

Animal Management.

Sheep and goats. Lec. (1).

Second semesters.

Ovis aris, sheep genus: sheep become the more important role for animal production, according to their nature of life particularly in the Middle East.

Sheep produced, meat –milk and wool in Babylon region. The population became the old people for sheep management. The Babylon scientists recognized with sheep anatomy beside of zodiac science and related with sheep (Aries). The Arabs superior in animal management e.g. horses, camels, goat and sheep particularly in their caring and production. The Arab took the sheep to Andulas region (Spain) in 800-1500.

Some advantages of producing sheep:-

1/ easy to handle and generally require little input. 2/ sheep production does not require elaborate facilities and equipment .3/ sheep consume roughage as their primary feed .4/ sheep help control weeds .5/ it provide two sources of cash income :a\lamb and wool. 6/ require a minimum amount of supplemental feeding. 7/ sheep can provide a quick return on investment.

Disadvantages of producing sheep:-

1/ a sheep enterprise must be well managed. 2/ sheep are subject to predation by coyotes, wolf, eagles and wild dogs. 3/ sheep require better fencing than do cattle. 4/ internal parasites can create health problems when sheep are intensively grazed on irrigated pastures.

Selection and breeding:-

Since life began, animals best adapted to their environment have survived and produced the largest number of offspring.

Selection should be a part of all breeding sheep production enterprises. It is effective for almost all the important economic traits in sheep. No selection program, however can improve all these economically important traits at once. Generally, the more traits involved in selection,

the less improvement will result for a single trait. The first step in any selection program is to identify the traits of greatest economic importance. They may be growth rate, carcass merit, fleece trait and reproductive efficiency.

The improvement that can be made depends on:

1/ accurate measurement of trait .2/ complete records on the flock. 3/the amount of selection pressure applied. 4/ the amount of variation of the trait different traits among individuals within the flock .5/ the heritability of the trait. 6/ researchers have estimated the heritability (the ability to pass on traits to offspring).

Sheep classification: sheep can classify in different ways: -----

1 - According to environmental altitude and condition.....

- a) Hill breeds sheep like welsh mountain, sualidale, blackface, cheviot, karradi and hamdani.
- b) Lowland breeds like Oxford, dorset down, south down Hampshire, Awassi .
- c) Desert breeds, Arabi.

2 - According to stable length

- a) sheep with long stable length, produced high yield like Lincoln, cotswold, border Leicester .
- b) Medium stable length (mixed) correidal , panama , targhee .
- c) Short stable length south down, suffolk , clun forest .

3- According to production

- a) meat breeds , Mutton : specialized for meat of high quantity and quality , high growth rate , high feed conversion efficiency , large size (Texel , Hampshire, Ile de france , shropshire , charmoise , Awassi).
- b) Milk breeds : produced high quantity of milk with high fat content 6.5% , long milking periods 100-200 days or more : East Friesian 450 kg , improved awassi 150-250 kg (turkey , Iraq , occupied Palestine , lucan 160-350 kg , Langha 260 kg , Spanis.
- c) Wool breeds high wool yield and good meat, like Mereno, Ramboulliet.

4- According to litter size ...

- a) Prolific breeds , high number of lambs , Finnish Landrace , cambridge , romanofe finnish × dorest , han-yang , Ile de france .
- b) Single, Arabi.

5- According to tail type...

- a) short tail, finnish landrace, Tibetan.
- b) Long tail most European breeds, east Friesian.
- c) Fatty rump breeds Kazokh .
- d) Fat tail, Iraqi breeds, barbari , karaman , Mongolian , ossimi, barqi , afrikander .
- e) Semi fat tail, chios (triangulates, small fat tail).

