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Infertility of Dairy Cattle

A research project submitted to the board of the veterinary department as a part of the requirements for obtaining diploma in veterinary sciences

Prepared by students

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2023

Declaration of supervisor

I certify that this research is under the title (Infertility of Dairy Cattle).Presented by the students:

Nouran Omer Adnan Ismaiel Shadan muhammed Rashed

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It took place under my supervision at the Shaqlawa Technical College as part of the requirements for obtaining a diploma in veterinary medicine.

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Date:

Based on the available recommendations, I nominate the research for discussion.

Signature:

The name: Kaefy Jabar Hassan / Head of department

Date:

A

The approval of the discussion committee

We, the members of the discussion committee, the undersigned, certify that we have seen this research decree { Infertility of Dairy Cattle}.

Presented by the students:

Nouran Omer Adnan Ismaiel Shadan muhammed Rashed and

Tanka Abdl-Smad Qader Maowlod

We have discussed with the students its contents and what is related to it as part of the requirements for obtaining a diploma in (veterinary), and we found it fulfilling the requirements of the certificate.

Head of committee: Dr. Kammran Muhammed Husien / / 2023

Dr.	Dr.	Dr.
Member	Member	Member
2023	2023	2023

B

Summary

The study of general animal health and the study of diseases related to the reproductive system are important in ensuring reproduction or reproduction,

which guarantees us an increase in offspring, whether it is a type of milk or meat breeds, and which guarantees an increase in protein production in order to meet the economic need of the human from it. For this reason, in order to ensure the reproduction of the animal, the animal must Be careful and study against infection, treat it and limit it when contracting one of these diseases, which requires the provision of the necessary medicines and necessary vaccines, in addition to the availability of all health conditions for the safety and health of the animal from infection with any specific disease against venereal diseases.

Infertility, which means the state of infertility and reproduction for many reasons, according to the type of infertility, and infertility is divided into two parts

A- Permanent sterility

It is divided into: Primary sterility, which results from the loss of some genetically necessary organs, such as the absence of a testicle in males or the absence of ovaries in females. Secondary sterility is the state of losing the ability to have children after a period of the animal's reproductive life has passed for a period or more, and then this ability is lost.

b- Permeate infertility

Temporary infertility and its causes are either congenital, hereditary, or acquired and climatic factors

Therefore, we note that if a field is under proper administrative supervision of nutrition and veterinary treatments, then the infertility that occurs is due to a genetic cause. But if the genetic characteristic is good, the causes of infertility are environmental, that is, in fields that are not under good health and administrative veterinary supervision, then the environmental symptoms of infertility appear.

C

Dedication

When we cross the sea of hard work,

Only those who planted a beautiful flower on our way to overcome difficulties remain within us.

My letters can only be words of thanks and dedication to my beloved family and my honorable teachers

Researchers

D

Aknowlgment

Praise be to God, the Generous, the Compassionate, the Most Merciful, who created man, taught him the eloquence, and spoke his tongue with

remembrance and the Qur'an.

I raise and refrain from submission to God, the Exalted, the Most Exalted, Who corrected my mistakes and enabled me to complete this study after what was good for me at the hands of all those who pledged me to take care of the virtuous scholars, pious fathers, loyal companions, and generous people who gave me all their effort and knowledge without tirelessness and boredom. And in accordance with the saying of the Almighty (I do not waste the reward of the best work). I present to all of them in my name the verses of thanks and gratitude, asking God Almighty to reward them, and may my Lord reward them on my behalf with the best reward, and to make their deeds with me a weight in the balance of their good deeds and an intercessor for them on the day of presentation to you.

Hence, I am true to the saying [Be humble to whomever you know from]. We extend our thanks, appreciation, credit and gratitude to my professor, Dr.: Hassan Abdullah Muhammad, the supervisor of the research, who provided us with a single example of scientific enrichment and a careful follow-up of all our steps in preparing the research. We can only pray to God to reward him for all. It is good to give him health to communicate his human and scientific giving without limits.

We would also like to extend our sincere thanks and great gratitude to everyone who contributed to helping us, directing and guiding us, based on the saying of our Messenger, may God's prayers and peace be upon him, "He who does not thank people does not thank God.

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1. Introduction

The primary objective of dairy cattle breeding is to increase reproductive efficiency and milk production (Groen, 1996: Pedersen, 1997: Pursley et al., 1997). Reproductive competence is the most important figure of functional traits as mentioned before (Varner et al., 1988: Juga, 1999). Inefficiency in lactating dairy cows is not only a source of frustration for dairy producers and those associated with their work with them as consultants but also significantly reduces dairy profitability (3, 6). Friesian cattle are known for their reproduction and prolific production (kahi et al., 1998). However, in Iraq the circulating cows are one of the important local breeds in the northern part. This distinguishing feature lies in its ability to adapt to the Nordic environment. Genetic

improvement of the Sharabi strain can be achieved by crossing with a pure Friesian (Dabdoub, 2005).

Reproductive efficiency, milk production and age at first birth are the most important factor affecting the economics of dairy companies, as is known to all. Where reproductive efficiency is determined by the following equation:

Reproductive efficiency (RE) = 12 x number of calves born / age of the cow in months - age in months for the first rearing in the field +3 * 100

Infertility in cows is defined as a defect in reproductive function that leads to the inability of the female to reproduce. It is either temporary and goes away by removing the cause, or it is permanent, and then the treatment is useless, and the fate of the cow is slaughter because of its sterility. The aim of this study is to diagnose the defect sites that lead to infertility in milk cows and their repercussions on the national wealth and how to treat them and overcome them in the future to obtain high reproductive efficiency and ideal productivity.

