Review Article

Breastfeeding, the benefits of lactation for Nursing mother's health along with the challenges associated with lactation and use of natural milk energizing Supplements

Abstract:

Breastfeeding is an important part of providing every child with the healthiest start in life. It is a baby's first vaccine as well as the best source of nutrition, and it can help with brain development. Breastfeeding also nurtures national economies. Breastfeeding rates that are higher can boost a country's prosperity by lowering healthcare costs and producing stronger, more capable workforces. Low milk supply is an issue that is likely to arise in any group of breastfeeding mothers. To increase breast milk production, a substantial number of mothers turn to herbal galactagogues. This article is aimed to review the effectiveness of some medicinal plants as galactagogues. This study uses a literature review approach by using several sources selected based on the criteria that have been set by researchers. Indian herbal galactagogues such as *Pueraria tuberosa*, *Trigonella foenum-graecum*, *Asparagus racemosus*, *Leptadenia reticulata*, *Withania somnifera*, *Allium sativum* and Zinc Calyx have been discussed for its efficacy and safety.

Keywords: Lactation, Galactagogues, Indian Herbs, *Pueraria tuberosa*, *Leptadenia reticulata*, *Asparagus racemosus*

Introduction:

Maternal and child health is one of the important elements of primary healthcare. The World Health Organization recommends exclusive breastfeeding for infants up to six months after birth. It is widely recognized that breastfeeding is the best nutrition for human infants in the first year of life and should begin soon after birth. Breast milk has been considered as the 'gold standard' of infant nutrition worldwide as it has the appropriate balance of nutrients provided in easily digestible and bioavailable forms. Nature has provided all the vital requirements of the infant in the form of breast milk, which is universally recognized nutritionally and immunologically superior than any other substitutes.

Ayurveda is an ancient science and healthcare system that has been adopted by cultures globally. Ayurveda analyses and cures diseases after understanding an individual's body type, heartbeat patterns, appearance, vision, etc. There are various protocols and treatments in the ayurvedic system to rectify ailments through the use of herbs, plants, exercise, diet and changes in lifestyle. Throughout the country, various segments of ayurvedic healthcare and personal care products are available. For personal care range, the market is divided into oral care, skincare, make-up, hair care and fragrances. Whereas, for the healthcare range, the market is segmented into ayurvedic nutraceuticals, ayurvedic medicines and dietary supplements. Corporations throughout the country are focusing on developing innovative ayurvedic products and generating awareness among consumers. The global Ayurvedic market size is projected to reach US$ 16230 million by 2028, from US$ 7273.3 million in 2021, at a CAGR of 12.0% during 2022-2028. India is the largest Ayurvedic market with about 80% market share. Middle East is follower, accounting for about 5% market share.

Lactation describes the secretion of milk from the mammary glands. Milk is produced as a result of interaction of hormones and reflexes (prolactin, oxytocin, rooting and suckling reflexes). The milk secreted during the initial 3-4 days after delivery is known as Colostrum which is yellow, thick and contains more antibodies and cells and increased amounts of vitamins A, D, E and K. After 3-4 days, until two weeks, the milk secreted is known as transitional milk in which there is a decline in the immunoglobulin and protein content while the fat and sugar content increases. Transitional milk is followed by mature milk which is watery, thinner and full of nutrients such as proteins, enzymes, lipids, hormones, growth factors, vitamins A, B, C, lysozymes, antibodies and other factors essential for optimal growth of the baby **[1].**

"There are numerous advantages of breastfeeding to the child and the mother. Good breast feeding results in good growth, strength, longevity and good health of the child. Both baby and mother gain many benefits from breastfeeding. Breast milk contains all the nutrients that an infant needs in the first six months of life for normal growth and development including carbohydrates, fats, proteins, vitamins, minerals and water" **[2]**. "Colostrum is known to contain antibodies called immunoglobulins such as IgA, IgG and IgM in mammals. Other immune components of colostrum include the major components of the innate immune system, such as

lactoferin, lysozyme, lactoperoxidase, complement and proline-rich polypeptide. These bioactive agents, which are not found in commercially prepared formulas, boost the infant's immature immune system. Breast-milk fat contains long chain polyunsaturated fatty acids (docosahexaenoic acid or DHA, and arachidonic acid or ARA) that are not available in other milks. These fatty acids are important for the neurological development of a child. Breast milk contains a balance of amino acids which are suitable for a baby. Breast milk normally contains sufficient vitamins for an infant, unless the mother herself is deficient. The minerals iron and zinc are present in relatively low concentration" **[3].**

