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# Detection of *Trichomonas* SPP. from Penile Bulls Fluid in Iraq

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### Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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## ABSTRACT

*Trichomonas fetus*. lives on the surface .of the penis and. prepuce of the. bull and in the reproductive tract of .the cow . Bovine .trichomoniasis is a venereal. disease of cattle. caused by the. protozoan *Trichomonas. fetus* . Samples: In our study 100 samples were collected from penial bulls which send to the slaughter house , the samples were collected randomly from mature bulls before slaughtering. For diagnosis of trichomoniasis we made the direct method (using slise smear). The result show that there are (2) positive samples of *trichomonas Fetus* found in preputial fluid of bulls penis , this indicate that bulls have trichomoniasis because of the disease represent as sexually transmitted disease.

Keywords: *Trichomonas fetus*; penile bulls; infection; slaughter house.

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## 1. INTRODUCTION

*Trichomonas fetus* lives on the surface, of the penis and prepuce of the bull and in the reproductive tract of the cow [1]. *Trichomonas fetus* prefers a reduced oxygen. Environment and it multiplies in the small folds of tissue on the bulls penis. Because older bulls have more numerous and deeper crypts and more easily infected, using young bulls is part of a disease management strategy [2]. There are no obvious signs of *Trichomonas fetus* infection in the male and early fetal loss is the only sign of disease in the female [3]. Bovine trichomoniasis is a venereal disease of cattle caused by the parasite *Trichomonas fetus* [4]. This disease causes early fetal loss and occasional late – term abortions; it may also extend the breeding calving season [5]. Trichomoniasis is caused by sexually transmitted parasite (*Trichomonas fetus*) which belongs to the phylum parabasalia [6]. Parabasalids are an aerobic flagellates without mitochondria, most of these parasites live in the alimentary or urogenital tract of vertebrates and invertebrates [7]. A few species such as *Trichomonas vaginalis*, *Trichomonas gallinae*, *Histomonas meleagridis* and *Trichomonas fetus* are pathogenic in the urogenital or alimentary tract of various animals [8]. *Trichomonas* means "Three – haired single – celled protozoan" which accurately depicts some of the morphological characteristics of the organism. *Trichomonas fetus* is a pyriform –shaped protozoan with a rounded anterior end and a pointed posterior end, its size can vary from 10-25 µm in length and 5-10 µm in width [9]. *Trichomonas fetus* has a single nucleus and four flagella, three of the flagella are located on the anterior end while the fourth extend backward. One side of the organism has an undulating membrane with three to five waves and a characteristic vibrating movement [10]. In Bulls similar to most venereal disease in domestic animals the male is a symptomatic carrier, while the female suffers identifiable consequences of Trichomoniasis. *Trichomonas fetus* localizes in the smegma (secretions) of the epithelial lining of a bulls penis, prepuce and distal urethra [11]. The organism does not readily invade the epithelium nor typically invoke an effective immune response in the bulls [12]. *Trichomonas fetus* causes no penile or preputial lesions and quality and doesn't affect semen quality or libido. However any bull exposed to *Trichomonas fetus* in a natural breeding situation is capable of becoming chronically infected [13].

Trichomoniasis in the cow occurs after coitus with an infected bull, the organism enters to the reproductive tract within 1-2 week via vagina, pyometra and abortion in the first trimester which is the first physiological signs of disease resulting in repeat breeding, irregular heat cycle, longer calving and reduce pregnancy rate, the uterus may become infected in some cases infertility due to early embryonic death is the most, economical clinical signs of disease [14]. There are many sampling techniques have been utilized for obtaining diagnostic specimens in the bull including (swab technique, dry pipette technique, wet pipette technique, the douche technique and metal brush technique) these techniques focus on recovering preputial smegma for either direct microscopic evaluation or in vitro cultivation [15]. A tentative diagnosis may be based on the history and clinical signs to confirm this diagnosis depends finding the organism in at least one animal in the herd [16]. This is done by an official diagnostic laboratory; a) finding the organism in an aborted fetus, b) culturing the organism from a vaginal tract swab of a cow or from the pyometral discharge from a cow, c) and/or finding the organism in a smegma collected from the inside sheath around the penis of one of the herd bulls [17]. A few tips for prevention bovine trichomoniasis including: (keep fences in good repair to prevent accidental contact with potentially infected cattle, replacement heifers should either be pregnant or less than six months of age, do not retain open females that failed to breed the year before, replacement bulls should be known virgins, or have negative test before they enter a herd [18].