2. Causes of infertility:

The causes of infertility in cows are many: malnutrition - poor breeding - diseases of the reproductive system - artificial insemination errors (Abd, 2017).All these reasons, in addition to other reasons that we will study in more detail, lead to infertility in cows.

The cow enters the stage of infertility if more than 30-40 days have passed since her birth and she has not been drained. As for the calves, if a month has passed since their arrival, the breeding age is 16-18 months, and their swallowing weight is 320-350 kg, and the first ejaculation did not occur (Caraviello, 2004).

Removing the causes of infertility means obtaining 100 children from every 100 cows annually. In order to achieve this percentage of births, we must vaccinate the cows in a timely manner and carry out reproductive care work for cows and calves in a good way, in order to determine the percentage of infertility in them

and then treat them as soon as possible. From calving and cow products of milk and meat and what leads to this sterility of early slaughter of cows.

Combined, the economic losses caused by infertility may outweigh the total losses caused by all other diseases. Therefore, reducing the period of infertility in cow's means obtaining large productive and economic resources that achieve the desired goal of raising them.

Usually, about 23-27% of cows are discharged in the first month after birth, 48-50% in the second month, and 18-22% in the third month. Thus, the average period between calving and the first discharge is about two months. The more we try (whether by good feeding methods or good breeding) by reducing the period between birth and first discharge, the more we reduce the period of infertility, and thus the economic return to education increases.

Fertilization is considered acceptable if it fertilizes about 50-60% of the first insemination, good if the percentage reaches 60-70%, and excellent if it is more than 71%. However, at the present time, the fertilization rate from the first insemination, whether in stations or in the governorates, has not reached the internationally accepted level. This led to the fact that education for many educators is not economical. Therefore, the efforts of veterinarians and agricultural engineers working in the field of animal production must be intensified to reach a high rate of fertilization (Etgen and Reaves, 1987).

2.1 Infertility due to malnutrition:

Malnutrition appears on the reproductive function in many ways, including: irregular cycles of estrus, absence of ovulation, atrophy and lethargy of the ovaries, retention of the placenta, and delay in retraction of the uterus to its normal position, after childbirth, early death of fetuses, appearance of permanent corpuscles and yellow bodies in the ovaries.

All vital processes in the female body that are directly or indirectly related to reproduction are linked to external environmental factors, primarily the

nutritional factor. The effect of malnutrition on the reproductive function appears in many forms, including: irregular cycles of heat, absence of ovulation, atrophy and lethargy of the ovaries, retention of the placenta, delay in the retraction of the uterus to its normal position after childbirth, early death of fetuses, the appearance of cysts and permanent yellow bodies in the ovaries, and other issues. Reproductive problems that would prolong the sterility period in cows.

The lack of protein in the diet leads to weak hormonal activity of the endocrine glands, especially the pituitary gland and the supra-adrenal gland, and to an imbalance in the synthesis of yeasts necessary for the animal's body and disturbances in the central nervous system.

All of these things negatively affect the reproductive function, causing irregular cycles of estrus and a decrease in the fertilization rate. When examining the reproductive system via the rectum, it is noted that the ovaries are solid and small in size (like a pea).

The lack of carbohydrates also plays an important role in reproductive function disorders, especially since there is a relationship between protein and sugars in the animal's body. For every 100 grams of protein, 80-150 grams of sugar should be given. Therefore, an increase in protein in the diet (when cows are given more than 500 g concentrated feed per liter of milk, i.e. when more than 50% of the diet is protein) leads to the emergence of ketosis (the appearance of ketone bodies in urine and milk).

And we must know that the greatest growth of the fetus inside the womb occurs in the last months of birth, so if the weight of the fetus at the age of 7 months is 7-10 kg, then its weight during the last two months doubles 3-5 times. For this reason, the period of drought in cows must be considered as the period in which the cows are compensated Nutritional deficiency that occurs during the milking period. That is, her nutrition during this period must be integrated in order to obtain the largest possible amount of milk without affecting her fertile status in

the first months after birth. The most important nutritional factor in cow sterility is lack of vitamins, and it is known that cows can synthesize B vitamins thanks to the bacteria present in their rumen, while the remaining vitamins A, D, and E must be obtained with the diet. Vitamin A is considered one of the most important vitamins needed for reproductive processes in terms of its effect on reproductive functions, and some authors call it the reproductive vitamin. As its deficiency causes keratinization of the mucous membranes lining the genital tracts, weakens their resistance to pathogens, and stops the secretions of the uterine and vaginal glands. Symptoms of its deficiency also include poor fertility, the appearance of irregular estrous cycles, and the formation of vesicles and yellow bodies. Permanent in the ovaries. Early fetal death occurs, or weak fetuses are born, in addition to frequent miscarriages. Vitamin A does not affect the regularity of estrous cycles, but rather affects the growth of the fetus inside the womb. It is often called the pregnancy vitamin. Its deficiency causes recurrent miscarriages and early fetal death (Dabdoub et al., 1992).

As for vitamin D, it plays a role in regulating the exchange of calcium and phosphorus in the body, and its deficiency leads to the appearance of irregular estrus cycles and signs of weak discharge appear with the occurrence of cases of ovulation-free discharge, and thus a decrease in the fertilization rate in cows. In addition to the effect of vitamin deficiency on fertilization, which leads to prolonging the sterility period, there are many mineral elements that must be provided in a balanced manner in the animal's body, whose deficiency leads to a defect in many reproductive functions and thus to a prolongation of the sterility period in cows, such as calcium, phosphorus, iodine, manganese, cobalt, and others.

