Herbal Treatment in Animal Reproduction

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Abstract

India has rich biodiversity of medicinal plants and traditional knowledge on herbal medicines to treat the animals and human beings. Reproduction disorders affect the production potential of the animals. Treatment of post partum disorders and infertility is a great task in animal reproduction especially in cattle. We are using the synthetic chemical drugs /medicines/ hormones to treat the reproductive disorders but it causes public health hazard and severe side effects on the animal reproduction. But the herbal drugs fewer side effects and more benefits and less health hazards. This paper describes the herbal medicines/ plants which are used in animal reproduction to cure reproductive disorders.

1. Introduction

India has one of the sophisticated medical cultures with a tradition of over 5000 years. The livestock owners in India have been using traditional medication based on plant formulations since time immemorial. Livestock raisers and healers everywhere have traditional ways of classifying, diagnosing, preventing and treating common animal diseases. Many of these *Ethno veterinary* practices offer viable alternatives or complements to conventional, Western style Veterinary Medicine especially where the latter is unavailable or inappropriate. The unique advantage is that India is one of the world's 12 mega diversity countries accounting for 8% global plant genetic resources and higher share of microorganisms. The success of dairy cattle and buffalo husbandry lies in ensuring proper and optimal reproductive rhythm of each individual female in the herd. Infertility in dairy animals causes tremendous economic losses to the farmers and to the nation by decreasing milk yield, the number of calves produced and by increasing culling rate. It is estimated that around 18-40% cattle are culled per annum due to infertility or sterility in India (Kaikini, 2002). Considerable attention has been focused on reproductive endocrinology from last 2 to 3 decades as a mean to identify specific problems and to adopt therapeutic measures by using exogenous endocrine substitutes (hormones and their analogues) for augmenting fertility in farm animals (Hukeri, 1995). Many hormonal preparations like GnRH, eCG, and progesterone alone or in combination have been tried on infertile animals to restore the fertility of dairy animals, but the results of hormonal treatments for infertility are unsatisfactory. The major constrains in use of various hormonal preparations are high cost and non availability of commercial preparations with ease (Kaikini, 1989), since more than 70% of milch animals are owned by small, marginal farmers and land less labourers. Therefore it is demand of hour to find out suitable, effective and cheap alternative therapy to meet this requirement. Hence, the alternative medicines, in particular, herbs can play an effective role in efficient reproductive management and successful rearing of our animals.

2. Reproductive Disorders

Post partum period is the most crucial transitory phase in bovine life when various physiological, gynaecological, biochemical changes occur. During this period the cattle is exposed to high risk of infection to uterus as the anatomical barriers are breached and genitilia remains open for various days (Goff and Horst, 1997). Post parturient retention of

foetal membranes & gynaecological disorders like anoestrus, endometritis, metritis, pyometra etc. causes severe economic loss. There is reduced milk production, delayed in involution of uterus and subsequent delayed conception, early embryonic mortality and the problems of repeat breeding or even permanent infertility (Narasimhan and Deopurkar, 1994). Retention of fetal membranes is one of the most common diseases in post partum period in cattle. It can lead not only to persistence of putrefying tissue but also to increased incidence of metritis, decreased milk yield and poor fertility (Laven and Peters, 1996). Indiscriminate use of antibiotics for treatment of uterine infections has lead to emergence of resistance strains. As a result of this the attention is now moving towards the herbal formulations (Hemiaiswarya et al*.,* 2008).

Plants have been used as medicine in the treatment of animals from thousands of years since ancient time. Plant based drug (natural drugs) may be used directly that they may be collected dried and used as a therapeutic agents (crude drugs) or their active principles, separated by various chemical process which are employed as medicines. The active principles of plants may be carbohydrates, glycosides, tannins, lipids and alkaloids (Ramachandran and Mehtani, 1990). Although the traditional medicines are readily available, affordable to the local population, this system of veterinary medical care has not been promoted and developed to the desired extent. World Health Organisation has also recommended the promotion of native practices and conservation and cultivation of medicinal plants (Dalal, 1992).

It is becoming increasingly evident that many herbal remedies are indeed of considerable medicinal value and needs fullest exploitation. Despite these facts, very little attention has been given to systematically describe and explore the traditional herbal medicines used by the local and tribal communities in specific areas for the control and treatment of various reproductive disorders in farm animals. More appreciation and systematic work on the plant based remedies used by the herbalist is required to prove their value and efficiency to treat reproductive disorders and also to develop new drugs from their own resources. The reliance on cheap, efficacious and scientifically proven traditional plant based drugs would add substantially to our national economy.