6- According to wool fineness

- a) Fine wool breeds, the wool fibers are
- b) medium wool breeds, fine and short, good quality meat, like dorest, shropshire, Hampshire, southdown, Suffolk.
- c) Mixed breeds, croosing between long wool (lincoln, Romney) with medium (European breeds). All be formed in usa and Australia, new Zealand, ex correidal , Colombia,panama , targhee .
- d) Long coarse breeds specialized for manufacturing the Tweed, cheviot, Romney, lincoln. e) Carpet wool breeds well for producing long coarse wool. The wool is good for carpet, blankets, like blackface, welsh mountain, Awassi , karradi and arabi , rahmani , ossimi, tibitan .
- f) Fur and pelf breeds these breeds produce pelts (black to brown white). High commercial value the pelt like the wild animal fur. Their new born lambs pelt very expensive like Karakul (it is preferable before lambing) 5 days, or during 48 after lambing, USSR, Afghnistan .
- g) Hairy breeds produced hair in spite of wool like Najdi, Massai.

Some famous breeds:

1- Merino, Spain, fine wool, the king is only allowed to export to other countries 1500-1650. Then Australia 200-250 million sheep, 150-200 million. Merino wool is white and dense, male horn and female without horn (hornless). The wool covers the head and legs, crimps and wool folded. Three kinds of merino according folded in Spain.

a) Species, high crimps and folded on neck and body.

b) Species, only folds on neck.

c) Species, delaine low fold, male wt. 70-80 female 50-60 kg respectively and fleece wt. 5-6 kg.

2- South down, the real purpose of the south down breeds for mutton and to produced rams for crossing with other breeds. The head is wide, face is full not too long, shoulder well set, chest wide and deep. legs full and short well let down , wool fine texture , great density , fleeces wt. 2 kg , staple length 5-7.5 cm body weight male 75-100 kg , female 50-70 kg .

3 - Hampshire, crossing south down × Wiltshire. High growth rate 450 g/day with high body weight 100-130 male, 60-80 female. The wool is white moderate length, close and fine texture, extending over the fore head and belly. Face and ear of a rich dark brown – black. Carcass is broad and straight back heavily develop legs. Both set a hornless with wide shoulder.

4 - Lincoln, long wool sheep and old breed has an immunity to foot root, fleece weight reach 16 kg (5.5-6.5) staple length 40 cm could reach 50 cm body weight male 110-160 kg and reach 184 kg, female 100-110 kg. It's good for meat and wool the face is white and covered with wool.

5 - Finish landrace, in Finland and wide spread the more prolific breeds 250-450 % , the gestation period is the shortest, could mate at any time in a year, and for crossing with other breeds to improve the prolificacy.

6 - East Friesian has thin bald tail. Milk yield 400-500 kg in lactation period 200 days, fat content 6.8 % prolificacy is good. It is original from Germany (milch sheep).

Iraqi breeds: - Iraqi sheep related to the carpet wool breeds with fat tail, they formed the high ratio of animals in Iraq 8-9 million. Their rearing depends on natural grazing; the owners (Trans human) take their sheep to the north and south districts of Iraq in late winter up to beginning spring. When the grasses are low in summer they transfer their sheep to irrigated land to graze on the field crop residues. Sheep rear in Iraq for three purposes meat 60%, milk 20% and wool 15%. There are three main breeds in Iraq and few strains in each breed.

Awassi sheep :- are distributed in Iraq , Syria , Jordan , Palestine , turkey , Cyprus , Egypt and Kuwait , they formed the highest number (55-60 %) of the total sheep population and distributed in the north and middle parts of Iraq . the fleeces is white , the head and feet are brown (light to dark) rams have a large and spiral horn , females are hornless , or short horn few numbers and colors . the fat tail reach it is length under the hock joint . mature weight male 55-70 kg , female 50-55 kg birth weight 4-5.5 kg , weaning weight 18-27 kg . dressing % 42-53 % fleece weight 1.5-2 kg , staple length 16 cm .milk yield 106-120 kg fat content 5.4% , fertility 75-85% twinning 8-15% . awassi breed has a strain called AL-Nuaimi which spread in the south parts of north district in Iraq (Ramadi) , smaller size than Awassi the body condense , short ear male wt 50-55 , female 40-45 kg respectively .