2.1.1 Prevention of nutritional infertility:

Complete diets must be provided in terms of vitamins and mineral elements, in order for the breeder to be able to eliminate what is known as nutritional infertility, and in the summer, feeding cows must depend mainly on green

fodder, because these feeds contain nutrients and vitamins that are very necessary for reproductive function. Especially vitamin A and beta-carotene, and it was found that the animal can metabolize beta-carotene more than vitamin A.

In the winter, fodder is not available, so the cows must be given mainly silage, but it contains large amounts of carotene, sugars, and proteins, and maintains the acid-alkaline balance in the body. Drees must also be used, which is a source of sugar and many vitamins. Table No. (1) shows the daily need for cows of beta-carotene and vitamin A.

Table No. (1) Vitamin needs of cows according to their production status

Cows according to their production status	beta- mg carotene/	Vitamin A/ IU
Cows with an average daily production of 10 kg	350-300	50000-45000
Cows with an average daily production of20 kg	600	70000
Dry cows	300-250	40000
virgin cows	350-300	30000

Likewise, the diet must be rich in mineral elements such as calcium, sodium, phosphorus, and other rare and non-rare elements, and these can be presented in the form of limestone containing a variety of mineral elements. As for the vitamins, their presence has a positive effect on the soil, especially vitamins A, D, and E, which are given in proportions of 1000:100:1, meaning that for every international unit of vitamin E, 100 international units of vitamin D and 1000 international units of vitamin A are given. It is preferable to give vitamins over through the feed, as its concentration in blood and colostrum becomes much higher than when it is given intramuscularly and under the skin.

The animal's daily need of vitamin A is 70-100 thousand IU, vitamin D 8-10 thousand IU, and vitamin E 5-100 IU.

The need of pregnant cows for vitamin D must be taken into account, as it increases in the last period of pregnancy, due to the excessive growth of the fetus, and for this reason it was very necessary to expose the cows during this period to sunlight that helps in the synthesis of this vitamin. As for the iodine component, it should be given to cows in the form of potassium iodine in the amount of 6-9 mg and 12 mg for high-estrous cows .The following is a table showing the need for cows of mineral elements:

Table No. (2) Cows' need for mineral elements

Cow's daily requirement									
	Ca/g	**P/g**	**K/g**	**g Na/**	**I /mlg**	**Co/mlg**	**Cu/mlg**	**Mn/mlg**	**Zn/mlg**
Dairy cow	30-90	20-80	40-130	15-35	5-12	7-20	60-140	450-700	240-700
Dried cow	70-80	40-45	40-120	20-45	3.6-6	4-8	40-80	800-300	240-450

2.2 Congenital infertility:

Congenital sterility means the inability of the firstborn to reproduce due to an anomaly in the internal development of the female reproductive system, where it is sometimes noted that the reproductive system has a childish appearance in some first-borns. In this case, it is noted that both the vagina, uterus and ovaries do not reach their normal growth and are small, which leads to the absence of estrus and ovulation cycles in such animals, but in very rare cases estrus cycles appear in these precocials at the age of 3-4 years, and congenital infertility is also noted In the case of male twins (a female born as a twin with a male brother), where the female is sterile in more than 90% of cases, and this condition arises as a result of the fusion of the fetal membranes of both fetuses at an early stage of development, and this fusion is followed by coronary

anastomosis. Given that the male hormones are secreted before the female hormones, the male hormones spread and reach the female and cause either a complete cessation or a weakening of the growth of the female reproductive system. Therefore, the calves that are in a state of congenital sterility are not suitable for breeding, but it is preferable to slaughter and sell them. Prevention of congenital infertility is by avoiding the use of bulls in her relatives (daughters and grandchildren) are impregnated. In addition, semen taken from well-bred bulls with good genotypes must be used.

2.3 Age-related infertility in cows:

This type of sterility occurs because of the changes that affect the animal's body and reproductive system in particular, which are caused by the advanced age of the animal, which leads to weakness and absence of estrous cycles as a result of a deficiency in the growth and atrophy of the follicles in the ovaries, as well as the atrophy of the glandular system of the uterus.It has been shown that cows can maintain their productive capacity until the age of 15-17 years if they are surrounded by good educational and nutritional conditions, but their milk production can decrease with age, and it is known that the largest production of cows is in the sixth or seventh season as they are It gives 70% of its production in the first season, 80% in the second season, 85-90% in the third season, and 95% in the fourth and fifth seasons, compared to the sixth and seventh seasons. Therefore, the use of high-yielding cows for long periods is of great economic and genetic importance. .

2-4 Infertility resulting from mistakes in breeding:

Poor ventilation, cold and damp weather, and the presence of harmful gases in the barn negatively affect the reproductive function of cows. Most of the time, the effect of bad external environmental factors is observed in cows that remain tied in their barns for a long time, as their resistance to diseases weakens, and many physiological functions, including reproductive functions, are inhibited. It appears in the form of absence of estrus or the appearance of weak signs, and

thus a significant decrease in the fertilization rate. When examining the reproductive system of such cows, it is noted that there are many cases of atrophy of the ovaries and permanent yellow bodies.

What affects the most in this area is the absence of movement in cows tied for long periods, which leads to weak function of the neuromuscular system of the uterus.

Otherwise, detecting estrus in tethered cows is difficult, which leads to many cows not being fertilized on time, and this is what prolongs their sterility days.

The prevention of this type of infertility is by securing good educational conditions in terms of heat, humidity and ventilation, and the cows must be left free for at least two hours in the morning and two hours in the afternoon.