Medicinal plants and reproduction use of certain plants and their preparations in fertility regulation particularly as emmenagogue (agent that will induce menstruation) and for various other reproductive ailments is very well documented in ayurvedic. Number of plants or preparations are mentioned as fertility according to popular believes, ancient traditions and their standard works by different workers.

3. Herbs Plants

Plants are the most commonly used ingredients in the preparation of ethnovet medicines. All parts of the plants, including leaves, bark, fruits, flowers, seeds are used in medicinal preparations. At present over 35,000 plants are known to have healing properties. At least 1,00,000 species of plants are used by humans for as food, medicine, fibre, fuel, oils, shelter, poisons, intoxicants, ornamentals and other purposes. By virtue of specialized biochemical capabilities, plants synthesize and accumulate a vast array of primary and secondary metabolites/ chemicals. For reasons both cultural and economical, 75% of the world's population depends on medicines from plants. Of the proprietary medicines in the western market, 35% are phytic in origin; however these medicines are derived from less than 0.1% of known plant species. So far, more than 100,000 biologically active secondary plant compounds have been isolated from higher plants, these diverse structures falling into four main chemical classes. The phenolics (phenols, flavonoids, quinones, tannins and lignins), terpenoids (monoterpenes, lactones, diterpenes, saponins and others), sulphur compounds (glucosilates, disulphides and acetylenic thiophenes) and nitrogen compounds (alkaloids, amines, non-protein amino acids and cyanogenetic glycosides). Certain organic acids and polyacetylenes are also known to exist (Cotton, 1996).

4. Plants Used in Various Disorders

A wide range of medicinal plants and their preparations are found to be useful in treatment of reproductive disorders and other related reproductive ailments (Nadkarni, 1954). They include *Abroma augusta* (dysmenorrhoea), *Amorphophallus sylvaticus* (amenorrhoea), *Aristolochia bracteata* (amenorrhoea, dysmenorrhoea), *Balsamodendran myrrah* (amenorrhoea and other atonic uterine affections), *Cardiospermum helicabum* (amenorrhoea), *Datura alba* (dysmenorrhoea), *Eceipta erecta* (internal and uterine haemorrhage), *Entada pursoetha* (uterine disorders), *Musa sapientum* (dysmenorrhoea), *Mytrus communis* (Prolapse of uterus), *Nigella sativa* (puerperal and uterine diseases), *Pandanus odoratissimus* (sterility and threatened abortion), *Parmelia perlata* (amenorrhoea), *Pedalium murex* (uterine and puerperal diseases), *Plantgo* species (postpartum complaints), *Salvadora* species (amenorrhoea), *Rubia cordifolia* (amenorrhoea to promote lochial discharge), *Sapindus trifoliatus* (amenorrhoea), *Salvadora persica* (stimulant, tonic in amenorrhoea), *Semecarpus anacordium* (amenorrhoea, dysmenorrhoea), *Saraca indica* (uterine affections, haemorrhages), *Sesamun indicum* (amenorrhoea), *Viburnum foetidum* (uterine disease, post partum haemorrhage, threatened abortion) and *Viola species* (uterine prolapse).

Exapar is a combination of such herbs with documented action profile e.g. *Aloe barbadensis* (Gupta, 1982), *Aristolochia indica* (Chopra et al., 1982), *Gloriosa superba* (Tewari et al*.,*

1967), *Peganum harmala* (Kapoor, 1990), *Plumbago zeylanica* (Kapoor, 1990) and *Rubia cordifolia* (Nadkarni, 1954) which has also been used for treatment of reproductive disorders. Similarly, the new coded formulation AV/UTL/17, which is the combination of different herbs namely *Lepidium sativum, Citrullus colocynthis, Plumago zeylanica* & many more are also found to be efficacious in treatment of post partum gynaecological disorders in the field such as expulsion of membranes, restoration of lochial discharge and involution of uterus in bovines (Singal, 1996; Walia et al., 2010), and in improvement of reproduction efficiency in buffaloes when administered prophylactically (Khanna et al., 1997).

5. Plants Used for Anoestrus

Anoestrus is defined as a prolonged period of sexual quiescence. It may be physiological (pubertal, a short interval post partum or during pregnancy) or pathological where the ovaries may either be quiescent (true anoestrus) or may contain a progesterone secreting luteal tissue due to some uterine pathology. Various methods for management of true anoestrus through alternative medicines have been suggested.

