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Scenario of mastitis in bovines in kalka (Haryana) and herbal medication to reduce chances of mastitis

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ABSTRACT

Mastitis in dairy cows is the persistent, inflammatory reaction of the udder tissue. Mastitis occurs when white blood cells are released into the mammary gland, usually in response to bacteria invading the teat canal. Milk – secreting tissue and various ducts throughout the mammary gland are damaged due to toxins released by the bacteria. Mastitis can also occur as a result of chemical, mechanical, or thermal injury. [1-4] A survey was done to find out extent of awareness about mastitis in kalka (Haryana). This paper includes all the information and results collected in the survey. As we know that there is a need for some herbal medication to minimize the use of chemical drugs, to produce good quality milk and to maintain the good animal health .This paper also contains the formulation of this herbal medication so that we can minimize the chances of mastitis in the early stages. The main aim of this study is to find out cure for mastitis which can minimize the use of chemical compounds, cost effective, affordable and easily available to farmers.

Keywords: Mastitis, herbal medication, kalka, formulation, cost effective

I.INTRODUCTION

1.1. Nature of problem

Mastitis is very costly disease as it accounts for 70% loss of milk production /year. The decrease in milk production significantly decreases the dairy farmer's income. Also the treatment of mastitis uses chemical compounds (drugs) which have side effects on animal health, so ultimately it reduces the quality of milk. Also these drugs are not cheaper, not available to and affordable by many dairy farmers. These all problems result in the bad scenario of treatment of the animal. So the ultimate result is the culling off the cows and in severe cases death of the animal. [5-7]

1.2. Previous work

The previous work shows that in the early stage of the infection, as vitamin D reduced the bacterial counts, milk production was also greater in the treated animals. These results suggest that vitamin D might help reduce antibiotic use in treating mastitis, according to Lippolis. A natural remedy that delays and reduces the severity of mastitis infection in dairy cattle is being investigated by scientists at the USDA. Some research papers also depict the use of aloe Vera, essential oils of peppermint, tea tree and oregano in the treatment of mastitis.

1.3. Purpose and contribution of the paper

The main purpose of this paper is to provide information about the extent of awareness about mastitis among the people of kalka region and to find out some herbal medication which should be cost effective, affordable and

easily available to dairy farmers. In the survey it was found that, people of these region uses traditional treatments (we can call it as ayurvedic treatment or 'Gharelu nushkhe ') when they see problems in the udder of the animal and in some cases it was found curable. So based on these studies we have formulated a medication (herbal mixture) which can be helpful in curing mastitis. As herbal medication don't have any side effects, so it doesn't harm the animal health and increase the good quality milk production.

II. METHODOLOGY

A survey was done in the small area of kalka (Haryana) in the month of November, 2017. In Survey total of 42 houses were examined, which include total 167 animals (Cows-52, Buffaloes- 115). A questionnaire related to mastitis carrying 23 questions was prepared aiming to evaluate the main cause of mastitis, hygiene condition in this area, extent of awareness about mastitis among dairy farmers, to know what traditional treatments they exactly do when they note the diseased udder, etc. Various articles and research papers were studied to collect the information about causes and treatments related to mastitis.

III.FORMULATION OF HERBAL MEDICATION

3.1. List of herbs used

1. Barley, 2. Cotton seed cake, 3. Cotton seed, 4. Mustard cake, 5. Jaggery, 6. Cloves, 7. Dill seeds, 8. Cattle feed, 9. *Eruca sativa* seeds. 10. Small amount of baking soda

3.2. Following are the steps to prepare liquid solution

1. Take equal amounts of Barley, cotton seed cake, cotton seed, mustard cake, jaggery, cloves, dill seeds, cattle feed, Eruca *sativa* seeds and small amount of baking soda and crush this mixture.