"Breast feeding results in prevention in gastrointestinal infections as low pH, low volatile fatty acids, and high lactic acid concentrations make the colonic content of breast-fed babies an environment favourable for Bifidobacteria growth and this is probably the main protective factor against gastrointestinal infections. Breastfeeding reduces the risk of acquiring urinary tract infections after birth" **[4]**. "Breastfeeding halves the risk of sudden infant death syndrome in children up to the age of one" **[5].** "Breastfeeding is associated with a reduction in childhood obesity risk" **[6]**. "Prolonged and exclusive breastfeeding improves children's cognitive development" **[7]**. "Breastfeeding is also helpful in slight prevention of childhood acute leukaemia or lymphoma" **[8].**

"Breastfeeding confers various benefits to the mother also.Breastfeeding is convenient and less time consuming. Breast milk is readily available all the time at the desired temperature. Women who breastfed their infants have less anxiety and more mutuality than the women bottle feeding their infants" **[9]**. "Decrease in postpartum weight retention is noticed after encouraging prolonged breast feeding" **[10]**. "Long duration of lactation is associated with a reduced risk of coronary heart disease" **[11]**. "Mothers who breast feed their babies have a reduced risk of breast cancer, ovarian cancer, and endometrial cancer" **[12, 13, 14].**

"Insufficient milk production is the most common reason reported by mothers for early cessation of breast feeding. The causes of insufficient milk production are due to preterm labor, mother and child illness, mother – baby separation, anxiety, fatigue, emotional stress etc. The consequence of inadequate breast feeding causes high prevalence of malnutrition, infection, and loss of mother-infant bonding etc". **[15].**

"Therefore, galactogogues (lactation - inducers) are considered in insufficient breast milk production. Galactogogues are substances that assist in the initiation, continuation or augmentation of breast milk production. Most commonly used galactogogues for human use are metoclopromide, domperidone, chlorpromazine and sulpiride, which show side effects in mothers like gastrointestinal disorders, xerostomia (dry mouth syndrome or hyposalivation), cardiac arrhythmia, lethargy, sedation, extra pyramidal symptoms such as hypertension, tremor, tic, facial seborrhea and hyperhidrosis and even sudden death. In infants thesymptoms due to ingested milk from treated mothers include intestinal discomfort, lethargy and sedation" **[16].**

"Due to the adverse side effects produced by the commonly used allopathic galactogogues, safe alternatives are being used today which are provided by Ayurveda. As per the estimation of World Health Organization, 80% of the world population is currently using herbal medicines for primary health care needs" **[17].** Ayurveda offers safe and effective approaches for the augmentation of breast milk owing to its rich source of medicinal flora attributed with galactogogue properties.

Milk energizer capsule (YU-06/2020) commercially known as Hapélact capsule is a multi-ingredient supplement. The active components including its ratio in Milk energizer capsule are standardized extracts of *Pueraria tuberosa* (Vidarikhand): 28.3%; *Trigonella foenum graecum* (Methi):23.6%; *Asparagus racemosa* (Shatavari): 26.6%; *Leptadenia reticulata* (Jivanti): 11.8%; *Withania somnifera* (Ashwagandha): 9.4%; *Allium sativum* (Lasun):2.4%; Zinc Calyx: 0.9% along with other excipients. The product aims to not only increase milk supply but also improve the quality of breast milk. It is a blend of fenugreek, Indian ginseng, Buttermilk roots, fennel seed etc. The highlights of Milk energizer capsule are as follows.

