



Gossypium

Revised: August 16, 2021.

Drug Levels and Effects

Summary of Use during Lactation

Gossypium herbaceum seeds contain pectin and the root bark and seeds contain gossypol. *Gossypium* is a purported galactagogue, and it may increase the complement C3 and C4 content of breastmilk. However, clinical trials supporting these uses are small and inadequate to validate its efficacy. Gossypol has caused hypokalemia, mild leukopenia and thrombocytopenia, fatigue, dry mouth, dry skin, and gastrointestinal upset. Galactagogues should never replace evaluation and counseling on modifiable factors that affect milk production.[1,2]

Dietary supplements do not require extensive pre-marketing approval from the U.S. Food and Drug Administration. Manufacturers are responsible to ensure the safety, but do not need to *prove* the safety and effectiveness of dietary supplements before they are marketed. Dietary supplements may contain multiple ingredients, and differences are often found between labeled and actual ingredients or their amounts. A manufacturer may contract with an independent organization to verify the quality of a product or its ingredients, but that does *not* certify the safety or effectiveness of a product. Because of the above issues, clinical testing results on one product may not be applicable to other products. More detailed information [about dietary supplements](#) is available elsewhere on the LactMed Web site.

Drug Levels

Maternal Levels. An extract of *Gossypium herbaceum* seeds was given in a single oral dose of 20 grams containing 520 mg of pectin to 4 women who were 48 hours postpartum. Colostrum samples were obtained 120 minutes after administration. Complement C3 and C4 components of colostrum increased to a greater extent in treated women than in women who received a placebo. No increase in serum complement C3 and C4 occurred in either group. The authors proposed that pectin from *Gossypium* seeds stimulated secretion of complement C3 and C4 into colostrum and that this effect might increase the antibacterial activity of breastmilk.[3]

Infant Levels. Relevant published information was not found as of the revision date.

Effects in Breastfed Infants

Relevant published information was not found as of the revision date.

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Effects on Lactation and Breastmilk

Animal studies have demonstrated an increase in serum prolactin after intravenous administration of an extract of *Gossypium herbaceum*.^[4] Some authors state that their unpublished data showed that oral administration of *Gossypium* seed extract to women increased their serum prolactin levels.^[3]

A randomized study was done in India that compared the seed kernel of *Gossypium herbaceum* 10 grams per day in 3 divided doses to placebo for one month in healthy mothers to treat perceived insufficient milk supply. Entry into the study was based on maternal reports of insufficient milk supply and only mothers were blinded to the treatment. No maternal counseling on breastfeeding was provided. The principal finding of the study was that the volume of supplementary feedings decreased significantly from an average of 292 mL daily to 40 mL daily in the treatment group and decreased a statistically insignificant amount in the placebo group. No differences in infant weight gains were noted before and after treatment between the two groups. Twenty-one of the 30 mothers receiving the active drug were able to completely breastfeed their infants by the end of the study. Mothers who received the active product subjectively felt that they had a better milk supply and were more satisfied with nursing at the end of the study.^[5]

References

1. Brodribb W. ABM Clinical Protocol #9. Use of galactogogues in initiating or augmenting maternal milk production, second revision 2018. *Breastfeed Med*. 2018;13:307–14. PubMed PMID: 29902083.
2. Breastfeeding challenges: ACOG Committee Opinion, Number 820. *Obstet Gynecol*. 2021;137:e42–e53. PubMed PMID: 33481531.
3. Sepehri H, Roghani M, Houdebine ML. Oral administration of pectin-rich plant extract enhances C3 and C4 complement concentration in woman colostrum. *Reprod Nutr Dev*. 1998;38:255–60. PubMed PMID: 9698276.
4. Sawadogo L, Thibault JF, Rouau X, et al. The lactogenic action of plant extracts. In, Martinet J, Houdebine LM, Herbert H, eds. *Biology of lactation* Paris Institut National de la Recherche Agrono 1999:553-64.
5. Manjula S, Sultana A, Rahman K. Clinical efficacy of *Gossypium herbaceum* L. seeds in perceived insufficient milk (PIM) supply: A randomized single-blind placebo-controlled study. *Orient Pharm Exp Med*. 2014;14:77–85. doi: 10.1007/s13596-013-0121-7.

Substance Identification

Substance Name

Gossypium

Drug Class

Breast Feeding

Lactation

Complementary Therapies

Phytotherapy

Plants, Medicinal