Anoestrus in cows can overcome when they are fed with the fenugreek (*Trigonella foenum-graecum*) powder (Mishra et al., 2002). Approximately 2-3 kg unripe papaya (*Carica papaya*) fruits are chopped and the pieces are fed to the animal once a day for 4-5 days to bring the animal into heat (Nayak, 1995). Cucumber leaves are fed to the animal to bring it to the regular heat (Chander and Mukherjee, 1994). *Aegele marmelos* (bili leaves) are fed over 6-7 days to animals to overcome anoestrus problem. *Leptadenia reticulate, Asparagus racemosus, Couroupita guianesis* are for the same purpose (Koradia, 1995).

Feeding bamboo leaves brings cattle into regular heat (Gupta, 1993). Feeding of leaves of jute plant (about 2-2.5 kg) brings the animal into heat (Gupta, 1993). Feeding leaves of Mann tree (approximately 15-20 kg) can overcome anoestrus condition (Gupta, 1993). A mixture of black pepper (10 grains) and vanghuchi (20-25) is given twice a day at the interval of 6-8 hours for 1-2 days for treatment of anoestrus.

A leaves of silk cotton tree are powdered together with fermented boiled rice water and the extract is administered to cows orally as a remedy for reproductive problems. Approximately 500 ml, three times a day for 3 consecutive days (Ranjan and Sethuraman, 1997). Pods of dudheli (*Pergularia daemia*) are used for treatment of anoestrus (Parmar, 1998). Three to four seeds or fruits of bhilama (*Semecarpus anacardium*) are fed to the animal very day for 3-4 day when it is not coming into heat or fails to conceive successfully (Bechardas, 1992).

6. Plants Used for Retained Placenta

Retained placenta is an important post partum complication. The placenta may be retained because of lack of expulsive forces or failure of separation of fetal cotyledons and maternal caruncles. Since it has multiple etiologies, the therapy commonly advocated ecbolics, drugs and /or hormones stimulating uterine contractility, minerals (mainly Ca and P), enzymes which may facilitate placental separation and antibiotics along with supportive therapy. The herbal remedies may help in uterine contractibility or have antimicrobial properties.

Bamboo leaves and bark are boiled with paddy husk and fed to cows for expulsion of placenta (Verma, 1998). *Ficus benghalensis* is used for treatment of retained placenta (Vale, 1997). Leaves and twigs of ber (*Zyzyphus mauritiana*) are collected and burnt. The ash is given to the animal along with water to induce the placenta to drop (Baraiay, 1994). About 250 g of leaves of jingara is used for retention of placenta with 60% success rate (Rabari, 1994).

Cotton shells and roots of cotton plant are used for retention of placenta (Darbar, 1993). *Legernaria vulgaris* (ruraikai) fed to animal to induce the placenta to drop (Balasundaram, 1998a). The tassles of 20-25 maize cobs are boiled in water and given to the animal after calving to help dropping of the placenta (Baraiya, 1999). Approximately 1 litre of sugarcane leaf juice is fed to the cattle overcome the retention of placenta (Ninama, 1999).

For easy expulsion of placenta after delivery approximately 2 kg pearl millet (*Pennisetum americanum*) grain, 100g of methi (*Trigonella foenum-graecum*) seeds, 50 g of asalio (*Lepidium sativum*), 25 g of suva (*Anethum graveolens*) and 500 g of jiggery are boiled in water for one hour. The cooked feed (after cooling) is fed to cow or buffalo after delivery. The placenta expels out within 2-3 hrs after this treatment (Vaghasiya, 2001). The root of jepti (500 g) is used to remove the placenta from buffaloes after delivery. *Abrus precatorius*, *abutilon indicum*, *Anethum suva*, *Ficus glomerata* are used to remove placenta (Singh and Khan, 1999).

The root bark of *Caesalpinia bonducella* (kanarej) used to remove placenta after delivery. It increases the contractile force in isolated strips of pregnant rat myometrium preparation in a concentration dependant manner (Ali Sagar et al., 2003).