- Good for all mothers: All-natural, gluten-free, soy-free, dairy-free, and non-GMO
- Easy to consume: Comes in easy-to-swallow capsules
- Works for Many Moms: Many users said that this supplement did increase their milk production.
- Contains all the major galactagogues: The select blend contains the best-known milk boosters, including fenugreek, buttermilk roots etc.
- Contains zinc: Supplements zinc during lactation, which has higher requirements than those during pregnancy, especially during the early weeks postpartum.

The administration route for Milk energizer capsule is oral and the advisable dosage regimen is as follows.

- For first five days of supplement intake: Take 2-3 capsules thrice a day preferably before nursing or as directed by healthcare practitioner
- Post five days of supplement intake: Take 2-3 capsules twice a day preferably before nursing or as directed by healthcare practitioner

The Milk Energizer Capsule contains a blend of well-known herbal galactogogues & other natural ingredients, which are as described below in details for its clinical efficacy, possible mechanism of actions and traditional use:

Figure 1: Active ingredients of Milk energizer capsule

***Pueraria tuberosa* (Vidarikhand):**

"*Pueraria tuberosa* Linn (Fabaceae) is a perennial herb which occurs naturally throughout India. *Pueraria tuberosa* is an important medicinal plant of the Indian traditional system of medicine, Ayurveda, and is mentioned in the Ayurvedic Pharmacopoeia of India under the name of Vidari. It is used in traditional medicine as a fertility control agent and as an aphrodisiac, cardiotonic, diuretic and galactogogue" **[18]. "**Herbal decoctions of Vidarikhand increases breast milk in nursing mothers. The herb strengthens the body and boosts immunity. It revitalizes the whole body and increases muscle bulk. *Pueraria tuberosa* also enhanced the sexual urge and activities in animals exposed to chronic stress, thus suggesting anxiolytic and anti-stress properties of the herb. Vidarikhand is also found to be effective in IUGR (Intra-Uterine Growth Restriction)" **[19].**

***Trigonella foenum gracum* (Fenugreek, Methi**):

"Fenugreek has been used since ancient times as a herbal galactogogue. Women around the world consume fenugreek seeds to facilitate lactation during the postpartum period. Fenugreek seeds are rich source of gum, fiber, alkaloids, flavonoids, saponins and volatile content. The seeds also contain fiber 4-hydroxyisoleucine and fenugreekine which are considered to be responsible for the anti-hyperlipidemic and lactation effects of fenugreek. It is speculated that fenugreek induces sweat production and since the breast is a modified sweat gland, it affects the

secretion of milk" **[20]. "**It has been demonstrated that fenugreek has esterogenic activity which is effective in breast milk production" **[21].** *In vitro* studies showed that fenugreek seeds contain estrogen – like compounds which stimulate pS2 expression in MCF-7 cell lines **[22].** It has been demonstrated that phytoestrogens and diosgenin present in fenugreek might be responsible for increase in milk flow in lactating mothers. The study was conducted in 66 lactating mothers who on consumption of herbal tea with fenugreek showed almost double the mean volume of pumped milk as compared to placebo and control **[23].** "Data of approximately 1200 women, over a period of 6 years, who were supplemented with commercially available fenugreek capsules, showed most of the women experiencing increase in milk supply within 24 – 72 hours of use" **[24].** In another study of 75 puerperal women, who consumed fenugreek herbal tea or palm dates, showed that in early post – partum period palm dates and fenugreek herbal tea enhanced breast milk production **[25].**