2. Pour some water in this mixture (water should be doubled the amount of mixture) and boil it for 30-45 minutes.

3. Filter the solution and use for medication purpose by feeding this liquid to animal.

IV. RESULTS AND DISCUSSION

4.1. Result of the survey

Fig.1 to fig.23 shows the observation and results which are collected during survey.

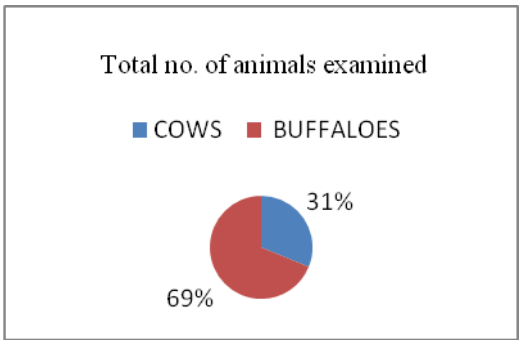

Fig.1

Fig.1 shows that people of this area has more no. of buffaloes than cows and this can be due to the fact that buffaloes produce high quality milk than cows.

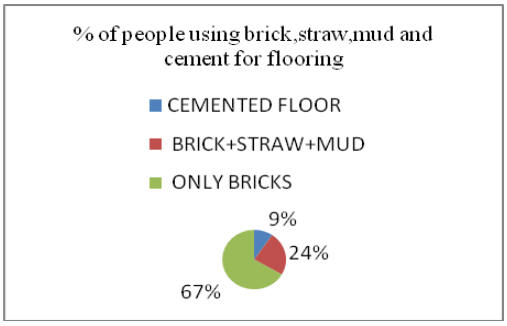

Fig.2

Fig.2 shows that there are 67% dairy farmers who use only bricks for flooring purpose where cows live. 24% people use bricks and straw spread on dry mud to make an even surface for cow.

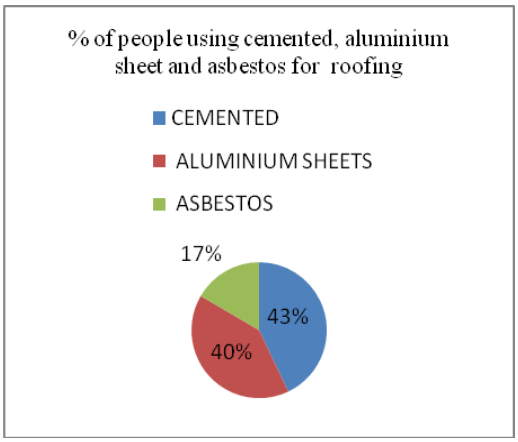

Fig.3

Fig.3 shows that 43% dairy farmers use cemented roof, 40% people use aluminium sheets and only 17 % people use asbestos for roofing purpose where animals are kept.

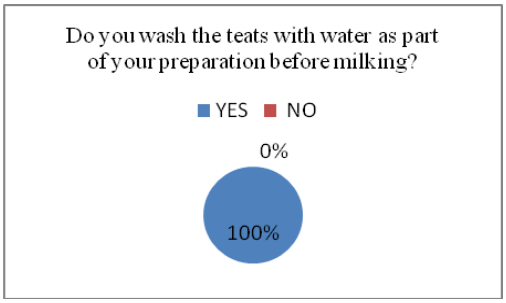

Fig.4

Fig.4 shows that 100% dairy farmers wash their hands during milking which reflects good hygiene condition, although no one bear gloves during milking.

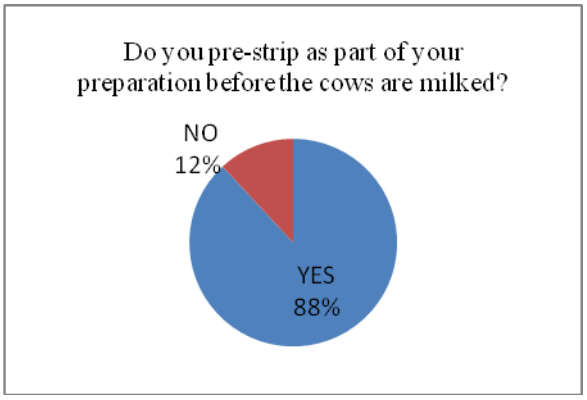

Fig.5

Fig.5 shows that 88% people pre-strip as part of their preparation before milking. Studies show that pre-striping may contribute to get rid of bacteria.