Raspberry leaves when fed to pregnant mares during last 45 days of gestation reduced the incidence of peri-parturient diseases viz prolonged labour, retained placenta, etc. garlic has cleansing action and helps expulsion of retained fetal membranes and placenta. Other plant extract such as Thyme (*Thymus sepillum*), starwort (Helonias root) also have the properties to evacuate the retained placenta and metritis. Further the scientists from Central Arid Zone Research Institute, Jodhpur has also validated that chick pea flour mixed with butter milk (rabri) helps to expel the retained fetal membrane. In this the

parched chick pea flour (1 kg) mixed with butter milk was fed to the affected animals (4 cows and 3 buffaloes). The retained was expelled out within 24 hours in majority of animals. Kheem (*Leptadenia pyrotechnica*) root, chrmi (*Abrus precatorius*), chopped bamboo leaves or sticks and decoction prepared with black pepper, coriander, ajwain, sonth and methi have also been used as cleansing drought by farmers of Rajasthan. An electuary prepared from liquid extract of ergot (8 ml), quinine sulphate (5 g), magnesium sulphate (200 g), pulv. Gentians (16 g) and molasses are known cleansing after parturition.

Root of *Cichorium intybus* plant is mixed with root of *D. strictus*, tender culms of *Phragmites maxima,* fruits of *Foeniculum vulgare*, and solidified sugarcane juice are crushed and boiled and the liquid is strained and given to hasten the afterbirth in buffaloes and cows (Ali, 1999).

Whole plant of *Ludwigia octovalvis* is crushed and made into a fine paste which is given orally to buffaloes and cows to hasten afterbirth (Ali, 1999).Fresh leaves of *Saccharum spontaneum* are fed to buffaloes to hasten afterbirth (Ali, 1999).

Gum of *Acacia nilotica subsp. Indica*, leaf paste of *Basella alba*, whole plant of *Boerhavia diffusa*, *Oxalis corniculata* and *Centella asiatica*, oil of seed of *Brassica napus*, dried flower of *Corchorus capsularis*, root of *Ficus benghalensis* and *Ziziphus mauritiana*, leaf of *Mimosa pudica* and *Musa paradsiaca* and whiskey of *Saccharum officinarum* are used to treat retention of placenta in animals (Kumar and Kumar, 2013).

Bulb of *Allium cepa*, root of *Argemone mexicana*, fruits of *Mesua ferrea* and husk of *Plantago orbignyana* are used to treat mastitis (Kumar and Kumar, 2013).

There are various commercially available indigenous preparations available such as Prajana HS (Indian Herbs, Natural Remedies), Janova (Dabur Ayurvet), Aloes compound (Alarsar), Fertivet (Ar Ex Labs), Sajani (Sarabhai), Heat-Up (Century), Heatraj (Rajan) etc. These formulations are potent combination of herbs formulated scientifically to induce ovarian activity. The proposed mechanism of action is similar to gonadotrophin.

7. Plant Used to Improve the Conception Arte

If a heifer does not conceive after attaining puberty, 200 g of germinated Bengal gram (*Cicer arietimun*) soaked overnight is fed to the animal continuously for one week. Along with this pounded leaves and unripened fruit of yaanai nerungi (*Pedalium murex*) may be given once a day for three days without adding water. After a week, the heifer will show heat symptoms. If inseminated at this stage, the heifer will conceive horse gram can also be given instead of Bengal gram (Balasundaram, 1998b).

Approximately 2 kg^{-1} of Gundi (*Cordia spp*.) rushed and the juice is extracted. One kg of sugar and 500 g of Majith are added to the extract along with 3 litres of water and given are halved and mixed and only 2 litres of water are used. This mixture is given to buffaloes during 5^{th}, 8^{th} month (Patel, 194). Thoroughly boiled unripe fruits of *Trichoxanthus tricuspidata* are given to cows to regulate fertility (Gaur et al., 1992). *Potentilla fulgens* (entire plant) is given to cows to regulate Fertility (Gaur et al., 1992). Root extract of *Zyzyphus rummularia* is given 2-3 times after delivery to treat prolapse (Sebastian and Bhandari, 1984). Leaf paste of *Murraya koenigii* is fed to barren cows to promote fertility (Sudarsanam et al., 1995).

Plant paste of *Hybanthus enneaspermum* is fed to barren cows to promote fertility (Sundersanam et al., 1995). 50 g plant paste of *Echinops echinatus* is fed barren cows to enhance the fertility (Reddy and Sudarsanam, 1995). About 80-100 g of leaf pulp of *Aloe vera* is mixed with common salt and fed to pregnant cattle once or twice until delivery for prophylactic to miscarriage (Bhattari, 1992).

