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Popular Article

Importance of herbal galactagogues for increased milk production in animals

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Abstract

Galactagogues are drugs that help with the start-up, maintenance, and expansion of adequate milk production. Galactagogues cause pharmacological effects that interact with dopamine receptors to raise prolactin concentration and, as a result, increase milk production. Synthetic drugs that are readily available on the market have negative effects on the neuro-endocrine system that regulates lactation. Their continued use has resulted in toxicity, which creates a risk to both humans and animals' ability to maintain normal health. Therefore, traditional herbs have captured the attention of researchers because they are readily available, affordable, and may not leave any toxic residues in milk. Even though the majority of these herbal remedies haven't been tested, their long-standing use suggests that they are both secure and efficient.

Key Words: Galactagogues, prolactin, dopamine, milk, herbal

Introduction

Galactagogues are drugs that help to start, maintain, and increase adequate milk production (Asimov et al.,1991). Galactagogues can be manufactured, derived from plants, or produced naturally. By inhibiting dopamine-producing neurons or blocking hypothalamic dopaminergic receptors, they affect the adreno-hypothalamo-hypophyseal-gonadal axis. These drugs block dopamine receptors to increase prolactin secretion (Gabay et al.,2002). The discovery of novel active compounds with novel structures that have the potential to function as a natural lead compound for the development of new galactagogues can be encouraged by phyto-pharmacological research on natural products. Although the majority of these herbal remedies haven't been thoroughly, scientifically, or systematically examined, their historical use suggests that they are both safe and effective. Table 1 compiles some significant herbs and their impact on galactopoesis.

Table-1: Herbs with galactopoietic effects have been reported.

Common name	Botanical name	Parts used	Effects	Reference
Alfalfa	*Medicago sativa*	Leaves	Estrogenic and lactogenic stimulant, presence of "TRH-like material" in turn stimulates prolactin release.	Zuppa *et al.*, 2010
Anise	*Pimpinella anisum*	Seeds	Anti-spasmodic, mildly estrogenic.	Abascal *et al.*, 2008
Black seed/ Black cumin	*Nigella sativa*	Seeds	Analgesic, anti-inflammatory, galactopoetic, improves FCR in buffalo and lambs.	Sharrif *et al.*, 2011
Caraway	*Carum carvi*	Seeds	Post-partum galactagogue and lactational herbs.	Shojaii *et al.*, 2012
Fennel	*Foeniculum volgare*	Seeds	Carminative, anti-spasmodic, anti-inflammatory, promote milk ejection, stimulates milk flow, and increases udder milk production. Contraindicated due to its allergic and estrogenic effects.	Abascal *et al.*, 2008
Fenugreek	*Trigonella foenumgraecum*	Seeds	Anti-inflammatory, antispasmodic, emmenagogue, galactogogue, hypotensive, oxytocic, stimulate milk ducts of mammary gland tissue, promotes milk ejection, Contraindicated in pregnancy due to its uterotonic effect.	Ghedira *et al.*, 2010
Jivanti	*Leptadenia reticulate*	Root	Increase milk yield and correct milk irregularity.	Bawra *et al.*, 2010
Marshmallow	*Althaea officinalis*	Root and leaf	Synergistic galactogogue effect with alfalfa, blessed thistle and fenugreek	Gudej *et al.*, 1991
Milk thistle	*Silybum marianum*	Leaves and seeds	Galactogogue, cholagogue, seeds increase milk supply, side effects include allergy and diarrhoea.	Zuppa *et al.*, 2010
Raspberry/ Red raspberry	*Rubus idaeus*	Leaves and fruits	Galactogogue effect uncertain, help the uterus to recover and regain its size and shape quickly following parturition.	Shinde *et al.*, 2012
Shatavari	***Asparagus racemosus***	**Root**	**Prevent infertility and miscarriage, increase milk supply and weight of the mammary glands, inhibits involution of lobulo-alveolar tissue and maintained milk secretion.**	**Sharrif *et al.*, 2011**

Herbal galactagogues under commercial use

Some of the herbal galactagogues produced by various pharmaceuticals to protect the health of the animal and the end user include Anifed, Galog, Galactin, Immu-21, Leptaden, Payapro, Ruchamax (appetiser, restorative, carminative, stomachic and tonic), and Calshakti platina (Zuppa *et al.*,2010). Due to their promising effects, jivanti and shatavari are frequently used as ingredients in the creation of these pharmaceuticals. Table 2 lists a few of the most popular polyherbal preparations along with their dosage, brand name, and name of the manufacturer.