2-5 Infertility resulting from diseases of the reproductive system:

Functional disorders and the inflammatory process that affects the reproductive system are among the main causes of infertility in cows. The main cause of diseases of the reproductive system is most often caused by errors in breeding and feeding or poor preparation for childbirth and the absence of the veterinary component during and after childbirth, in addition to diseases that affect the reproductive system. Such as brucellosis, trichomonas's, and others. This type of infertility accounts for about 40-60% of the total cases of total infertility. Perhaps the most important of these diseases are:

2-5-1Placental retention: (Salhab and Ali, 2016).

All fetal membranes (placentas) come out of the uterus 3-4 hours after birth, but if the placenta comes out later than 6 hours after delivery, we call this pathological condition a condition of placenta retention. In cows, two types of placenta retention are distinguished: total placenta retention, and placenta retention. Partial in the case of total retention, the fetal membranes are trapped in both horns, and in the case of partial retention, the membranes are trapped in one

of the two horns, usually in the century in which the pregnancy occurred. In this case, the placenta maintains its connection with some segments of the uterine horn.

2.5.2Causes of placenta retention:

It occurs in many cows and all of them are linked to weak uterine contractions as a result of many reasons that may be nutritional, hormonal or educational, such as the lack of calcium, phosphorus and vitamin A and the occurrence of disturbances in the hormonal balance of each of the hormones oxytocin and estrogen and chorionic villus as a result of infection with some diseases such as brucellosis, tuberculosis, streptococcus and the absence of movement In animals, especially in the last period of pregnancy, all of them are considered among the factors that cause placenta retention.

2.5.3 Placental retention treatment:

The treatment of placental retention should be directed towards increasing uterine contractions with a view to the rapid expulsion of the placenta from it, as well as towards increasing the resistance of the cow's body to prevent the growth of pathogenic bacteria. Treatment should begin 6-8 hours after delivery, as the uterus during this period is very sensitive to medication, and this sensitivity disappears after a period of delivery. This is explained by a decrease in the secretion of estrogens due to the cessation of the secretory function of these hormones from the placenta. Many authors have noted that the sensitivity of the uterus to the hormone oxytocin decreases by 6-10 times after two days of childbirth. Therefore, successful treatment is the one that begins early after childbirth. The animal is given a dose of oxytocin in the amount of 50-100 international units, and it is useful to give sugar by mouth by 300-500 g. Some scientists advise giving fetal fluids by 3-4 liters every 6 hours three times after diluting it with 5-6 liters of water and adding a little it is urgent because the fetal fluids contain quantities of follicles and some mineral and hormonal elements

useful in this field, such as the hormone oxytocin. In the event that the placenta does not come out in the previous ways, there are two methods of treatment:

1- The conservative method: treatment in this way does not include removing the placenta, but washing the uterus with a mild antiseptic solution, and this may be dangerous in the case of uterine inertia, after which the uterus is treated with antibiotics in the form of tablets or capsules such as Tramycin 2 g, chloramphenicol (2) g, or sulfanilamide 50 - 70 g on the first day, and the treatment continues after that for two or three days at half the dose mentioned. Oxytocin is given from 100-500 IU subcutaneously to speed up the process of uterine contraction.

2- Radical treatment: It includes removing the retained placenta with one of the hands covered with a surgical glove, where the hanging part of the placenta is held with one hand, and the other hand covered with a long sterile glove inserts between the placenta and the wall of the uterus. Since the placenta is relatively more in the tenth century, it is better to get rid of it from this century first. In the event that the placenta is well attached to the wall of the uterus, it must be left for one day until it decomposes and the cotyledons are partially separated from the cartilage, after which the uterus is treated topically with antibiotics.

2.6 Uterine relapse:

Uterine relapse is known as a regressive growth process that restores the uterus to the normal position it was in before the onset of pregnancy. By the end of the relapse process, the weight of the uterus decreases about 20 times, and its size also becomes much smaller. And the uterus returns to its normal weight and size usually after three weeks of giving birth, when the cows are free in the pastures where green fodder is sufficiently available, and this often happens in the spring and summer. In winter, when the cows are tied to their barns and green fodder is not sufficiently available, this relapse process may be delayed 4 weeks or more after childbirth, and the gestational corpus luteum decays on the 15-17 day after childbirth, and new follicles begin to grow in preparation for the emergence of

the first heat after childbirth. If the cows were vaccinated before the uterus returns to normal, the cow will not be fertilized, due to the inability of the uterus to perform its normal function and the inability of its lining to receive the fertilized egg. Some authors indicate that fertilization during this period may cause a type of chronic uterine infection in some cows. And to the formation of antibodies to sperm in the blood and one of the properties of these bodies is that they often hinder the fertilization process inside the animal, so vaccinating cows in this period between 5-10-15 days after birth (because some cows behaved during this period) is not an idea. It has no scientific basis for the fact that the uterus has not retracted to its normal position and size. And from the foregoing, the vaccination of cows after childbirth should be done only when the uterus has returned to its normal position, and this is what is determined by the veterinarian supervising the cows. Therefore, to prevent the delay in the return of the uterus to its normal position, there are some things that must be taken into account, the most important of which are: Pregnancy to give birth by feeding and caring for it well. It is advised to give the cow after childbirth lukewarm water to which a little salt is added, as well as giving her fetal fluids, with the need to do massages with oxytocin injections and give sugar and vitamins in case of necessity.