***Asparagus racemosus* (Buttermilk roots, Shatavari):**

In Ayurveda, *Asparagus racemosus* is considered as a female tonic as it is highly effective in problems related with female reproductive system, thus has been coined as "Queen of Herbs". Shatavari is also known for its anti-inflammatory, anti-microbial and immunomodulator activities. Shatavari has been mentioned in the official Ayurvedic Pharmacopeia of India for its use as a galactogogue **[26].** The herb is also mentioned as 'Balya' in Ayurveda, which means a strength promoter. Studies have shown that oral administration of roots of *A. racemosus* significantly increased the milk yield in rats **[27],** cows **[28],** buffaloes **[29]** and goats **[30]** confirming the herb's galactogogue activity. Administration of alcoholic extract of *A. racemosus* in rats showed significant increase in milk yield and increased growth of mammary glands, alveolar tissue and acini was also observed **[31]. "**The administration of alcoholic extract of rhizome of Shatavari in adult pregnant female albino rats suggests an estrogenic effect of Shatavari on the female's mammary gland and genital organs" **[32].** "The extract of Shatavari has been shown to increase both the weight of mammary lubolo-alveolar tissue and the milk yield in animal experiments. This effect was attributed to the action of released corticosides or an increase in prolactin. Shatavarins I-V, the steroidal saponins, may be responsible for the hormonal like effect of Shatavari and explains its traditional use as a reproductive tonic" **[33, 34].** "The presence of steroidal saponins and sapogenins constituents contribute to the lactogenic effect of *Asparagus racemosus"* **[35, 36].**

Galactogogue effect of Shatavari was evaluated in a randomized double-blind clinical trial in 60 lactating mothers by measurement of changes in their prolactin hormone level during the study. Several secondary parameters namely mothers' weight, babies' weight, subjective satisfaction of mothers and well-being and happiness of babies were studied to corroborate the primary findings. The studies revealed that the oral administration of Shatavari led to more than three-fold increase in the prolactin hormone level of the subjects in the research group as compared to

the control group. Prolactin is the hormone responsible for increasing breast milk supply in lactating mothers. The primary findings were corroborated by the secondary outcome measures and were found to be statistically significant. Thus, during postpartum period, the herb reduces stress and anxiety which can be contributed to its adaptogenic properties. Due to phytoesterogenic property, the herb helps to maintain the hormonal balance in lactating mothers and also acts as a rejuvenative to rebuild strength and vitality [**37].** "Anti-oxidant and free radical scavenging properties of methanolic root extract of Shatavari suggested moderate anti-oxidant activity of the herb" [**38].**

***Leptadenia reticulata* (Jivanti):**

"It is a traditional medicinal plant species used to treat various ailments such as tuberculosis, hematopoiesis, emaciation, cough, dyspnea, fever, burning sensation, night blindness, cancer, and dysentery. Ayurveda has a science called Rasayana, which deals with the improvement of general health, vigor, and vitality. Among various herbs used in Rasayana, *Leptadenia reticulata* (Jivanti) has a unique place in lieu of its revitalizing, rejuvenating, and lactogenic properties" [**39].** The therapeutic potential of this herb is because of the presence of diverse bioactive compounds such as a-amyrin, ß-amyrin, ferulic acid, luteolin, diosmetin, rutin, ß-sitosterol, stigmasterol, hentricontanol, a triterpene alcohol simiarenol, apigenin, reticulin, deniculatin and leptaculatin.

Jivanti has been used in Malkanguni, a polyherbal formulation, for its anti-depressant activity without any side effects **[40].** Patel **[41]** for the first time reported the usefulness of Leptaden, a herbal formulation of *L. reticulata* in preventing habitual abortion and later mentioned its lactogenic property. Later, the use of Leptaden tablet, for the enhancement of milk yield in nursing mothers was studied **[42].** Likewise, clinical assessment showed the lactogenic property of Leptaden in the milk yield of dairy cows **[43, 44].** "A clinical investigation showed that in most cases, Leptaden stimulated lactation in 12 hours with easy flow, and lactation continued even after discontinuing the herbs" **[45, 46].** "The lactogenic property of *L. reticulata* and Leptaden tablets was studied on veterinary animals and reported a significant galactopoietic response in all cases" **[47].** Studies were conducted on stigmasterol and ether fraction isolated from *L. reticulata* for lactogenic effect on rats. It was found that both the active ingredients had lactogenic effect **[48].** "The effect of poly-nutrient formulation Galactin Vet (The Himalaya Drug Company) with *L. reticulata* was assessed as one of the ingredients for increase in average milk production in cattle. It was found that Galactin Vet improved milk yield and fat percentage in dairy cows with no adverse effects on the health of the animals, suggesting its safe use as a galactagogue in dairy animals" **[49].**