Conception rate can be improved in cows and buffaloes by feeding medicines prepared by mixing and powdering of herbs like *Tinospora cordifolia*, *Cassia fistula*, jack fruit (tender leaves), *Plumbego zeylanica* (root), *Clerodendrum inermis* (leaves) (Honnegowda, 2000). To prevent abortion, farmers from Mangrol taluka feed pieces of stem of banana (*Musa paradisiacal*). After conception, buffalo is fed 10-15 kg, cow is fed 5-10 kg pieces of stem of banana. It is fed for five times over a period of 2-3 days. It helps to reduce internal heat and improves health. This practice has been in use for the last 30-40 years (Multani, 1996).

The garlic plant or cloves are to be effective for management of infertility, prevention of abortion and cleansing action post abortion. The raspberry plant (whole chopped) or leaves extract along with either chopped garlic plant or 4-5 cloves fed twice daily to bovines reduced chances of post partum infertility. The raspberry leaves have very high minerals and vitamin content. The ginseng plant has hormone balancing properties.

Whole plant of *Hydrilla verticillata*, seed of *Lens culinaris subsp. culinaris*, *Myristica fragrans, Ricinus communis, Triticum aestivum* and flower of *Pandanus tectorius* are given to both female and male to increase the conception rate (Kumar and Kumar, 2013).

8. Plants Used for Uterine Infection

The immuno modulatory property of *Aristolochia indica* (Isharmur) can be proved an aid in preventing the uterine infection by augmenting local immune system (Ali Sager et al., 2003). Approximately 100g of root or bark of the *Convolvulus microphyllus* (roots) powdered and mixed with 300 ml of water and boiled. This concoction is filtered and then cooled. This is

then given to the affected animal once a day for 3 days. This treatment cures the uterine infection and soon afterwards they can be able to conceive (Parmar, 1999).

9. Plants Used for Smooth Delivery

For smooth delivery, *Cheonopodium album* (boiled grain), *Girardinia diversifolia* (dried leaves), *and Hedychium spicatum* (seeds) can be fed to animals (Kumar et al., 1999). 20-25 leaves paste of *Argyeria nervosa* with about 25 ml of rice beer is fed to cows for smooth delivery of the fetus (Pal, 1980). Decoction of *Daedalacanthus roseus* roots with 50 ml country liquor is given to cows for proper development of the fetus and to promote milk secretion (Pal, 1980). Stem bark of *Bombax ceiba* is crushed and slime is applied on the vaginal ostium to facilitate delivery (Bhattari, 1992). Inflorescences of the plant mixed with fruits of *A. indicum* and *Piper nigrum*, kali mirach are crushed and made into a fine paste which is given to the labouring buffalo to facilitate smooth delivery (Ali, 1999). The decoction of root suckers of *Phoenix acaulis* is given to cows for prolapse of uterus before delivery (Ali, 1999).

10. Plants Used for Cervico Vaginal Prolapse

Cervico vaginal prolapse during pregnancy can be successfully managed by feeding flour of Singhara (water chestnut) (Singh et al., 2002). Acial portion of cactus (250-300 g) is crushed and mixed in 200 g buttermilk and administered orally once to the animal to corrected the prolapse of vagina (Vankar, 1994). Fruit juice of *Citrus medica* is mixed with powdered fruits of *Cuminum cyminum* is given for prolapse of uterus before delivery in buffaloes (Ali, 1999). Similarly, freshly made paste of the whole plant *of Gomphrena serrata is* obtained by crushing, is given orally to buffaloes for prolapse of uterus before delivery (Ali, 1999). Leaf paste of *Trichodesma indica* is applied locally to treat mastitis (swellings of mammary glands) of buffaloes and cows and the plant paste is given orally and also applied externally on the back of cows for prolapse of uterus after delivery (Ali, 1999).

11. Plants Used for Repeat Breeder

Medicinal plants such as *Lawsonia inermis* (leaves), *Musa paradsiaca* (leaf extract), *Cordial* sp (leaves), *Convolus microphyllus* (roots), *Cicer arietimun* (germinated Bengal gram), *Pedalium murex* (fruits) are effectively used for treatment of repeat breeder (Das et al., 2002).

12. Plants Used for Follicular Dynamics

Jayakumar (1997) studied the effect of *Aloes barbadensis* and *Aristolochia bracteata* on the onset of puberty and ovarian function in rats using ethanolic extract. He observed that both the plants significantly advanced the onset of puberty than the control animal. He also observed that aloes barbadensis at a dose level of 300 and 500 mg kg^{-1} body weight had improved the follicular development and steroidogenic activity.

Kabir et al. (2001) studied the effect of *Abroma augusta* (root) and *Nigella sativa* (seed) on induction of oestrus in anoestrus buffaloes and found that combination of these two plants in 2: 1 ratio was effective in inducing estrus in 50% animals with conception rate of 33.33%.