2.7 Inflammation of the uterus:

Inflammatory processes that affect the female reproductive system usually begin with inflammation of the mucous membrane lining the uterus and are called uterine inflammation, after which the inflammation moves to the cervix, vagina, and ovarian channels. Many authors indicate that acute uterine infections usually affect about 10-12% of newborn cows, especially cows that the placenta is retained, and some managers of cow-breeding stations in the Soviet Union mention that uterine infections reached a very large percentage, reaching about 50-65% of newborn cows. Whether this percentage was large or small, it plays a negative role by delaying fertilization and its impact on the desired economic aspect of raising these cows. If acute uterine infections are not treated well, they

will turn into chronic infections that will become difficult to treat, and this will be one of the reasons for repeated vaccinations for one cow. The inflammatory substances affect the sperm, causing their death, and if fertilization occurs, the fertilized egg is unable to implant in the lining of the uterus. For her inflammation. In addition, uterine infections are responsible for the appearance of cysts and permanent yellow bodies in the ovaries. The danger of chronic uterine inflammation is due to the fact that cows are not accompanied by any symptoms other than repeated vaccinations. Sometimes, during estrus, some inflammatory substances are present in the tuberculosis (mucus) and a thickening is noted in the ovary. Uterus during rectal examination. Some scientists have noted that 30-70% of sterile cows, which were suffering from repeated vaccinations, were suffering from chronic uterine inflammation.

2.7.1Treatment of uterine infection:

Experiments have shown that the single treatment for inflammation of the uterus (whether washing the uterus, or placing antibiotics in the uterus, or injecting antibiotics intramuscularly) has a weak effect. Therefore, a combination treatment must be used that is directed towards the following:

A - Increase the biological immunity of the animal body.

B - Removal of purulent purulent materials from the uterus.

C- Increasing the tension of the uterine neuromuscular system and strengthening uterine contractions.

D- Accelerating the regeneration of cells and membranes lining the uterus and restoring the reproductive function of the animal.

To remove purulent materials from the uterus, it is recommended to inject drugs that increase uterine contractions, such as oxytocin. However, experiments have shown that the response of the sick uterus to these substances is very weak due

to the laceration and injury of the uterine neuromuscular system and the decrease in the percentage of estrogens in the cow's body after a period of childbirth.

It is not recommended to wash the uterus with antiseptic chemical solutions, as these solutions cause an increase in uterine inertia and irritation of the lining mucous membranes, which reduces its resistance to pathogenic germs. Otherwise, these solutions contribute greatly to the transmission of infection to the places adjacent to the uterus. In order to increase the sensitivity of the uterus to oxytocin, it is recommended to give a 1% solution of synestrol at a dose of 0.8-1 ml per 100 kg of cow weight, and then give oxytocin once a day for four days at a dose of 7-8 units per 100 kg of live weight. In this way, the contractions of the uterus increase, which helps in cleaning it of pus and speeding up its return to its normal size. Antibiotics must be used inside the womb and injected into the muscle. The body must also be strengthened by giving vitamins A.D.E with food and glucose by injection.

2-8 polycystic ovarian follicles:

The cyst of the ovarian vesicles or the formation of cysts in the ovaries is a dysfunction that affects the ovaries and is characterized by the presence of large cysts in the ovaries filled with a liquid or mucous consistency. Short or long, irregular estrus cycles, persistent estrus, or no estrus. In the following, we will provide a detailed description of each type of vesicle: (Khalifa, 2013).

1-Polycystic vesicles: They are Graf's vesicles that did not rupture for many reasons, the most important of which are: lack of secretion of the luteinizing stimulus. This type of vesicles continues to secrete estrogen, as in Figure 1.

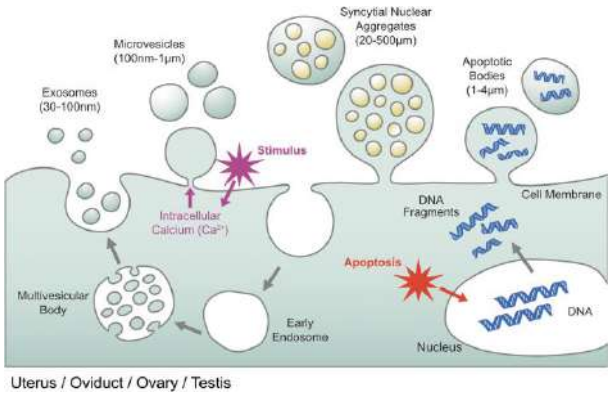

Figure 1. Secrete estrogen

Perhaps the most important reasons leading to the appearance of this type of vesicles are:

A - Decreased secretion of the luteinizing stimulus from the anterior pituitary gland.

B - It has become established that the disease has a genetic predisposition and it appeared that it is linked to the high rate of milk production.

C- It was found experimentally that injections of estrogens at frequent intervals and in large doses cause the formation of this type of vesicles.

D- The disease usually appears in cows after a period ranging between one and four months after calving (i.e. at the peak of milk secretion). It has also been noted that increased feeding in order to increase milk production with a lack of movement in the animal and lack of exposure to sunlight contributes to the emergence of the disease, especially in winter .

Symptoms:

1. The affected cow shows frequent, irregular, or continuous estrus and accepts any animal jumping on it. It also desires and accepts natural insemination at any time, but fertilization does not occur. This disease is known as sexual mania or nymphomania. The interior of the vesicle.

3. The affected cow is nervous, restless, and mooing a lot, as it searches for other common females in the herd in order to jump on it. As a result of this excessive movement, a significant loss of weight occurs.

4. Sometimes a white or gray secretion comes out of the vulva.

5. The pelvic ligaments relax and there is swelling and numbness of the vulva and clitoris.

Treatment:

1. Tearing the cyst through the rectum by hand, but in most cases it happens that a new cyst forms after a period ranging between 8-10 days, and the new cyst can be torn or burst, and so on until a natural estrus cycle begins and a corpus luteum is formed.

