Effectiveness of Urtica urens 6C in increasing milk quantity in lactating Jafarabadi buffaloes for 6 months from the same stable: An observational study.

Dr. Manisha Ahiwale, Dr. Kamlesh Bagmar, Dr. Tapas Kundu, Dr. Gayatri Nimbhore, Dr. Tejashri Thakare, Dr. Kirti Kadam, Dr. Swati Patil ,Dr. Pranali Deshpande, Dr. Shatavari Kokate, Dr. Namita Divate

Abstract:
Buffaloes share 44.1% of milk production in Maharashtra. Jafarabadi breed is highly rendered breed in western Maharashtra.(1) Lactation period in buffalo ranges from 295 to 300 days. Genetic and non-genetic factors affect lactation efficiency in buffalo.(2) National action plan of dairy development vision 2022 aims increase milk productivity throughout country. But we are facing challenges like low productivity of bovine and lack of preventive action against adulteration of milk and use of synthetic steroids as galactagogue i.e., oxytocin. It causes various deleterious effects like decrease fertility of
cattle, excessive hemorrhage. The aim of this study was to observe effectiveness of Urtica urens 6C in increasing milk quantity in lactating Jafarabadi Buffaloes For 6 months from the same stable. Using cluster sampling technique, a sample of 30 healthy lactating, Jafarabadi buffaloes who had not yet received oxytocin injections were studied for 6 months. Pilot study for 15 days capturing the yield before administration of the medicine. For a total of six months, 15-day admission cycles of the medication and a placebo were repeated. After analyzing all data in SPSS, the results indicate that Urtica urens 6C is effective in boosting lactation efficiency in lactating Jafarabadi buffaloes

Introduction:
As indiscriminate use of oxytocin injections is increasing in dairy farming as a galactagogue, homeopathic remedies can be an effective alternative. This study was an attempt to understand the efficacy of homeopathic remedy Urtica urens as a galactagogue in lactating buffaloes. Animal husbandry is growing industry in India. Dairy farming plays a very crucial role in growth of animal husbandry. The onset of lactation is with birth of the calf. Lactation period in buffaloes is approx. 200-300 days after birth of calves following gestation period of 305-320 days. (3)
Lactation is affected by genetic and non-genetic factors. genetic factors include species, breed and individual traits like fertility calving period, etc. non genetic factors like quality of feed, skill of farmer etc.(4) Lactating animals are mainly fed on straw, crop residues and mineral supplements. Galactagogues are medications or substances believed to assist in initiation, maintained, and augmentation in milk production. To increase lactation efficiency various synthetic supplements e.g., Oxytocin, metochloropamazine domoperidone have used widely with fewer known side effects. Oxytocin has been used over past decades as a lactation enhancer in milch animals. Haphazard use of oxytocin injections has led to deterioration of health in milch cattle which include decrease in fertility period of buffaloes, early abortions. also, consumption of milk from buffalo who is injected with such hormonal injection shows effects like hormonal imbalance which is seen as early menarche in females' gynecomastia in males (7) . There are many known and unknown effects of hormonal injections directly on

cattle's and indirectly on humans who consume such milk unknowingly. Now a days awareness regarding use of such injections is slowly increasing. Union of India and the ministry of health and family welfare (MoHFW) through its notification dated April 27, 2018, bearing reference number GSR411, prohibited private sector companies from manufacturing and distributing oxytocin for domestic use.[6] Therefore, we can also see rising support for use of organic ingredients in dairy farming. Use of organic galactagogues is increasing day by day. Herbal supplements like fenugreek seeds, fennel seeds, asparagus has shown efficacy in increasing lactation.[5] Similarly, homeopathy has also shown its utility in animal husbandry. As homoeopathy is known as holistic science which heals the person as whole in rapid, gentle, and harmless manner it should be used more frequently in veterinary field also. Due to lack of knowledge, guidelines, utility of homoeopathy in animal husbandry is not well studied. Through this study we are hoping to understand this less known therapeutic utility of homoeopathic medicine in increasing lactation in buffaloes. Urtica Urens 6C otherwise known as stinging nettle is homeopathic medicine which is considered as galactagogue. it has shown its utility in cases where there is complete absence of milk in humans. has efficacy in cases of agalactia in females associated with anemia, hemorrhages, nutritional deficiencies. Through this study we are going to study this galactopoietic action of Urtica urens in Jafarabadi buffaloes. Homoeopathic literature gives us reference of Urtica urens in lactation Dr. T.F. Allen explains how Urtica initiated lactation in a female who hadn't nursed for 3 years. Dr. Boericke says Urtica urens is major remedy for agalactia and Lithiasis. J.H. Clarke gives us example of the case wherein female who suffered with breast infection and agalactia was cured after administration of Urtica urens.[13][14][15]