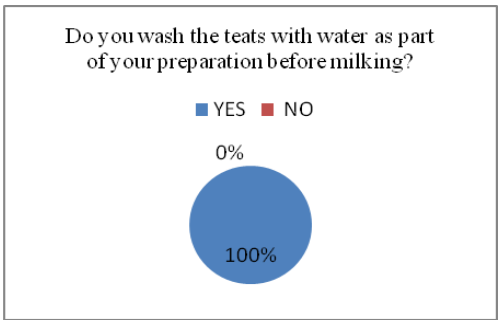

Fig.6

Fig.6 shows that 100% people wash the teats with water before milking.

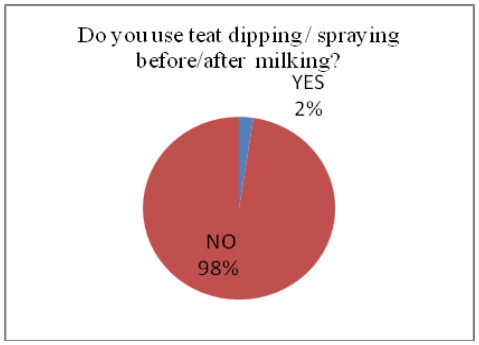

Fig.7

Fig.7 depicts that 98% people not use any dipping or spraying solution for teats before/after milking.

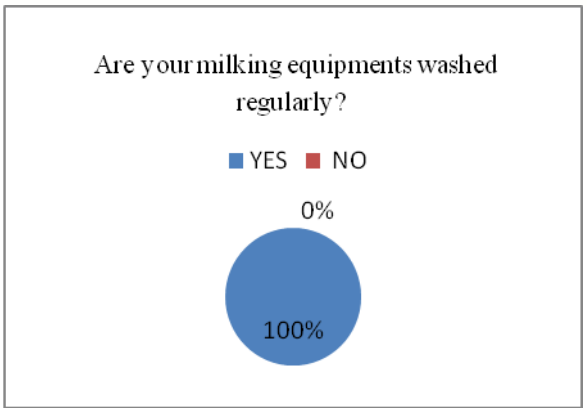

Fig.8

Fig.8 depicts that 100% people wash their milking equipments regularly.

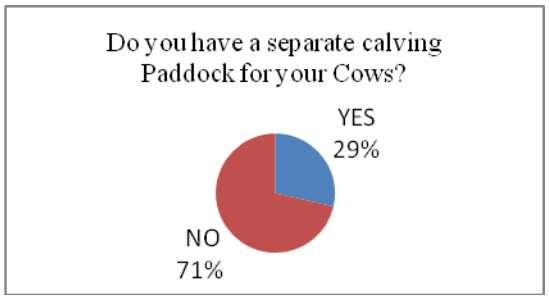

Fig.9

Fig.9 shows that 29% people has separate calving paddock for their cows while 71% people don't have separate calving paddock.

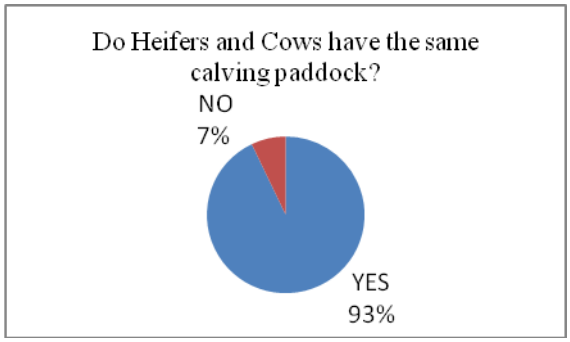

Fig.10

Fig.10 shows that 93% people have same calving paddock for their cows and heifers while 7 % people doesn't have.