2.Injection of the luteinizing stimulus (LH), usually the first natural estrus occurs within a week or two after treatment, and the hormone is injected into the muscle at a dose of 2500-5000 international units, or an intravenous dose of 1000-2500 international units, or into the cyst at a dose of 500-1000 units And due to the fact that this hormone is protein in structure, its administration may cause shock to the animal, and therefore it is recommended to use adrenaline in this case.

3. Potassium iodine injection intravenously for its effective role in stimulating the secretion of luteinizing stimulus from the pituitary gland.

4. Some authors suggest progesterone injections in small doses of 100 mg for 8-10 days.

2-8-1 Cyst lutetium:

This type of follicle arises from Graf's vesicles that did not rupture and secrete progesterone in this case. Often, the reason for the formation of the luteinizing vesicle is the insufficiency of the luteinizing stimulus secreted before ovulation.

Usually, this cyst is in one ovary and constitutes about 23% of ovarian cysts. When infected with this disease, the granulomatous layer has begun to transform into luteinizing tissue, and the vesicular cavity is surrounded by a full layer of luteinizing tissue and fibrous tissue. The cow infected with this cyst shows normal estrus symptoms, but it may It is longer than the normal period, and after a period of disease, the cow turns into a state of estrus, and does not show any signs of estrus throughout the period of the presence of the cyst in the ovary, as in Figure 2.

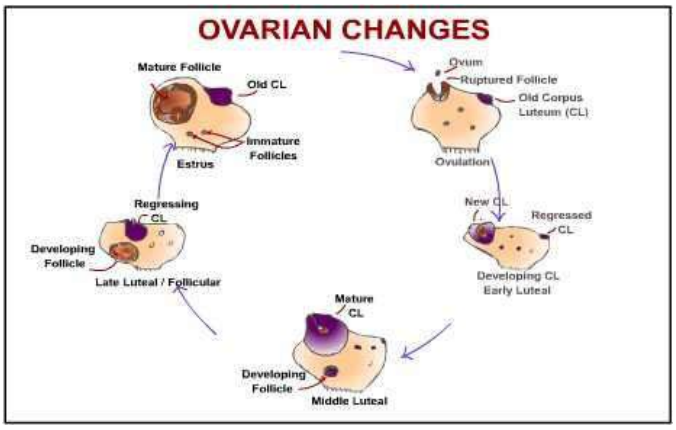

Figure 2. State of estrus

Treatment: It is done by exploding the cyst by hand through the rectum. This may be done with difficulty due to the thickness of the wall. The cyst can be ruptured through the vagina by means of a puncture machine.

2-8-2 Luteal cyst:

The corpus luteum cyst arises from Graf's vesicle, which had previously ruptured and formed the corpus luteum, but a cavity remains in its center that quickly fills with fluid. The cystic corpus luteum secretes progesterone, and this type constitutes approximately 2% of ovarian cysts. Until now, the causes of the corpus luteum cyst are not known, although some researchers believe that the cause is a defect in the secretion of the lactic spur, which does not lead to the full growth of granulosa cells and filling them with the cavity that was previously

filled with vesicular fluid. This case is treated on the basis that it is a permanent corpus luteum, and this is what will be done. Explain it later.

2-9 Permanent corpus luteum:

The corpus luteum is called the permanent corpus luteum if it continues to remain in the ovaries for a period of more than 25-30 days after calving or after the end of the estrous cycle in non-pregnant cows.

The permanent corpus luteum inhibits the growth and maturation of new Grave's follicles in the ovaries, which leads to irregular oestrus cycles and prolongation of infertility in cows.

Reasons for the formation of a permanent corpus luteum:

The reasons for the formation of the corpus luteum are many and varied, the most important of which is the presence of pathological changes in the uterus, malnutrition, and lack of movement in cows. Note that errors often occur in the diagnosis of the periodic corpus luteum, as it is diagnosed as a permanent corpus luteum, and in this case the cows are re-examined after a period of 8-12 days from the first examination, where it is noted that the growth of the periodic corpus luteum has declined with the growth of Graf's vesicle on the surface of the ovary, Figure No. (3)

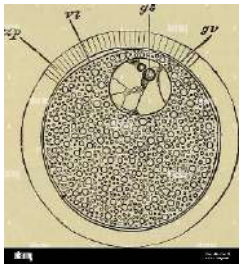

Figure No. (3) Surface of the ovary

The periodic corpus luteum in bovine ovaries, Figure No. (4)

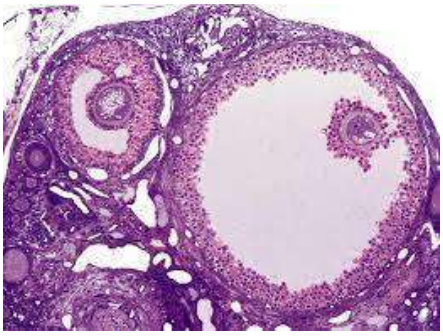

Figure No. (5) Graf's follicle growth

after retraction and retraction of the periodic corpus luteum. It has become known that the dissolution of the corpus luteum of the estrous cycle occurs under the influence of the prostaglandin hormone, which is mainly secreted from the lining of the uterus. However, the effect of this hormone is 5-10 times stronger if its effect was preceded by the injection of estrogens, and this explains the high percentage of estrogens in the blood on the 9-10th day. For the cycle of estrus, while the decay of the corpus luteum begins on the 11-12th day of this cycle.

Treatment:

1. Removal of the permanent corpus luteum (coccyx) through the wall of the rectum, with the necessity of continuing pressure in the resulting fossa in order to prevent any bloody bleeding and to contribute to the formation of a clot. Oestrus usually occurs after removing the corpus luteum, within a period ranging between 2-8 days and an average of 3-5 days. There are some complications that may arise as a result of removing the corpus luteum by hand, which are (especially if a person who does not have sufficient experience performs this operation):

A- Aborting the cow, due to the lack of a thorough examination of the sanctuary, especially in cases of early pregnancy.