## 2. MATERIALS AND METHODS

Samples: In our study we collect 100 sample from penal bulls which send to the slaughter house, the samples collected randomly from mature bulls before slaughtering. The penile opening was cleaned carefully with soap and water then dried with paper towels, then by using a syringe (10ml) of Normal saline infused inside the preputial area of penis then drain the fluid into a sterile cup, (the same methods used for all experimental animals. The samples were send to the Laboratory of college of veterinary medicine of Basra University to diagnosis the study start in October 2019 to March 2020.

## 2.1 Diagnosis

For diagnosis of trichomoniasis we made the direct method; the samples placed in centrifuge in ( 2000 cycle / min for 10 min ) then the sediment isolated in another tube using micropipette. One drop of these sediment with one drop of gemza stain (10%) were mixed on one clean slide then covered with another slide then testing under light microscope in ( 40X magnification ) to detect the protozoa (*Trichomonas SPP.*) in samples.

## 3. RESULTS AND DISCUSSION

The result show that there are [2] positive samples of *trichomonas Fetus* found in preputial fluid of bulls penis, this indicate that bulls have trichomoniasis because of the disease represent as sexually transmitted disease. The percentage of morbidity found in our study is 2%, this percentage most not be neglected because of the infection is very dangerous in country in can spread to the cows and cause death of fetuses and abortion. The samples collected from the smegma of the bulls to identified the organism, the preputial smegma were cloudy white in color some time tend to be white-yellow because of presence of some urine. Because of the *Trichomonas fetus* lives in the sheath and. skin folds of the bulls penis of the infected bulls [1].

According to the shape of *Trichomonas fetus* it contain three characteristics .flagella extend anteriorly with undulating membrane with one posterior flagellum with three to five waves stained by 10% Gemza stain The diagnosis of *Trichomonas fetus* made by direct visualization of the parasite and as described by [4] this is agreed with [1,17] which were reported that preputial smegma can be examined directly for the presence of *Trichomonas fetus*, undiluted sample of preputial smegma centrifuged and examined at 400X with bright-field microscope, *Trichomonas fetus* is identified as having three anterior flagella, one posterior flagellum and an undulating membrane, as well as characteristics rolling jerky motility. The result of percent study was some that near to the [6] which is reported that 3.1% of bulls in Florida was infected with *Trichomonas fetus* in 1999. The study conclude that there are serious .dangerous of spreading. of *Trichomonas fetus* in Basrah in case of there is .no any control method. has been done. Prevalence rate. of *Trichomonas fetus* obtained in this present study was 2% this .result revealed that. the incidence of *Trichomonas fetus* infection

was not agreed with [17] who reported that the percent of trichomoniasis in bulls. was 0.27% positive by molecular based assay in Auburn city in 2005 and 0.7 in 2006 in. the same place and also the percent study didn't agreed with [18, 2, 3,11] which they .found prevalence rates of infected bulls in united state were 7.5% , 7.3% , 7.8% .and 4.1% respectively.

## 4. CONCLUSION

The study conclude that , there is easily to diagnosis the trichomoniasis in bulls using penile fluid which is simple easy method to dismiss the infected bull from the cows and eliminate the spread of disease in the farm from males to females and avoiding the pregnancy loss .

## CONSENT

It is not applicable.

## ETHICAL APPROVAL

Animal Ethic committee approval has been taken to carry out this study.

## COMPETING INTERESTS

Author has declared that no competing interests exist.

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