Karradi sheep :- wide spread in north parts of Iraq it is population 20% the fleece is white except the head and neck and shoulder brown-black , some batches brown in the body , both sexes are hornless , they considered the largest sheep in Iraq ear the long and wide (20-25 cm) , the feet are short and strong , with enlarged head , forehead concave . birth weight 4.5 kg , weaning weight 24 kg , mature male wt. 65-70 kg and 55-60 kg for female , fleece weight 2.3 kg , staple length 19.3 cm , dressing % 52.5% , milk yield 60-90 kg , fat 3.5-5.5 % , fertility 80-83% , twinning 4-5.6 % . Few strains Herki, jaff, Dasdi and Hamdani. The hamadani sheep are the largest, long ears, live in the low land little, birth weight 4.5 kg weaning weight 24-26 kg. mature male 80 kg , female 60-70 kg few reach 120 kg , fleece wt. 2.8-3.5 kg , milk yield 80-90 kg fertility 89-90 % twinning 124 %.

Arabi sheep :- wide spread in south part of Iraq , population 18-19% the smallest breed in Iraq , the legs are long ,they can live on poor grazing land and semi desert , resist to the difficult environments . the color is white , 10-15 % are color , males have horn , female hornless , birth weight 4-4.8 kg , weaning 16kg , mature males 50-55 kg , female 40-45 kg , dressing % 51-55 % fleece wt.1.2-1.5 kg , the finest wool of Iraq sheep , milk yield 50-60 kg , fat 5.5-6.5 % , fertility 65-80 % twinning 5 % , few male reach 95 kg , fertility 93 % and twinning 116 % by improving feeding and environmental condition . A strain from Arabi called Chevali. Najadi produced hair, few numbers in Iraq, good in milk, and twinning.



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How to care with sheep flock and its feeding and management:-

A good feeding cause

- 1- A healthy animals.
- 2- Good reproductive efficiency.
- 3 - Good reproductivity.
- 4- Resist to diseases.

Sheep consumed about 89% roughages and 11% concentrate and the diet should consist of carbohydrate include simple sugar , soluble CHO ,which can present in grasses , green diet, plant roots also barley , wheat bran , maize . The bacteria and protozoa in the rumen digest the nutrient CHO change to V.F.A. (volatile fatty acid) → energy.

Grasses are very low fermented feed stuff which contains fibers change to acetic acid. A concentrated diet is fast fermented feed stuff → butyric and propionic acid like (grains).

Protein: - include the legumes like bersim and alfalfa, turnip, cauliflower, oil meals which mixed with other grains as ground or milled or pellet. Alfalfa pellets cold easing to store and important to sheep feeding. Proteins digest inside rumen by microorganism → NH₃ → fatty acids and amino acids. NH₃ plus amino acids used by microorganism to protein build. sheep requirements from additional diet raising in range sheep need either raising in desert or mountain additional feed stuff , become the grasses are low and don't contain a good % of protein , vitamin and minerals like phosphate . for a good growth in sheep particularly in difficult environment , barley should given (120 g/d) or concentrate diet (12-16% protein) also alfalfa hay or other grasses should supply , all depend on the nature of rang.

Sheep requirement from near in farm field sheep on forage crops cultivate like grains and also the remainder crops. Sheep prefer to maintain their

requirements from grasses sometimes completed from other, like barley to be sun that sheep can get sources of minerals, Ca, P, Mg, and vitamin. it is known that sheep grazed after cattle or camels because they are clean the land and can graze the forage crops residues after cattle , because they can graze of the low level of grasses to clean the land before cultivated , after that we should give the legumes and amount of concentrate diet in some periods of the year .

Therefore the feeding ewes could divide into 6 periods.

Feeding the ewes: - Ewes can be fed according to their physiological status and could divide into six periods along a year as follow.

1- The first period (preparing for mating) and could be sub-divided into A, B. A- Period can divided the ewes into groups according to their age and weight and could give low concentrate diet (less than) maintenance to keep the ovaries in active. B-period should fed well by roughages , green alfalfa and addition concentrate diet (more than maintenance) with 600 g/day to three weeks before mating to improve body condition and adding 2.5-5 kg in the body weight to improvement in fertility and prolificacy and avoid the obese could cause a failed in conception ratio .

2- The second period (second month) continue will good feeding level to keep the body and not reduce, embryo implantation could happen, and to avoid embryo absorption and to keep the progesterone level at peak. Hay could over.

