



## CASTOR

### Also Known As:

African Coffee Tree, Arandi, Bofareira, Castorbean, Erand, Eranda, Gandharva Hasta, Mexico Weed, Palma Christi, Ricin, Tangantangan Oil Plant, Wonder Tree.

### Scientific Name:

Ricinus communis; Ricinus sanguines.  
Family: Euphorbiaceae.

### People Use This For:

Orally, castor seeds are used for birth control, constipation, leprosy, and syphilis. Castor oil is used orally as a stimulant laxative for constipation, to stimulate labor, and to promote the flow of breast milk.

Topically, castor seed paste is used as a poultice for inflammatory skin disorders, boils, carbuncles, abscesses, inflammation of the middle ear, and migraine headaches. Castor oil is used topically as an emollient and to dissolve cysts, growths, warts, for osteoarthritis, and to soften bunions and corns.

Intravaginally, castor oil is applied as a cervical abortifacient and vaginal contraceptive.

Ophthalmically, castor oil is used in the eyes to soothe the irritated conjunctiva after the presence of foreign bodies.

In manufacturing, castor seeds are used to make paints, varnishes, and lubricating oils.

### Safety:

**LIKELY SAFE** ...when castor oil is used orally and appropriately, short-term (16).

**POSSIBLY SAFE** ...when the hulled castor seed is used orally and appropriately, short-term. There is some evidence that a single dose of castor seed with the outer coat removed (hulled) can be used safely (7127, 7128).

**POSSIBLY UNSAFE** ...when castor oil is used orally in high doses or for extended periods. Taking castor oil for greater than one week or exceeding the typical dose of 15-60 mL per day can increase the risk of fluid and electrolyte disturbances (272).

**UNSAFE** ...when the whole seed is used orally. Safety depends on whether or not the seed is chewed or if the outer coat is ruptured. Chewing as few as 1-6 whole seeds can be lethal in an adult. If the seed is swallowed intact, poisoning is less likely; however, prompt medical attention should be sought after ingestion of any whole castor seed (5611).

There is insufficient reliable information available about the safety of castor when applied topically.

**CHILDREN:** **POSSIBLY SAFE** ...when castor oil is used orally and appropriately, short-term (16). **POSSIBLY UNSAFE** ...when castor oil is used orally in high doses or for extended periods. Taking castor oil for greater than one week or exceeding the typical children's dose of 1-15 mL per day, depending on age, can increase the risk of fluid and electrolyte disturbances (272). **UNSAFE** ...when the whole seed is used

orally. The chewed or uncoated seeds can cause severe toxic effects (5611, 5612) and death (5611). There is insufficient reliable information available about the safety of the hulled seed or topical use of castor in children.

**PREGNANCY: POSSIBLY SAFE** ...when castor oil is used orally in pregnant women at term. Midwives routinely use castor oil for labor induction in pregnant women at term. This practice does not appear to adversely affect the mother or fetus (1122, 7191). However, castor oil should not be used without the supervision of a clinician. **LIKELY UNSAFE** ...when castor oil is used orally in pregnant women who are not at term. Castor oil might induce premature labor and induce miscarriage (12); avoid using. **UNSAFE** ...when the whole seed is used orally. The chewed or uncoated seeds can cause severe toxic effects, including death (5611); avoid using. There is insufficient reliable information available about the safety of using the hulled seed or topical use of castor during pregnancy.

**LACTATION:** Insufficient reliable information available; avoid using.

### Effectiveness:

#### POSSIBLY EFFECTIVE

**Constipation.** Taking castor oil orally is effective as a stimulant laxative for reducing constipation (272).

**Contraception.** Taking the hulled castor seed orally seems to be effective as a contraceptive. There is some evidence that a single dose of seeds with the outer coat removed (hulled) can work as a contraceptive for up to 8-12 months (7127, 7128).

**Parturition.** A single 60 mL dose of castor oil appears to stimulate labor within 24 hours in at least 50% of women at term pregnancy with no prior signs of labor (7191).