In a clinical trial of 242 post-natal mothers treated with Leptaden, a herbal formulation of *L. reticulata* for four weeks, statistical study of the results showed that the effect of Leptaden in

lactation cases and the weight gain of the infants whose mothers were treated with Leptaden were statistically significant at $P < 0.001$. This study has shown the good effect of Leptaden in lactation cases both clinically and statistically **[50].**

***Withania somnifera* (Indian Ginseng, Ashwagandha):**

Ashwagandha, also known as Indian Ginseng or winter cherry, is an important ancient plant which has been used in Ayurveda and indigenous medical system for over 4000 years. Ashwgandha has long been considered as an excellent rejuvenator, a general health tonic and a cure for a number of health complaints. It is a diuretic, anti-inflammatory and generally respected for increasing energy, endurance, and acts as an-adaptogen that exerts a strong immune-stimulatory and an anti-stress effect. Ashwagandha also acts as galactogogue and thickens and increases the nutritive value of the milk when given to nursing mothers.

"Ashwagandha, an adaptogenic Ayurvedic herb, has been often used to combat and reduce stress and thereby enhance general well-being. The root aqueous extract of the herb was beneficial in reducing stress and anxiety. Ashwagandha has been shown to be effective for insomnia but does not act as a sedative. It's rejuvenative and nervine properties produce energy which in turn helps the body to settle and sleep. Thus, it helps the body to address stress related conditions rather than masking it with sedatives. So, this herb rejuvenates the nervous system, erases insomnia and eases stress. Ashwagandha also helps in stress related weight gain. Cortisol is a hormone produced in response to stress. Over production of this hormone can lead to weight gain, muscle loss, nervous eating and anxiety. Ashwagandha can naturally lower cortisol levels up to 26%" **[51].**

"Stress is the major problem for many diseases ranging from psychiatric disorders to endocrine disorders. Ashwagandha as a treatment for cerebral disorders in the elderly, including memory loss has been used in India from time immemorial. Studies from university of Leipzig showed the effects of Ashwagandha on the neurotransmitters of the brain. The herb led to more acetylcholine receptor activity concluding that the increase of activity in that particular neurotransmitter could account for the increase in cognitive ability & memory that is attributed to Ashwagandha. Another study from University of Texas Health Science Centre found that extracts of the herb show activity similar to GABA which could explain the effectiveness in reducing anxiety & stress. Another study shows that the plant *Withania somnifera* can enhance memory which also reduced anxiety & depression in animals" **[52].**

"A randomized, double-blind, placebo-controlled clinical study evaluated the effect of an aqueous root extract of Ashwagandha in 58 participants having stress and anxiety. In this clinical study, the effect of a lower dose of Ashwagandha root extract (250 mg/day) was evaluated and compared with the standard dosage of Ashwagandha (600 mg/day) and placebo in stressed individuals. The subject group receiving Ashwagandha 250 mg showed a statistically significant

reduction in the stress levels assessed using the Perceived Stress Scale (PSS) and serum cortisol. Significant improvement was also noticed for the sleep quality of the participants, which is an important indicator of better stress management" **[53].**

***Allium sativum* (Garlic, Lasun):**

"Garlic has a long history of use as a food and medicine and is "generally recognized as safe" (GRAS) as a food flavoring by the U.S. Food and Drug Administration, including during lactation" **[54]. "**Garlic contains alliin, which is metabolized by the enzyme alliinase to allicin, thought to be responsible for most of garlic's medicinal properties and odor. Garlic's odor in milk is attributed to allyl methyl sulfide" **[55].** Garlic's odour is transmitted to breast milk, which may increase infant sucking time acutely and might enhance the breastfed infant's food choices in the long term.