3- Third period (2 and 3 month) feeding on silage, hay, grazing should maintain the weight fetus growth is low if 5 % decrease in weight has no effect. 1 kg of good hay / day is enough with grazing.

4- fourth period (4-5 month) steaming up : should fed on high nutrient , high growth rate , 95 % of mammary tissue are grow which affect on milk yield later on , embryo grow is high to get a good lamb birth weight . the embryo growth doubled , could get the stored nutrient from its dam , the dam could be weak , therefore concentrate diet should given started from 150 gm then weekly increased up to reach 700-800 gm /day at parturition . The pregnant female need double nutrient of the dry female. The weight of dam increase up to 10-18%. The dam of twin embryo need 2.5-3 times of dry ewe.

5- Fifth period (lactating 3 months): The lamb growths for the first 4 weeks completely depend on milk. milk yield depend on level feeding prior and after parturition , number of lamb born , became the lambs their dams produced 40% more milk therefore more nutrients need mainly depend on grazing , forges , roughage , and some concentrate can give if the other , are not enough . The milking used need three times of the dry ewe. The concentrates contain 16% protein and should add Ca, Cu, vitamin E. After one month of lamb's age the milk yield reduced, the lambs started to eat concentrate then less food can supply for this dams.

6- sixth period (three month) should fed the dams on roughages (good) to get some weight which was lost previously in pregnancy and lactating period and the ewes increase a year in age . Therefore this period should gain some weight in the body gradually which called nutrition static effect.

The importance of ewe feeding in last stage of pregnancy (steaming-up):-

- 1/ early pregnancy of ewes during the first three months require an ordinary ration because the fetus grows slowly.
- 2/ at the beginning of the 4th month of pregnancy, growth rate of the fetus increases and multiplies; hence a feed storage in the body of the dam is continued.
- 3/ owing to high feed compensated, feed shortage could occur which should be compensated by balanced rations to prevent intoxication, paralysis and mortality which may occur during parturition or post – partum due to unbalance rations.
- 4/ there is an important relationship between nutrition and quantity of produced milk post- partum. It was approved that 95% of secretory tissue of the mammary gland (udder) undergo enlargement and being prominent in the last eight weeks of pregnancy for preparedness of milk production.

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Lamb rearing regimes:-

There are many regimes used in lamb rearing:

1- Natural rearing: the lambs suckle their dams up to weaning, or could and the dams as foster mother. Its disadvantages less rumen developed, cannot the ewes be remated, less growth after weaning, high mastitis happen and more or and teat and udder damage, no milk can get from sheep.

Weaning: its mean total stoppage or cessation or outage of milk to the lambs leading to dry –off the dam. The "dry ewe" has a chance preparedness for the next breeding season. Dry feeds are used for feeding of the weaned lambsso there are two regimes of weaning

1/ gradual weaning: a/ lambs are prohibited to nurse their dams an defined period. Time of milk – consumed prevention may be lengthening gradually. b/ at the beginning , this period is 6 – 12 hours daily for several days , hens ,such lambs should be fed on concentrate fed to accustom these lambs for any dietary shortage. C/ about two weeks later, lambs are not allowed to nurse their dams totally. An adequate amount of feed is provided, the concentrate feed is prohibited for dam feeding in order to dry these dams .d/ weaning is carried out for lambs of 2-4 month age. e/ in ewes having more than one lamb, the heaviest lamb (25 kg weight) is firstly weaned , other lambs are left until reaching the suitable weight.

2/ abrupt weaning: a/ lambs are prevented from nursing their dams totally and abruptly. B/ lambs are weaned as reaching ages and weights capable of consuming roughage and concentrate feed. C/ concentrate feed should be provided in adequate amounts for lamb if the dams are not milked, the concentrate feed should not supplied.

2- Early weaning: the lamb continue to suckle thin dams for 1-1.5 month then gradually weaned the lambs by limit suckle their dams for few days,

the age of limit the weaning is to know the rumen development, this regime has many advantages (milk can get from sheep – the rumen started early develop then the growth rate will be increase or high – less damage the udder and teat – can remate the ewes again.