B - Failure to complete the process of lobules, so that a large part of the corpus luteum remains in the ovary.

C- Damage to the ovaries as a result of increased pressure .

D- Ovarian bleeding, which may sometimes lead to the death of the cow.

E - Bowel laceration as a result of the examiner's harshness and failure to cut his nails.

2. Inducing congestion of the uterus, which may lead to increased secretion of prostaglandins from its lining, in one of the following ways: (Al-Sayes, 2011).

3. Washing the uterus with Lugol's solution

4. Washing the uterus with warm water at a temperature of 40 degrees Celsius. This requires an amount ranging between 5-10 liters, provided that it is allowed to drain for 15-20 minutes.

5. Injecting the animal with acetylcholine at a dose of 10-15 mg, with caution not to inject large doses because it causes a significant decrease in milk production.

6. Doing uterine and ovarian massages 2-3 times, to be done within 5-6 days.

7. Injections of prostaglandin compounds such as lutealase and prozolefin.

2-10 Lethargy of the ovaries:

The lethargy of the ovaries means the decline and weakness of the physiological activity of the ovaries. It occurs due to a disease of various degrees, the maximum of which is the non-formation of follicles and yellow bodies. This pathological condition is characterized by the absence of estrous cycles in the animal.

The reasons:

The genetic predisposition of the animal.

1. Malnutrition in its various forms, such as protein deficiency, vitamin A or D deficiency, or mineral deficiency such as phosphorus, iodine, and others.

2. This condition may appear as a result of a disease in the reproductive system.

Treatment:

1. Considering that the disease results from a hormonal imbalance resulting from a lack of nutrients necessary for the formation of hormones, the nutritional condition must be fixed with feeding the animal with sufficient quantities of minerals and vitamins, as the animal is given a mineral mixture that contains a large amount of phosphorus such as bone powder or sodium phosphate salt. The amount of phosphate is according to the amount of milk that the cow gives, not less than 30-50 grams per day. Vitamins are given, especially vitamin A, especially in the months when the green diet is less.

2. Stelbestrol should be injected in small doses to stimulate the ovaries, and the dose in this case is 20 mg.

3. Follicular stimulus injection (FSH) intramuscularly at a dose of 1500-2000 IU.

4. Cows suffering from ovarian inactivity should be left on fertile pasture.It is noted that high-estrogen cows may not respond to treatment before their production decreases.

2-11 Infertility caused by immune factors:

The imbalance in the immune reactions of the body of cows and calves is one of the most important factors that prolong the period of infertility in cows, and some authors indicate that this type of infertility constitutes 30% of the total number of sterile cows. It is known that the semen and sperm plasma contain antigens of a protein nature, which happens is that an immune reaction is formed in cows in the form of the formation of specific antibodies towards the antigens, and when the concentration of these antibodies becomes large, they begin to be

deposited in the secretions of the ovarian ducts And the uterus and vagina, and it can maintain its immune capacity in the blood and reproductive system for a period ranging from one to four months. Among the properties of these antibodies is that they carry out a process of agglutination of sperm and sometimes their analysis, in addition to their negative effect on the fertilized egg and the fetus in the first days of pregnancy.

Inflammatory diseases that affect the uterus and the reproductive system increase the formation of antibodies to sperm due to the laceration of the mucous membranes lining the reproductive system, which leads to the ease of permeability of these membranes to antigens in the semen. Therefore, random vaccination that is not based on scientific foundations, whether natural or artificial, is considered a Negative factors affecting fertilization. The treatment of such a case is to ensure that the cows are discharged well before vaccinating them and to ensure that they are free of uterine infections. There is no objection to the use of antibiotics inside the uterus 10-12 hours after fertilization, in order to prepare the uterus to receive the fertilized egg.

2-12 Infertility resulting from poorly organized artificial insemination:

A- This type of infertility is the most prevalent type among cows, especially among the cows of the private sector. Many cows are not vaccinated at the appropriate time during their discharge, either because the artificial inseminator is not available or because the breeder failed to tell the artificial inseminator about the discharge of his cows. (Dr. Hassan’s lectures on venereal diseases from the book of venereal diseases, translated from (DeVries et al., 2005). Likewise, many breeders leave their cows for a long period after giving birth without fertilization, out of their desire to give such cows a period of rest that may be very long. Sometimes to the point where it becomes difficult to fertilize cows in subsequent estrous cycles. It has also been observed that many cows do not undergo reproductive care, which leads to their survival for a long period without fertilization.

3. Conclusion and Recommendation

3-1 Conclusion

It was found from the study that we conclude that there are many causes that affect the reproductive efficiency of milk cows, and these diseases occur for many reasons, as follows:

A - Physiological reasons: which are related to the physiological anatomy of the animal and result from either a decrease in the growth of one of the organs of the reproductive system, causing its incompetence and performing its function properly, or atrophy in this organ or congenital deformities for genetic reasons.

B- Pathological causes: These occur as a result of infection of the organ or the entire reproductive system with a bacterial, viral, or parasitic disease that hinders the organ from performing its function properly. These diseases may be hereditary, as in the case of a valid abortion.

C - Environmental reasons: It is related to the animal's environment, especially those related to sexual maturity, and it is related to the temperatures of the medium in which they live. We note that animals that live in very hot or cold regions are slower in their sexual maturity than the rest of the animals that live in medium or moderate regions as well. The level of management care, including well-ventilated pens, good humidity, and good taming, all of these work on the

activity of blood circulation, which is reflected in the reproductive efficiency of the animal.