"Forty women who complained of an insufficient milk supply at 5 days postpartum were given a combination herbal supplement as 2 capsules of Lactare (Pharma Private Ltd., Madras, India) three times daily. Each capsule contained wild Asparagus 200 mg, Ashwagandha 100 mg, Fenugreek 50 mg, Licorice 50 mg and Garlic 20 mg. By day 4 of therapy, no infants required supplementary feeding. Infants were weighed before and after each feeding on the fifth day of maternal therapy to determine the amount of milk ingested. On the day of the test weighing, infants' milk intake averaged 388 mL, and the caloric intake was considered adequate" **[56].**

"In two studies, capsules containing 1.5 g of Garlic extract (General Nutrition Center, Pittsburgh, PA) were given to nursing mothers. In the first experiment, 8 mothers received a garlic capsule or placebo once daily in a crossover fashion. Garlic-naive infants whose mothers ingested garlic capsules spent more time (33 vs 27 minutes) attached to the nipple during the time period of 1.5 to 3 hours after garlic ingestion when garlic odor in milk was maximal than in those whose mothers received a placebo; however, total number of nursing or total amount of milk ingestion did not differ between groups" **[57].** "A study randomized nursing mothers to receive garlic capsules or placebo for 3 days before testing with a single capsule. Infants who received garlic in the milk for the first time spent 30% more time nursing than after placebo. Infants, who had been previously exposed to garlic in milk, did not spend more time nursing after subsequent Garlic exposure in milk" **[58].**

Zinc calyx (Yashad Bhasma):

"Zinc is an indispensable element, being involved in many biological processes. Therefore, insufficient zinc intake in early youth can detrimentally affect the function of a growing body. Zinc impacts the function of the immune system and is needed for normal keratinisation

processes. Zinc also acts as a cofactor for many enzymes" **[59].** Yashad Bhasma is an ancient Ayurvedic preparation derived from Zinc. It is used in Ayurvedic management of eye disorders, diabetes, anemia, cough, asthma etc.

"Breast milk is commonly the sole source of food, and accordingly the zinc source, for babies for the first six months of life, and mothers are encouraged to continue breastfeeding in addition to complementary feeding until two years of age and longer" **[60]. "**Mean fractional absorption of zinc from breast milk is approximately 50%; therefore, the baby's zinc demand is fulfilled for at least the first several months, although the quantity of zinc transferred from the mammary gland to the breastfed baby decreases as the lactation progresses" **[61]. "**It is also speculated that zinc is the first limiting nutrient in breast milk, because the decline in zinc amount from colostrum to mature milk is substantial: from about 4 mg per day during the first days postpartum to approximately 0.7 mg per day by six months" **[62]. "**Studies indicate that zinc intake from breast milk for babies under six months of age can already be lower than recommended**.** Mean fractional absorption of zinc from the diet for females is about 31%, but it can double during lactation in response to zinc excretion via breast milk. Zinc-rich food sources are meat, eggs, and fish. Plant-based products such as legumes and grain-based products are a good source of zinc as well, but they also contain phytates, which decrease the bioavailability of dietary zinc" **[63].**

"A study in lactating Spanish women provided evidence that both dietary zinc intake and serum zinc concentrations were positively correlated with milk zinc concentrations" **[64]. "**It was observed that women with low zinc intake in their third trimester of pregnancy (< 10 mg/day zinc) had lower concentrations of zinc in their milk. A comparison of milk zinc concentrations from lactating women in developing and developed countries supports the hypothesis that chronically low dietary zinc is associated with lower milk zinc concentrations" **[65].**

Zinc deficiency is easily rectified with a self-administered supplementation which is inexpensive, non-toxic, and safe **[66].** To be of maximum benefit however, it must be given at the time of greatest need. Absorption is enhanced if the supplement is taken with orange juice.