There is also some evidence that women at term pregnancy with premature membrane rupture who take castor oil have a higher incidence of labor onset and a lower incidence of cesarean section than women who take no medication (1122).

There is insufficient reliable information available about the effectiveness of castor for its other uses.

### Mechanism of Action:

The applicable parts of castor are the seeds (beans) and oil. Castor oil is produced by cold pressing ripe seeds. Unlike the seeds, castor oil does not contain the deadly poison ricin (13715). Castor oil is a glyceride that can be absorbed from the intestine and metabolized as a fatty acid (272). Castor oil is hydrolyzed in the duodenum by pancreatic lipase to release ricinoleic acid, which might have stimulant laxative effects (272). Although the exact mechanism of ricinoleic acid is unknown, the laxative effect appears to result from fluid secretion induced by cyclic adenosine monophosphate, rather than the increased peristalsis due to an irritant effect (272). Onset of bowel evacuant action is usually within 2 hours, but sometimes can take up to 6 hours (16).

In pregnancy, castor oil is thought to induce labor by producing hyperemia in the intestinal tract, which causes reflex stimulation of the uterus (16). Castor oil might also increase prostaglandin production, which stimulates uterine activity (7191). Castor seeds are best known for their toxic effects. They contain about 1% to 5% of the toxic glycoprotein, ricin. Pure ricin is a white powder that is water soluble and stable over a wide pH range. Ricin can be fatal when ingested, inhaled, or given intravenously. Ricin is an N-glycosidase that affects an RNA subunit and interferes with protein synthesis, causing cell death (5611, 13715). It may also cause toxicity by inducing apoptosis (cell death), direct cell membrane damage, changing cell membrane structure and function, and release of cytokine inflammatory mediators (13715).

Preliminary research suggests ricin might be useful in cancer treatment, targeted specifically to cancer cells (13715).

It is unclear how castor seeds work as a contraceptive; however, its effects do not seem to be hormonally mediated (7127, 7128).

### Adverse Reactions:

Orally, castor oil, like all stimulant laxatives, can cause abdominal discomfort, cramping, nausea, and faintness (15, 272). Nausea can also occur because of the unpleasant taste of castor oil (7191). Using flavored products might reduce this effect.

Castor oil can also cause fluid and electrolyte loss, particularly potassium, which can result in hypokalemia. It can also cause malabsorption from intestinal hypermotility (15, 272). Chronic ingestion over long periods of time can lead to cathartic colon (15).

There is some concern that castor oil might cause amniotic fluid embolism. There is one case of amniotic fluid embolism and cardiopulmonary arrest within one hour of ingestion of 30 mL of castor oil at full-term pregnancy (1219).

Orally, castor seed can cause severe toxicity. After ingestion, ricin, the toxic constituent of the seed, causes gastrointestinal symptoms usually within 4-6 hours, but symptoms may be delayed (13715). Chewing whole seeds can cause nausea, vomiting, diarrhea, abdominal pain, dehydration, shock, hemolysis, severe fluid and electrolyte disturbances, peripheral vascular collapse, renal failure secondary to hypovolemia, and death. Cellular damage to liver, kidneys, and pancreas typically occurs 2-5 days after ingestion (5611, 5612). Treatment is supportive (13715). As few as 1-6 seeds can be lethal in humans (5611). Rupture of the seed hull seems to be necessary to cause toxicity. Swallowing seeds whole, without chewing, is less likely to cause toxic effects; however, prompt medical attention should be received after ingestion of any whole seed. Serum chemistries should be monitored for at least 5 days after ingestion in symptomatic patients (5611).

Hulled castor seeds, with the outer coat carefully removed, seem to be well-tolerated, and without toxic side effects (7127, 7128); however, some patients taking hulled seeds can have transient anorexia and weight loss (1727).