3- Artificial rearing: this regime is used by abrupt the lambs suckle their dams after colostrum feeding for 24-72 hours. In order to insure that the lambs receive enough colostrums (gamma globulin). then the lambs can fed on milk replacer by artificially either by teat tank or teat bucket the amount should give is about 250 gm dry milk replacers to be solve with water to 1:4 and give it for 3-4 times / daily, with age progress the number of the suckle reduce to 1-2 times / daily then one and concentrated diet should supplied (16% crude protein) and should easily to be digest. The milk replacer should be similar its content as sheep milk .up to weaning 2.5-3.5 month.

4- Restricted suckling regime : this regime can be applied by let the lambs suckle their dams up to one month old then separate the lambs from their dams completely except let them to suckle their dams twice daily for 15 minutes after the ewes be milked by hand or machine . When this regime is applied, concentrate diet (16% C.P.) should supply ad libitum for lambs and small amount of roughages, **the aim to apply this regime and the advantage are...**

A - Let the lambs consume small amount of milk after milking in the morning and evening and stimulate the dams to produce more milk.

b- It forced the lambs to eat more concentrate and early rumens develop and the growth rate will be high soon.

c- Can get milk for human being.

d- Less damage for udder, teat and less happen for lambs.

e- No death can occur.

5- Creep feeding: another regime could be applied during suckling regime, by let the suckling lambs to eat a concentrate diet which are put in the corner or middle of the yard which has an orifices or walls contain holes which allow only the lambs to enter and consumed the concentrate diet through these holes only without their dams and could change the

size of holes depend on size of lambs or age by putting a wooden boards. These feeders called creep feeders.

The advantages of using are:

- A – Accelerated rumen development by concentrate consumed and prevents the ewes to eat.
- b- Accelerated the growth of lambs.
- c- It helps the twin lambs to reach the decided weight of single.
- d- It helps to produce a fatter lamb with a short period particularly in case of poor grazing.
- e- It reduces the grazing problem of unarranged grazing.
- f- It helps the dams to reduce the consumed by lambs.

Late or spring lambing: -----

Late lambing has some definite advantages over winter lambing. The synchronization of the sheep production cycle to the cycle of forage growth allows for the maximum utilization of non- harvested forages. In general, this allows for lower costs of production than a winter lambing system. The decreased cost and labor associated with decreased use of harvested and stored feeds is a powerful advantage.

Late lambing takes advantage of utilizing the spring flush or grass at the high nutrient requirements period of lactation. Also with cool season forages, another smaller spurt of forage growth occurs in late summer / early fall period. This is advantageous in preparing the ewe for breeding.

The advantages of maximum forage utilization are multiplicative. Reduced labor involved in feeding harvested feeds, cleaning up facilities and sheep management procedures are powerful advantages. Reducing labor in the sheep operation is a big advantage of lambing late.

Labor at lambing is reduced primarily because the threat of bone-chilling cold temperature has passed and ewes don't have to be checked every 2 – 4 hours. The chances of lamb freezing are severely reduced. That's not to

imply that adverse weather won't occur during the spring, it does but the extreme cold is less likely to occur.

Spring lambing has an advantage in that the breeding and lambing seasons are shorter and more condensed. Breeding ewes in late October through early December ensures that all ewes of any merit are fertile. Rams are also more fertile in this time period. The result is that most of the mature ewes should settle within two cycles (32 days) and the lambing season should last only about 35 days. Many times, winter lambing flocks have a 60 – 90 day lambing period, resulting in shepherd burnout and a non – uniform size in the lamb crop.

Spring lambing can also offer more management flexibility. Leaving some wool on the ewes for the winter period allows for outside wintering on crop residues, pasture overgrowth or poorer quality hay. Using large round bales can decrease labor and cost of winter feeding. Ewes can be lambed inside barns as with winter lambing programs or with the right type of ewe. They can be lambed on pasture. Ewes and lambs can be kept in mixing pens around barns or can be moved to pasture shortly after birth. Lambs can be raised on grass with their mothers, offered creep grazing or offered creep feed. The point being, management and nutrition programs can be made more flexible. Thus, one can tailor program to the market and feed resources available.