Methods and material:

The objective of our study was to observe effectiveness of Urtica urens 6C in increasing milk quantity in lactating Jafarabadi buffaloes. This study took place at Shiva dairy which is located in Savarkar Nagar, Nashik for duration of 6 months. For this study we included 30 lactating Jafarabadi buffaloes who were never administered with oxytocin injections. While diseased buffaloes, calves, old buffaloes, non-lactating buffaloes were excluded from our study. Before beginning our study consent of the owner of the dairy farm was taken. Also consent from Veterinary physician, and homeopathic physician were taken in order to decide appropriate dosage of the medicine. Each buffalo was allotted with token numbers for better identification. At beginning of the study, we observed milk yield of each and every individual buffalo for 15 days this was our pilot study which gave us baseline of milk production of each buffalo independent of any medicines.

Therefore, dosage for administration of medicine was

10 drops of Urtica urens 6C in 1-2 liters of water ----------for 15 days

10 drops of Nihilinum 200 in 1-2 liters of water---------- for next 15 days

This was repeated for 6 months The milk yield of each animal was studied for 30 days along with regular dosage of medicine. At the end of six months the average of each and every buffalo was calculated and this average was compared with our data of our pilot study. This data was statistically analyzed using paired t test with help of SPSS software of statistical analysis in order to infer statistical significance of our study.

STATSICAL ANALYSIS, GRAPHICAL REPRESNTATION OF ANALYSIED DATA:

We used SPSS software for statistical analysis of our data, whereas paired t test was used for our study. For this purpose, two variables in software our average milk yield of each buffalo during pilot study was one variable and average milk yield of each buffalo after administration of medicine was our other variable. After analyzing we obtained values as follows

Mean for P_1 6.2687 while for A _1 was 0.4899,

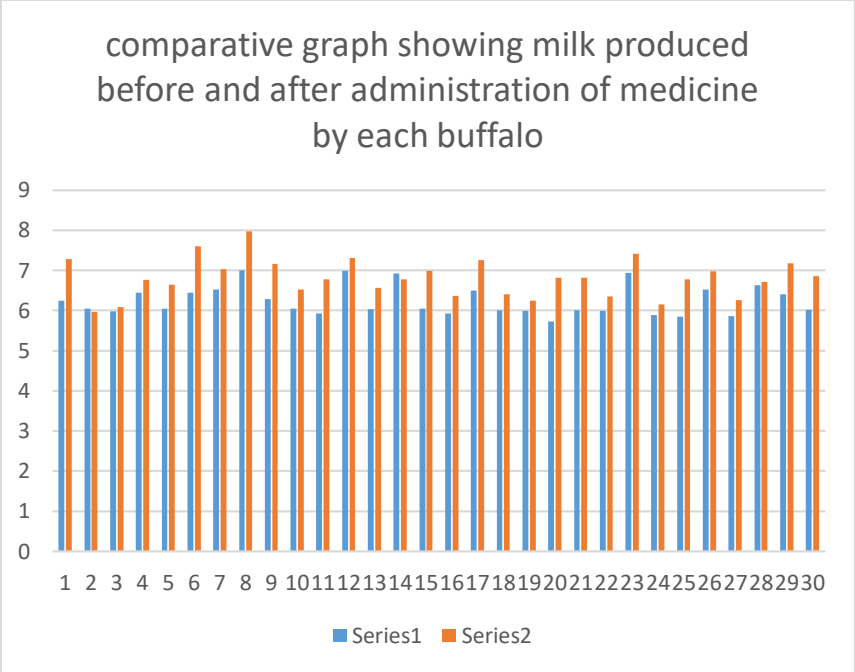
Standard deviation for P_1 was 0.3733 and for A_1 was 0.4899.

Confidence interval was 95%, while t value was 7.9315 and Degree of freedom was 29.