After inhalation, ricin can cause respiratory illness usually within 8 hours, but symptoms may be delayed. Symptoms include cough, dyspnea, arthralgias, and fever. Progression to respiratory distress and death can occur (13715).

After injection, ricin causes illness within 6 hours. Symptoms include generalized weakness and myalgias. Symptoms may progress to vomiting, fever, hypotension, multiorgan failure, and death (13715).

Topically, the castor plant, crushed seeds, or seed dust can cause dermatitis in some patients (5611). Anaphylaxis can occur in these patients after exposure to castor beans, plants, or dust (5611).

### Interactions with Herbs & Supplements:

None known.

### Interactions with Drugs:

#### DIURETIC DRUGS

Interaction Rating = **Moderate** Be cautious with this combination  
Severity = High • Occurrence = Possible • Level of Evidence = D

Overuse of castor oil might compound diuretic-induced potassium loss (15). There is some concern that people taking castor oil along with potassium depleting diuretics might have an increased risk for hypokalemia. Some diuretics that can deplete potassium include chlorothiazide (Diuril), chlorthalidone (Thalitone), furosemide (Lasix), hydrochlorothiazide (HCTZ, HydroDIURIL, Microzide), and others.

### Interactions with Foods:

None known.

### Interactions with Lab Tests:

None known.

### Interactions with Diseases or Conditions:

**INTESTINAL DISORDERS:** Avoid using in patients with intestinal obstruction abdominal pain of unknown origin, biliary tract obstruction, and other biliary disorders (15).

### **Dosage/Administration:**

**ORAL:** For constipation, 15 mL is commonly used (15).

For total colonic evacuation, such as before surgery, or radiologic or colonoscopic procedures, the dose for adults and children over 12 is 15-60 mL given 16 hours prior to surgery or colonic examination (15).

For children age 2-11 years, 5-15 mL is typically used. In children younger than 2 years, 1-5 mL is commonly used.

For induction of labor, a variety of dosage regimens have been used (1122). Single doses vary from 5-120 mL (1122). A one-time dose of 60 mL in fruit juice is a commonly used regimen (7191). Other regimens that have been used include 5 mL in peppermint tea every 2 hours, 15 mL three times daily, 30 mL every 2 hours, 30 mL every 6 hours, 30 mL every 3 hours for 3 doses, 60 mL daily, and 60 mL daily for 2 days (1122).

**TOPICAL:** No typical dosage.

### **Editor's Comments:**

Castor oil has been used medicinally for centuries and was mentioned in the Ebers Papyrus (16). The taste of castor oil is bland, followed by a slightly bitter and usually nauseating taste (16). Castor oil is sometimes flavored with cinnamon, peppermint, or other flavorings to mask the unpleasant taste (16).

Ricin, which is obtained from the castor bean, has been tested as a chemical warfare agent. Weapons-grade ricin is purified and produced in inhalable particles that can be aerosolized for a mass attack. Small particle size is associated with increasing toxicity. Ricin has been found in letters sent to Congress members and the White House, and in the possession of people linked to terrorist and antigovernment groups (3715).

---

The **Natural Medicines Comprehensive Database** disclaims any responsibility related to medical consequences of using any medical product. Every effort is made to ensure that the information contained in this sheet is accurate at the time it was published. Consumers and medical professionals who consult this sheet are cautioned that any medical or product related decision is the sole responsibility of the consumer and/or the health care professional.

---

Your legal License Agreement sets limitations on printing pages from this Database. Please refer to your License Agreement for specifics. Copyright © 1995-2009 Therapeutic Research Faculty. All rights reserved. No reproduction of this document permitted without written permission from publisher. Unlawful to download, store, or distribute content from this site.

	
	
<p><a href="http://www.naturaldatabase.com">www.naturaldatabase.com</a> <a href="mailto:mail@naturaldatabase.com">mail@naturaldatabase.com</a> P.O. Box 8190, Stockton, CA 95208 PH (209) 472-2244 - Fax (209) 472-2249</p>	