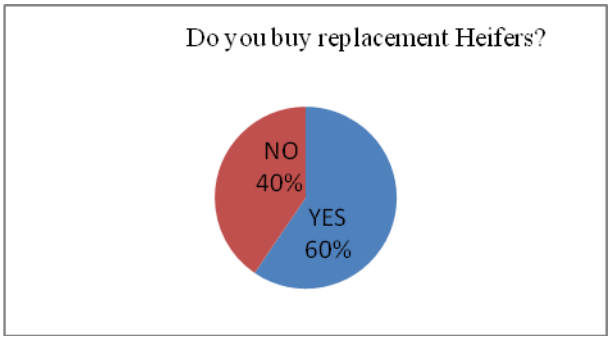

Fig.11

Fig.11 shows that 60% people buy replacement heifers.

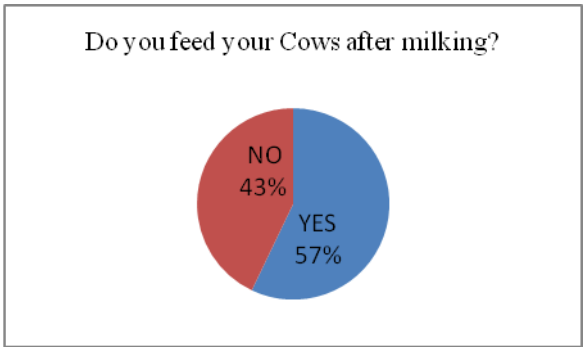

Fig.12

Fig.12 depicts that 57 % people feed their cows after milking.

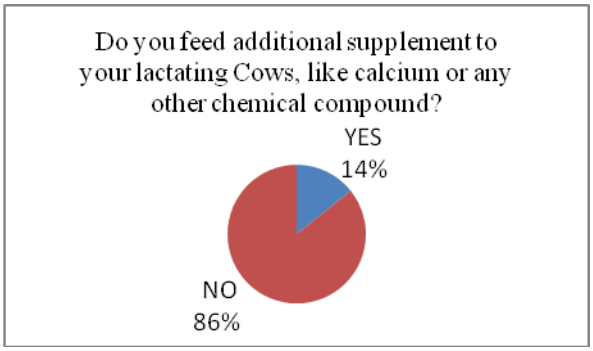

Fig.13

Fig.13 shows that only 14 % people feed additional supplements to their lactating cows.

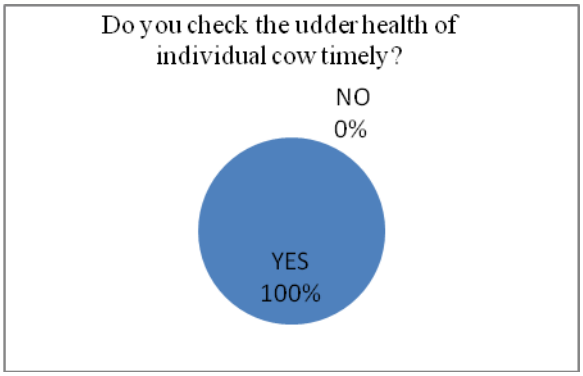

Fig.14

Fig.14 shows that 100% people check the udder health of their cow timely.