Another large advantage is healing their sheep. Late lambing sheep generally spend less time in the barns and more time outside on pasture. These results in less health problems especially heal their lungs.

To lamb late and go right to grass with the ewes and lambs requires a top notch parasite and predator control program. Young lambs are especially susceptible to both of these problems. Without a sound parasite treatment program, lamb mortality can be high and growth rate and thriftiness will be low. Predators are always a concern with any age sheep, but young lambs are an easy target for coyotes, wolf, etc.

Pasture management has to be better in a spring lambing program and/or the carrying capacity of breeding ewes has to be reduced on a per acre basis. Fertilization, plant species choices, rest and recovery periods, etc., all require increased inputs and management.

regardless of time of lambing ,for lambs to be sold as finished they need to be fed a grain-based diet for at least 30 days to meet acceptable U.S. standards for grade , yield and carcass size . So even if late lambing on grass occurs, unless one is selling lightweight lambs or feeder lambs, some grain will need to be fed to most lambs.

The ideal lambing season: -----

The following scenario would approach the ideal lambing season: ----

1/ all ewes bred. **2/** all mature ewes weaning twins. **3/** no lambing problems. **4/** no weak lambs. **5/** all ewes producing adequate milk. **6/** all ewes' good mothers. **7/**no bummer lambs. **8/** no health problems with ewes or lambs. **9/** 35 day lambing season. **10/** no predator problems. **11/** good weather.

The controlling of weather is possible issue but all other factors can be controlled with varying rates of success. Certainly, type and size of sheep operation will modify what is considered an ideal lambing season.

Environment will dictate number of lambs weaned per ewe. Realistically, an ideal lambing season is not likely; however, we can manage the ewe to approach the ideal as close as possible.

Hopefully pre-breeding management has been sound , (flushing ewes , culling of ewes , breeding soundness exam on rams , appropriate health program for ewes and rains , etc) much of the success or failure of lambing season begins with the breeding season . However, the primary focus of this lecture will be from breeding to parturition.



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Early Gestation:-

The period of early gestation most critical to success during the lambing season is the first 30 days after fertilization. The first 21 to 30 days after breeding is when embryonic implantation occurs. This first 30 days is when most embryonic mortality occurs. Thus, anything that can be done to reduce embryonic mortality and should result in more lambs born. Shearing, vaccinating working ewes. Pronounced changes in feeding practice should be avoided during the first 30 days of gestation

Ultrasonic pregnancy scanning can be done on ewes from 35 – 60 days after breeding, depending on equipment used and operator skill. Some operators can determine whether pregnant or not with 98-99 % accuracy. Also skilled operators can count fetal numbers with accuracy above 90% .with medium to large sized flocks, ultrasonic pregnancy scanning will save producers money and the information obtained can make management more efficient. Assume a 100 head ewe flock with 95% conception.

Ewes can be vaccinated for tetanus and enterotoxaemia (overeating) from 2 to 4 weeks before lambing. Antibodies received by lambs through colostrums will give them immunity for 5 to 6 weeks. for producers that are shed or bam lambing , the ewes should be in short fleece prior to lambing .this result increased lamb survival and decreased health problems .ewes in full fleece take more room in a facility ,are more apt to lay on lambs , bring more moisture into the facility and are more difficult to observe and manage . If shearing ewes in cold weather, be aware that they will need extra energy intake for a few days after shearing until their body metabolism adapt to the removal of wool.

Ventilation and sanitation of facilities are critical concerns of producers lambing inside during the cold months. Inadequate ventilation is the case of moisture and ammonia buildup, which in turn lead to pneumonia and

scours problems. Keeping facilities clean and well ventilated will prevent many health problems.

Feed additives can be fed to ewes during late gestation to prevent health problems and increase productivity .for instance, an antibiotic such as overomycin can be fed to ewes to increase lamb survival and decrease disease problems in ewes. Also, if an abortion problem exists; high levels of antibiotics can be fed to control outbreaks.