Mehrotra (2002) studied the effect of *Murraya koenigii* (leaf) and *Urtica dioica* (root) on ovarian function in goat and cattle and observed that 1000 mg kg^{-1} of ethanolic extract of Murraya koenigii significantly advanced the onset of puberty, increased the number of large surface and embedded follicles and also increased expression of ovarian glucose-6 dehydrogenase and 3 beta HSD enzymes. In anestrous goats, he observed that Murraya koenigii treatment significantly increased the number of medium and large sized follicles and also oestrus induction and ovulation. He induced estrus in 57.14% and 28.5% cows with conception rate of 75% and 50% respectively in anoestrus cattle. Rajkumar (2004) treated anoestrus cows with *Trigonella foenum-graecum* at the dose rate of 200 g^{-1} day^{-1} and *Saraca asoca* at the dose rate of 50 g^{-1} day^{-1} and observed the anoestrus induction of 83.33 and 66.66% and conception rate of 54.54 and 22.22% respectively. He observed higher level of estradiol hormone in treated groups than control.

13. Plants Used for Semen Production

Herbs have been used for curing ailments for many centuries. Sexual issues are no different. Civilizations from every continent have discovered numerous plants and herbs that help to produce more semen. These herbs and plants help to attain stronger ejaculations, higher sperm counts, greater semen volume, and better overall sexual health. Horny goat weed can increase sperm volume and also is reputed to raise testosterone levels and stimulate the sensory nerves, thus serving as an aphrodisiac (Rost, 2009) and this herb traditionally has been used to treat impotence. Rost (2009) again pointed out that Gokshura, also called Ji li or tribulus terrestris, is a Chinese herb that stimulates sperm production due to its steroidal saponin content. This herb also is reputed to improve sperm's survival time, motility and quality and this herb also increases sperm production in rats (Martino-Andrade et al., 2010). Jayaganthan et al. (2013) reported that feeding *Tinospora cordifolia* in bucks enhanced the semen volume, sperm motility, percentage of viable spermatozoa, sperm concentration, morphologically abnormal spermatozoa, daily sperm production, sperm survival, sex libido and antioxidant profiles. Frydrychova et al. (2010) reported that feeding of mixture of *Eurycoma longifolia*, *Tribulus terrestris* and *Leuzea carthamoides* in boars enhanced the semen volume, sperm mo-

tility, percentage of viable spermatozoa, sperm concentration, morphologically abnormal spermatozoa, daily sperm production, sperm survival and sex libido. Maca-Increases semen production, and is well known to boost libido in both sexes. *Tribulus Terrestis* is a well known aphrodisiac. Some studies have also hinted at an increased testosterone level. Horny Goat Weed (*Epimedium sagittatum*)-increases sperm cell production, and is a common aphrodisiac. It is also known to help with impotence and erectile dysfunction (ED). Sa*w palmetto* is a very good for the prostate and can be found worldwide. Shatarvi (*Tian Men Dong*)-a traditional Chinese medicine that is recommended for ED and impotence. Sarsaparilla herb has shown an increase in testosterone and progesterone levels. Muira Puama or Murapuama is well known aphrodisiac from Brazil. It is helpful with ED and impotence, and helps give firmer erections. Cordyceps (Dong Chong Xia Cao) is a Chinese medicine used for centuries as a libido booster. Also lowers blood pressure and improves sleep. Ginko Biloba is known for its "brain-boosting" power, Ginko Biloba has been rumoured to increase libido in both sexes. It also increases blood flow throughout the body. Cardamom is aphrodisiac and has been used for centuries, but still remains largely unproven. Ku Gua increases testosterone levels and is well documented in helping to ease diabetes. Xian Mao is used in Chinese medicine as a safe aphrodisiac and hormone stimulant.

14. Conclusion

Though India has rich biodiversity of medicinal plants and traditional knowledge on herbal medicines, we are running behind in the world market especially from the china, because of failure to absorb technology for scientific validation of traditional knowledge. Many medicinal plants have been reported to be effective in various reproductive disorders, but only few were studied systematically for their effect on infertility management in farm animals. At present there is need to evaluate the validity of Indian traditional medicines to provide health care to our vast livestock population in an ecofriendly way. In the process of incorporating herbal medicines into health care system, safely is of primary importance and hence proper procedure for analysis and screening needs to be implemented and through clinical studies are to be undertaken. The reliance on cheap, efficacious and scientifically proven traditional plant based drugs would add substantially to our national economy.

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