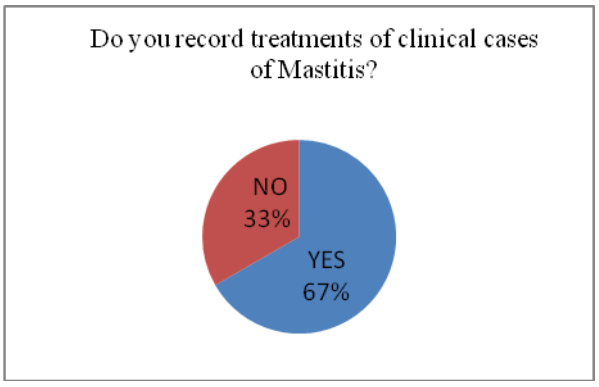

Fig.15

Fig.15 shows that 67% people record treatment of clinical cases of mastitis and 33% people don't have any idea about mastitis.

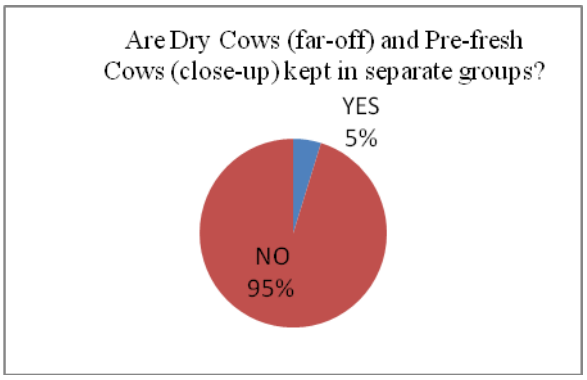

Fig.16

Fig.16 shows that dry cows and pre-fresh cows are kept together by 95% people. Only 5% people kept them separated.

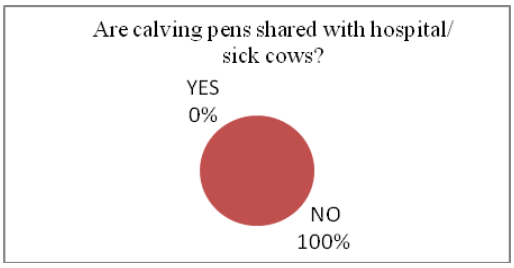

Fig.17

Fig.17 shows that no calving pens are shared with any sick cows.

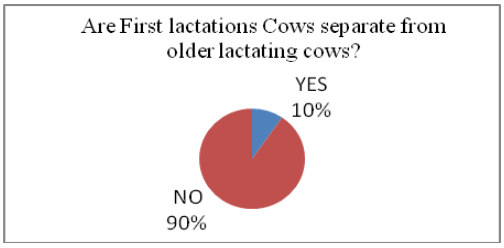

Fig.18

Fig.18 depicts that only 10% people keep first lactations cows separate from older lactating cows.

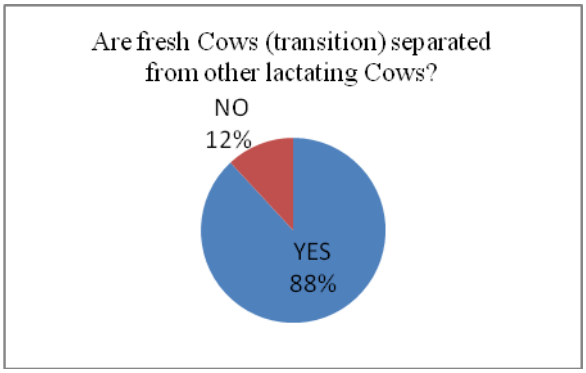

Fig.19

Fig.19 depicts that fresh cows are kept separated from other lactating cows by 88 % dairy farmers.

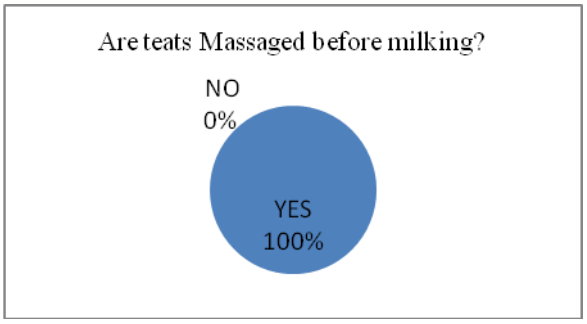

Fig.20

Fig.20 shows that 100% dairy farmers massaged teats before milking.