Lamb fattening :- before starting this process , the lamb should divided into groups according to sex , weight and age , then vaccinate and drench them against internal parasite and dipping tank . then start to feed them on concentrate diet 400 gm / head or 2-3 % /head / daily / weight , and hay of good quality and alfalfa should given freely . It is better to give the concentrate as pellets then the ground or milled to get more utilized and less losing . Also it can fatten the lambs on artificial grazing which has legume diet (alfalfa) and lowering the concentrate diet. the fattening regime depend on many factors , breed , age , weaning age , lambs weight , sex , concentrate diet quality and quantity , period , the demand weight of the end period , nutritional plan .

Nutritional disorder: - there are many problems can happen by an increase or decrease the amount of diet or any nutrients some of them can cause a retarding in growth or obese or death.

1- Acidosis : by consume a large quantity concentrate contain a mixed ingredients either ground or milled which is high fermented , could happen in summer and the animal drink a lot of water or could happen by grazing on wheat (cannot cultrate) . These animals treated NaHCO_3 to neutralize the acidosis then accumulate the sheep gradually grazed on good pasture.

2- Over feeding: it happen as a result of high level of concentrate diet intake because digestion disturbance, the rumination be stopped the diaphragm could be damaged as the rumen enlargement then death be occur. Laxative should be given, or rumen surgical operation called rumentomy could applied.

3 - Rumenitis: it happens as a result of eating concentrate diet without roughages for long time. And high acidosis formation in the rumen for

long time, cause damage or ulcer in rumen membrane, it can be overcome by giving the whole grain and hay or alfalfa or pellets.

4- Bloat or Tympani: it happen as a result of weight legumes intake, particularly at early growth caused an accumulation of gasses in the rumen, the breathing be difficult. To overcome physical exercise for animals and rumen bunching from side should apply to reduce the gasses.

5- Urinary Calculi : as a result of taking minerals , Ca, P, Mg and Ammonia salt , urination be stopped particularly in males surgical operation , exercising , and reduce the minerals in diet.

6- Pregnancy toxemia: it happen in twinning particularly in late pregnancy, less appetite diet with high energy and protein gradually.

7 - Sorghum poisoning: the animals graze on young white maize which contain high ratio of pussic acid (the red color present of stems). Avoiding the grazing on this pasture, hay silage and straw can give.

8- Hypomagnesaemia: reduce Mg in the blood and correlated Ca intake; it happen during late pregnancy and lactation calcined magnisite (6 gm. /day) can give.

9- Muscular dystrophy : it affect all parts of the body particularly muscles , weakness , as a result of Selenium and vitamin E deficiency injection with vitamin AD3E and add the Se .

10- Wool balls: as a result of low roughages intake (straw) the animals consume the wool then, the balls be formed in the rumen to avoid straw be supplied.

Reproduction Management in Sheep:-

Preparing Rams for mating: to increase the sexual desire in rams should be explore the rams for a short period before mating season of ewes, to stimulate for estrus cycle.

Ewe, Ram ratio: The numbers of rams / ewes for mating depend on rearing regime, breed and age. The one year old of males 1 ram /20 ewe be used in the field and 1 ram / 15 ewe in grazing, when the male all older the ratio reach 1/30 or 1/35.

Rams fertility: the rams should be of high genetically reproductivity and should test them from their biologically and their semen and should have a large size of testes and their presentation and also should test the penis also should exam the hind quarter because they effect on mating process.

Rams feeding and caring : should take care on rams feeding along the year with good health , they care be fed on silage , hay , straw , legume , white maize and minerals with vitamin in addition to concentrate diet should supply in case of low other feed stuff . During mating season 0.5 kg of concentrate should supply to reach ram in addition the other roughages for two weeks before mating and continue to 50 days during mating season, also then rams should drench against internal parasites and dipping them against external parasites, hoof clipping should be done.

Vasicotomised teaser or tester rams : this process can be done by burdizo or rubber rings , surgical operation , the main process is be to stitch the seminal cord to in inhibit the sperms testes be out . These rams are used to detect the ewes at estrus without inseminated or by using rams with raddled harness to let the color on ewes back at estrus.