Table-2: Market-available pharmaceuticals used as galactagogue's (Behera *et al.*, 2013)

Brand name	Dosage	Company
Alfimilk	10g OD	Vetnex
Lactofat	30g per day	Dosch
Payapro	Four boli daily	Ayurvet
Ruchamax	15 gm OD	Ayurvet
Leptaden	10-15 tabs bid	Alarsin
DudhNahar	**Forty biscuits daily**	**Abhumka herbal**

In addition to the ones mentioned above, livestock farmers frequently use other herbal remedies to increase milk production in their animals, including Dugdhdan (Cattle remedies), Milkvet and Lactovet (Rakesh), Lactomore (Indian herbs), Galactin Vet (Himalaya), Galog bolus and Milk It (Natural remedies), Galactomax (Century), Increlac bolus (TTK), Milkfit and Milkmore (Arosol), Milkomax (Neospark), Milktab (Cipla) and Lactoboon (Lyka).

Herbal anti-galactagogues

In contrast to herbs with galactagogues properties, some herbs are classified as anti-galactagogues (opposite to herbs with galactagogue properties), which are contraindicated during lactation because their constituents are excreted as potentially toxic milk residues. Several plants, including Alkanet (*Alkanna tinctoria*), Borage (*Borago officinalis*), Butterbur (*Petasites hybridus*), Coltsfoot (*Tussilago*

farfara), Comfrey (*Symphytum officinale*), Joe-pye weed (*Eupatorium purpureum*), and Indian snake root (*Rauwolfia serpentine*), contain alkaloids that are highly hepatotoxic and are readily excreted through milk (Shinde *et al.*, 2012).

Conclusion

There is widespread use of natural and synthetic lactation-inducing substances, and numerous medical literatures have been written about the effectiveness of different galactagogue's. In this article, we've compiled a list of the most popular plants used as galactagogue's in veterinary medicine.

References

Abascal, K. and Yarnell, E. (2008) Botanical Galactagogues. Altern. Complement. Ther.14(6): 288-294.

Asimov, D. and Krouze, H. (1991) Composition and somatic cell count of milk in conventional and agro-ecological farm, Brazil. Livest. Res. Rural Dev. 17: 1734-1740.

Bawra, B., Dixit, M., Chauhan, N. S., Dixit V. K. and Saraf, D. K. (2010) *Leptadenia reticulata* a Rasayana Herbs: A Review. Asian J. Plant Sci.9: 314-319.

Behera, P. C., Tripathy, D. P. and Parija, S. C. (2013) Shatavari: Potentials for galactogogue in dairy cows. Indian J. Tradit. Know. 12(1): 9-17.

Gabay, M. P. (2002) Galactagogues: medication that induce lactation. J. Hum. Lact. 18: 274–279.

Ghedira, K., Goetz, P. and Le Jeune, R. (2010) Fenugrec: *Trigonella fœnum-græcum* L. (*Fabaceae* ex. *Leguminosae*) Phytothérap. 8(3): 180-184.

Gudej, J. (1991) Flavonoids, Phenolic Acids and Coumarins from the Roots of *Althaea officinalis*. Planta Med. 57(3): 284-285.

Sharrif, M. M. (2011) traditional usages (Black seed) The Free Library, http://www.thefreelibrary.com/. a0253057724, Accessed on 01-02-2014.

Shinde, P., Patil, P. and Bairagi, V. (2012) Herbs in pregnancy and lactation: A review appraisal. Int. J. Pharm. Res. Sci. 3(9): 3001-3006.

Shojaii, A. and Fard, M. A. (2012) Review of Pharmacological Properties and Chemical Constituents of *Pimpinella anisum*. ISRN Pharm. Article ID: 510795.

Zuppa, A. A., Sindico, P., Orchi, C., Carducci, C. and Cardiello, V. (2010) Safety and Efficacy of Galactogogues: Substances that Induce, Maintain and Increase Breast Milk Production. J. Pharm. Pharmaceut. Sci.13(2): 162-174.