Bradley 1992)

**Directions for use:** Take one dose before bed time (Bradley 1992)

Solid extract:

0.36-0.64 g dried equivalent, per day  
(6-8:1, 60-80 mg) (Blumenthal et al. 2000)