Standard error of difference was 0.064 which should be less than 1.96

Table value of t for 29 degrees of freedom is 2.05 at 5% (0.05) level of significance. We reject the null hypothesis since the calculated value of t (7.9315) is greater than the table value of t (2.05) at 5% level of significance. it is also rejected at 1% level of significance (table value of t = 2.76) therefore the difference is significant.

1	6.25	7.28
2	6.04	5.96
3	5.98	6.09
4	6.44	6.76
5	6.05	6.64
6	6.45	7.6
7	6.53	7.03
8	7	7.97
9	6.28	7.16
10	6.04	6.52
11	5.92	6.78
12	6.99	7.31
13	6.03	6.57
14	6.92	6.78
15	6.04	6.99
16	5.93	6.36
17	6.5	7.26
18	6.01	6.41
19	5.99	6.24
20	5.72	6.82
21	6.01	6.82
22	5.99	6.35
23	6.94	7.41
24	5.88	6.15
25	5.84	6.77
26	6.52	6.97
27	5.86	6.26
28	6.63	6.71
29	6.4	7.17
30	6.02	6.86



Series 1: Average daily milk yield produced by each buffalo during Pilot study.

Series 2: Average daily milk yield produced by each buffalo during administration of medicine.

X-axis: No. of buffaloes.

Y axis: Milk produced in liters.

RESULT:

After analyzing and comparing data following were our results, out of 30 buffaloes, after administration of Urtica Urens 6c, the increase in average milk yield was as follows

1No. of. Buffaloes with increase in milk quantity (>1lit): 3 buffaloes

2 No. of. Buffaloes with increase in milk quantity (>500ml): 13

3.No. of buffaloes with increase in milk quantity: (<500ml): 12
4.No. of Buffalo with no increase in quantity: 02

DISCUSSION:

Dairy farming is an essential source of subsidiary income to small/marginal farmers and agricultural laborers. India has world's largest dairy herd with over 300 million bovines producing over 187 million metric tons of milk. Our country stands first in production as well as consumption of milk. Buffalo husbandry is one of the largest components of dairy industry with largest livestock population (57.3%) of worlds total buffalo population. Overall market value of this industry is whopping 13.174 billion and expected to reach 30.840 billion by 2027. In the world's second most populous country this means a huge employment sector with unlimited opportunities. But these come with some major challenges like low productivity of Indian bovines, lack of action against adulterated milk, etc. The National Action Plan for Dairy Development Vision 2022 aims to increase milk production from 163.7 MMT to 254.55 MMT by 2022. To overcome these challenges and achieve our goal of safe yet increased production of milk we need to improve the routine practices in the industry. To increase production, injections like oxytocin are used at dangerous proportions. They produce harmful effect on not just the health of the animal it is injected into but also in humans who consume the milk produced from such animals. These drugs decrease the reproductive ability of cattle over the time eventually rendering them barren. Indiscriminate use of these drugs can cause hormonal imbalance in humans. Due to hormonal imbalance created by exogenous sources of hormones, the age at which girls used to attain menarche has come down drastically from 14 to 16 years of age to 8 to 10 years of age. It causes gynecomastia and infertility in males. High levels of oxytocin increase the risk of abortion in pregnant women and babies can be born with deformities. It increases risk of hemorrhage after childbirth and can also inhibit breastfeeding. To avoid all these hazards and to gain nutritional benefits of milk along with higher production, it's necessary to find out newer, safer and effective alternatives of conventional galactagogues. Homeopathy can play a pivoting role in agro and dairy industry too as it is based on natural laws which are true in any given time and space. Hence this study is a contributory effort in exploring new horizons for homeopathy and also making our food safe and residue free. The study set up was located at Avhad dairy farm, Savarkar Nagar, Nashik.30 lactating Jafarabadi buffaloes were selected as study sample from same stable as to avoid any irregularity in diet or environment they live in. They were numbered for identification and tagged accordingly. The medicine selected for study under the guidance of our panel teachers was Urtica urens 6C. According to Dr. Clarke, it has ability to efficiate milk flow in females. Also Dr. T.F. Allen had observed therapeutic ability of Urtica urens in one of his cases of agalactia. For first 15 days, every day milk yield of each buffalo was noted down without any intervention. This data formed our pilot study. On 16 th day, we started medicine administration once in a day. It continued for 15 days. Then for next 15 days we kept them on placebo once in a day. This was repeated for 6 months. We observed variable changes in the milk yield after administration of medicine. Daily milk yield of each buffalo was carefully noted down with immense help of the staff of Avhad dairy. On completion of our study, the data was analyzed using the SPSS software which showed our data to be statistically significant. Paired t test was applied. We compared the average daily milk yield of consecutive 6 months to our pilot study.