D - Nutrition: Nutrition plays the major role in immunization and prevention against most venereal diseases, especially those related to reproductive hormone secretion disorder, as well as diseases resulting from a deficiency in one of the main nutritional components, for example when a deficiency in one of the carbohydrate components, this is reflected in the formation of fructose in the sperm, which leads to Its destruction shortly after its formation, as well as a deficiency in protein, which leads to poor growth of most reproductive germs, especially in the female, such as the growth of the egg and follicle, as well as the deficiency in some vitamins that enter as essential elements in the secretion and stimulation of most of the gonads.

C- Health and veterinary care: Health and veterinary care is one of the important basics for prevention and prevention of disease, and vaccinations against most venereal diseases are constantly being administered, which require continuous monitoring.

h- Natural and artificial insemination

G - The insemination, whether natural or artificial, means mixing with the genital organs. If one of them is infected with any venereal disease, then he transmits it to the other, and this is the most dangerous thing possible, because if the male is infected with a communicable disease, then he transmits the disease to the rest of the herd, and this is especially what happens in artificial insemination.

3-2 Recommendation

1- Monitor the grazers well, not less than three times a day, especially for cows tied in pens, and not delay in calling the artificial inseminator.

2- Not delaying the vaccination of cows after their birth, and in the event that the discharge is delayed for more than 40 days, a genital care doctor must be called to treat the causes.

3- Do not delay in examining the pregnancy of vaccinated cows, as all vaccinated cows must be examined 50-60 days after their vaccination.

4- Opening records for cows specifying the date of the last calving, the date of the first and second discharge...etc, the date of drying, and the expected date of birth, provided that they are in two copies, the first to remain with the farmer and the second with the doctor to enable him to follow up.

5-Monitoring the herds of cows 19-25 days after their insemination, for the possibility of discharging them again.

6- Conducting a comprehensive genital examination when fertilization is repeated more than three times, and using appropriate medications for that.

7- Establishing permanent artificial insemination centers that operate day and night without official holidays, so that the farmer can access them at any time he disposes of his cows.

8- Vaccination of highly ejaculating cows in their first discharge after birth, provided that their reproductive system allows it, because the delay in vaccinating such cows leaves them in a situation where it is difficult to fertilize them later, due to the exit of large quantities of mineral elements and vitamins with the milk, which leads to weakness Uterine contractions and sperm not being able to reach the oviduct.

پوختە

تۆژینەوەی تەندروستی گشتی ئاژەڵ و تۆژینەوەی نەخۆشیەکانی تایبەت بە کۆئەندامی زاوزێ گرنگیەکی خۆی هەیە لە زامنکردنی زۆربوون و وەچەخستنەوە (بەرهەمهێنان) و ئەوەی کە گەرەنتی زیادبوونی وەچە دەکات، جا لە هەر خانەوادەیەکی بەرهەمە شیریەکان بێت یان گۆشتیەکان کە زامنی زیادبوونی پرۆتین دەکات بۆ دابین کردنی پێویستیی ئابوری مرۆڤ جا بۆ دەستەبەرکردنی ئەم

گەرەنتیە دەبێت وریا بین و تووژینەوە بکەین دژی توشبون بە نەخۆشیەکان و دۆزینەوەی چارەسەر بۆ هەریەك لەم نەخۆشیانەیی ئەمەش پێویستی بە دابینکردنی دەرمان و کوتانی پێویستە لەگەڵ فەراهەمکردنی گشت مەرجە تەندروستییەکانی لە پێناو سەلامەتی و تەندروستی ئاژەڵەکە کە توشی هەر نەخۆشیەك دەبێت لە نەخۆشیەکانی زاوزێ.

نەزۆکی infertility واتا باری نەبونی پیتاندن و زۆربوون لەبەر چەند هۆیەك بەپێی جۆری نەزۆکی کە نەزۆکی دابەش دەبێت بەسەر دوو بەش:

أ. نەزۆکی هەمیشەیی sterility

کە ئەویش دابەش دەبێت بەسەر:

نەزۆکی هەمیشەیی سەرەتایی primary sterility کە لە ئەنجامی نەبوونی هەندێ ئەندامی پێویستی بۆماوەیی وەك نەبوونی گون لە نێردا یان نەبوونی هێلکەدان لە مێدا.

نەزۆکی هەمیشەیی ناوەندی secondary sterility بریتیە لە نەبوونی توانای ئاوسی دوای تێپەڕبوونی ماوەیەك لە ژیانی زیادکردن لە ئاژەڵەکان بۆ ماوەیەك یان زیاتر پاشان ئەو توانایەی نەمێنێت.

ب. نەزۆکی کاتی infertility

هۆکارەکانی نەزۆکی کاتی یان لە کاتی بونیەوەیە یان بۆماوەییەکان یان هۆکارە دەسکەوتەکانی و ژینگەی دەوروبەرە، بۆ ئەمەش تێبینی ئەوە دەکەین کە کێڵگەکە بە سەرپەرشتی کارگێریەکی دروست ئەنجام دەدرێت لەڕووی دەرخواردان و چارەسەر ڤێتێرنەریەکان چونکە ئەو نەزۆکیەی پەیدا دەبێت لە بۆماوەییەوەیە بەڵام ئەگەر هاتوو سیفەتە بۆماوەییەکانیان باش بوو ئەوا هۆکاری نەزۆکی ژینگەییە واتا ئەو کێڵگەیە لە ژێر سەرپەرشتی ڤێتێرنەرێکی کارگێڕی تەندروست و بتشدا نیە بۆیە نیشانەکانی نەزۆکی ژینگەیی تێدا دەردەکەوێ.

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