It is suggested therefore that postnatal zinc supplementation should be commenced as early as the first postnatal day as zinc levels are likely to be depleted following the stresses of labor and parturition. Supplementation should be considered as the 'first resort' in order to minimize or prevent the problems which are associated with postnatal maternal and infant health. The relationship between maternal well-being and successful and prolonged breastfeeding is significant. It is concluded that marginal zinc deficiency may be more common, particularly in postnatal women, than previously believed and be a crucial factor in their health status. It is recommended that postnatal women be given the appropriate information, and the opportunity to commence an oral zinc supplement following the birth of their infant.

Yashada Bhasma is prepared by a three-steps process i.e. Shodhan, Jarana and Marana. The inclusion of plant extracts and herbs during calcination process enhances its medicinal qualities,

and reduces it to a nano size. The preparation of Yashad bhasmas includes two main stages: Shodhan (purification) and Maaran (incineration). Shodhan process involves repeated trituration with herbal extracts, cow urine, milk, ghee, and so forth. Maaran process involves repeated cycles of incineration..

Conclusion:

Clinicians face complex decisions in helping nursing mothers experiencing difficulties with lactation or those who want to induce lactation. Considering the apparent demand for galactagogues and the low rates of sustained breast-feeding worldwide, the information of reliable natural lactation supplement with time tested ingredients is an important because clinicians and families may not be able to make safe choices, when confronted with difficulties related to induced lactation by pharmaceutical galactogogues vs natural galactogogues.

The summary of ingredients used in YU-06/2020 is as follows.

Table 1 : Summary of ingredients used in YU-06/2020

Sr.	Name of ingredient	Uses in Milk energizer supplement
1.	*Pueraria tuberosa*	• Known as "Rasayana" in Ayurveda along with longevity and rejuvenation properties • Used as restorative tonic, antiaging, energizer, vital energy booster, galactagogue, spermatogenic and immune booster • Helps improving fetal growth rate, maternal weight gain and abdominal circumference, and birth weight of the baby • Improves lactation in nursing mothers
2.	*Trigonella foenum-graecum*	• One of the most popular galactogogues • Stimulates hormone precursors leading to enhancement in the milk production due to the presence of phytoestrogens and diosgenin contents • Potent stimulator of breast milk production that appears to be safe for mother and baby • Effective in breast milk production which was observed in the increase in frequency of urination and weight gain of infants during the first week of life • Have mastogenic effect, stimulating growth of mammary gland
3.	*Asparagus racemosus*	• Has healing and galactagogue properties that make it a recommended herb to increase breast milk production in nursing moms • Increases the production of corticoids and prolactin, which improve the quality and the amount of breast milk produced by a lactating mother • Stimulates the secretion of steroid hormones that improve milk

		production & also increases breast weight
4.	*Leptadenia reticulata*	• Nourishing effect for every part of the body • Corrects the metabolism, digestive system and enhance the health status of the body • Possesses the vigorous lactogenic, anabolic & galactogogue effect • Improves milk production, maintains appetite & digestion
5.	*Withania somnifera*	• Classified as an herbal adaptogen as it helps adapt to stress especially in postpartum • Gently support the adrenal system, reducing irritability and jangled nerves, while serving as a gentle support to the immune system • Clinically proven for anti-stress & anxiolytic effects
6.	*Allium sativum*	• Used as a galactogogue • Garlic's odor is transmitted to breastmilk, which increases infant sucking time acutely & enhances the breastfed infant's food choices in the long term
7.	Zinc Calyx	• Important during lactation because it is the only source of Zinc for breastfed babies • Babies need zinc to support their immune system and protect them from diseases • Zinc deficiency has been associated with poor lactation • One study even suggests that women with abnormally low supplies in Zinc can have trouble breastfeeding

Regarding herbal galactagogues including YU-06/2020, the evidence is also adequate to guide clinical recommendations as the proposed galactogogue helps the nursing mother to address lactation related challenges by offering holistic series of benefits apart from inducing lactation naturally.

COMPETING INTERESTS:

Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.

NOTE:

The study highlights the efficacy of "ayurveda" which is an ancient tradition, used in some parts of India. This ancient concept should be carefully evaluated in the light of modern medical science and can be utilized partially if found suitable.

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