Overall increase in the milk yield is as follows:

>1 liter: 3 buffaloes
>500 ml: 13 buffaloes
<500 ml: 12 buffaloes
No gain: 2 buffaloes.
In our advent of exploring homeopathic galactagogues, we have some positive and promising results which will get better with further studies and experimentation with newer potencies and medicines.

CONCLUSION

Homoeopathy has already shown its miraculous results in helping mankind in curing ailments of human being. But through this study we got to know marvelous utility of homeopathy in veterinary science. For commercial purposes raising trend of use of hazardous steroids like oxytocin in cattle has shown deleterious effects. Instead, if we could use Homeopathy which is therapeutic science based on natural laws it will not only protect cattle from deleterious effects of synthetic medicines but also help us to naturally increasing their physiological ability to produce more quantity of milk.

REFRENCES:

1. Bulbul Nagrale, K.K. Datta, Avinash Ghule. www.researchgate.net. [Online] Sept 2012. [Cited: Jan
12, 2022(5:45pm).]
https://www.researchgate.net/publication/281454337_Regional_Trends_and_Pattern_in_Milk_Production_in_Maharashtra_State.
2. Soi, Dr. Sangeeta. https://krishijagran.com/. [Online] June 18, 2019. [Cited: Jan 05, 2022.]
https://krishijagran.com/animal-husbandry/all-about-buffalo-farming-different-breeds-and-their-details/.
3. Jainudeen, M R. https://www.ncbi.nlm.nih.gov/. [Online] 2002. [Cited: January 07, 2022.]
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7150070/.
4. https://agritech.tnau.ac.in/. [Online] 2009. [Cited: Jan 05, 2022.]
https://agritech.tnau.ac.in/animal_husbandry/animhus_buffalo%20milking.html.
5. M. D. Patel, K. K. Tyagi, L. M. Sorathiya and A. B. Fulsoundar. http://www.veterinaryworld.org/.
[Online] Jan 30, 2013. [Cited: Jan 13, 2022.] http://www.veterinaryworld.org/Vol.6/April%20-%202013/Effect%20of%20polyherbal%20galactogogue%20supplementation%20on%20milk%20yie
ld%20and%20quality%20as%20well%20as%20general%20health%20of%20Surti%20buffaloes%20o
f%20South%20Gujarat.pdf.
6. Ashwin Sapra, Utkarsh Bhatnagar and Kartik Jain. India: The Oxytocin Ban Story. www.mondaq.com. [Online] Sept 23, 2019.
https://www.mondaq.com/india/healthcare/846810/the-oxytocin-ban-story.
7. Ali Hassan. https://technologytimes.pk/. [Online] July 06, 2017. [Cited: Jan 08, 2022.]
https://technologytimes.pk/2017/07/06/use-of-oxytocin-in-dairy-animals-and-its-harmful-

effects/.
8. Hatherly, Patricia. www.catalogue.nla.gov.au. [Online] 2004. [Cited: Jan 09, 2022.] https://catalogue.nla.gov.au/Record/3081001.
9. Klein, Bradley G. Cunningham' s Textbook of Veterinary Physiology.
10. C.D. Khedkar, S.D. Kalyankar, S.S. Deusarkar. Encyclopedia of food and health. s.l. : Elsevier.
11. RONALD C. GOREWIT. Lactation Biology and Methods of Increasing Efficiency. [Online][Cited:Jan13,2022.]https://www.ncbi.nlm.nih.gov/books/NBK218174/#_NBK218174_pubdet.
12.www.en.m.wikipedia.org. [Online] [Cited: Jan 03, 2022.] https://en.m.wikipedia.org/wiki/Urticaria_urens.
13. Clark, John Henry. Dictionary of Practical Materia Medica and Repertory of Materia Medica.s.l.: Jain publishers.
14. Allen, T.F. The Encyclopedia pure Materia, medica.
15. Boericke, William. Pocket manual of homeopathic Materia Medica and Repertory.