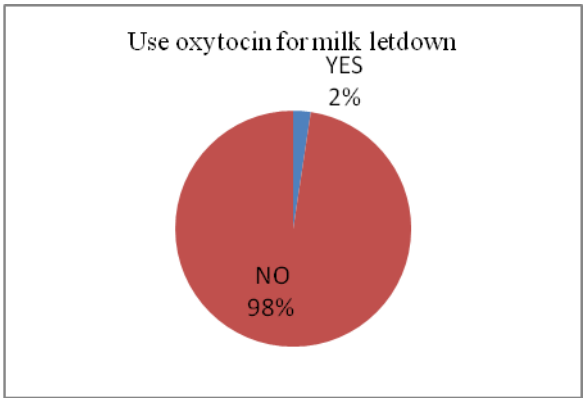

Fig.21

Fig.21 shows that only 2% dairy farmers use oxytocin for milk letdown.

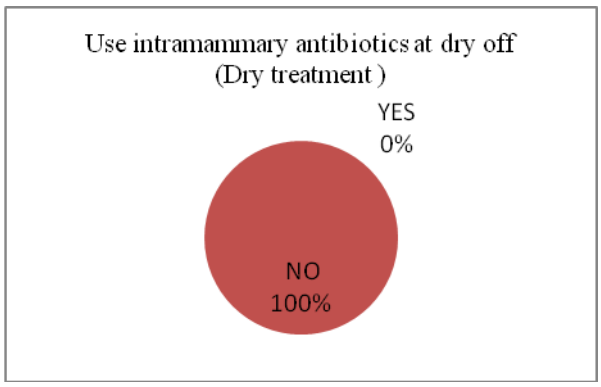

Fig.22

Fig.22 shows that 100% dairy farmers don't use any intramammary antibiotics at dry off.

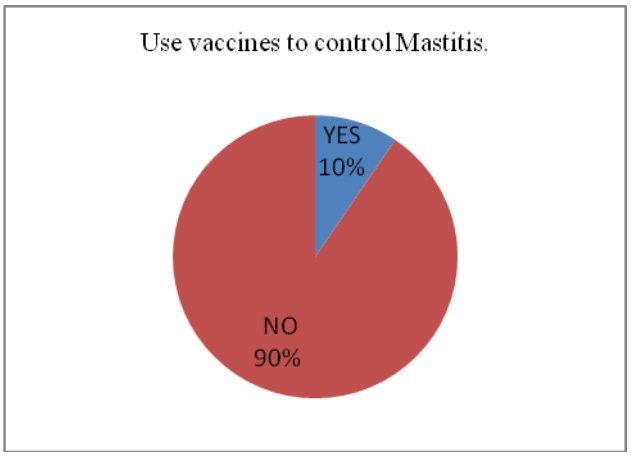

Fig.23

Fig.23 shows that only 10% people use vaccines to control mastitis.

4.2. Result of the formulated medication

The effect of this herbal medication in reducing the chances of mastitis is being investigated by me and my guide.

V.CONCLUSION

Information from survey depicts that there is a need of more awareness about causes of mastitis as many dairy farmers keep their animals together. Keeping animals together promote bacteria propagation.

5.1. Advantages of the paper

1. As this paper explains about herbal medication, so this medication can be useful for minimizing the use of various chemical drugs.

2. Herbs used in this medication are cost-effective and affordable by dairy farmers.

3. As these herbs are used as dietary content for animal, so it doesn't have side effects and improve animal health and good quality milk production.

5.2. Limitations of the paper

As investigation on the effect of herbal medication in reducing chances of mastitis are taking place, so till now we cannot say that this medication is successful approach in treating mastitis.

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