Sheep management at mating season:

Sheep are seasonally mated in spite of they are seasonally poly estrus, the estrus repeated every 16-17 days. The breeding season differ according to breeds, environmental condition (light and heat), genetic traits, age, feeding regime and hormonal assay. The European sheep are seasonally breeder when the light hours started to reduce and the dark hours increased, light judged the breeding season. the sheep liver near equadore can bred along the year because the dark and light hours (day) differences are low as in most Iraqi breeds , which tend to mate in most times of the year (sometimes are ceased) . Most of Iraqi sheep started to mate on May and can change. There are other factors affecting the season such as the feeding regime, the environmental which are suitable for lambing. It is recommended to mate the ewes in Iraq from May to June, in North September, October, puberty age 7-7.5, 10 – 11 months, the estrus lasted 10 – 42 hours with average 30 hours. Ovulation can happen in late period of estrus 12 -30 hours.

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The estrus signs are

1 / frequent nutrition. 2 / the ewe become near the ram. 3 / standing. 4 / the tail are irritated. 5 / the vulva become red. 6 / some secretion from vagina which can be open to facilitate the semen enter deuced.

Exogenous hormones to promote reproduction: the hormones are used to

1 / regulate the estrus cycle (synchronization). 2 / increase the ovulation rate. 3 / onset the breeding season. 4 / mating during an anostrum season.

Followed by using 1 ram: 10 ewes on using Artificial insemination. These hormones be used depend on season, month, amount of doses, age. The hormones used, progesterone, flurogesteron acetate, medorty progesterone acetate, estrogen, followed pregnant mare serum gonadotropin (HCG). The progesterone or estrogen can given orally, or injection, implantation or by sponges for 12-13 days which can absorb this hormone from vagina walls. The progesterone act as corpus leutum, after removing the progesterone action, PMSG can injected which stimulate the ovaries to produce the ova which called super ovulation. the results of using hormones are differ according to stage of estrus cycle ,season , genotype, age , level of feeding , body weight . Also prostaglandin PGF can be used.

Puberty and sexual mating: as discussed in cattle but it can be divided **into three stages:**

1/ infantile from birth to 10 weeks of age. 2/ pre – pubertal from 11-20 weeks. 3/ pubertal and ovulate stage 21- 27 weeks.

Factors affecting the productivity and reproductivity of sheep:

Ewe lambs reach puberty in ages of 7 – 7.5 month. However, it may need further time to be sexually mature can be able to be pregnant with

delivery and lactation requirements. Thus, puberty can be defined as a certain stage of female life which exhibit estrus for the first in her life accompanied by ovulation. Reaching this stage, the weight of female could be 55% of adult weight. Sexual maturity can be known by the first successful pregnancy and delivery in female life, the weight of female at sexual maturities about 65 – 70 % of their adult weight.

The success of reproductivity in sheep depends on the number of lambs produced / ewe and depends on following: **1/** NO. Of lambing / year **1** or **2** or **3** lambing / year. **2 /** NO. Of lambs born / lambing (litter size) **.3/** NO. Of lambs weaned. **4/** NO. Of lambing / ewe along it is life (Longevity) in the flock.

Effect of photoperiod on reproduction: sheep can be affected by light period changing either natural or artificial. This change from long day (18 hours) daily gradually or suddenly (artificial) to short day (8hours). This change has an effect on reproduction.

Sudden presence of rams to the ewes: the sudden induction of rams to the ewes flock before mating cause an accelerate for the onset of estrus through the pheromones.

Pregnancy period: It last for 150 days with a range of 143 – 156 days and depend on breed, age, litter size, type of birth, body weight, feeding level. High feeding level reduce the pregnancy period, twins have shorter period the maiden ewes lasted longer period.

Pregnancy diagnosis:

1/ at the beginning, does not return to estrus. **2 /** Using X- Ray. **3 /** ultra-sonic scanning. **4/** Electrocardiography. **5/** Vaginal smear. **6/** Palpation. **7/** Test the mucous membrane of vagina. **8/** Hormonal test.

Preparation of lambing:

1/ Preparing individual or group yards which are healthy, warm and faraway from air winds and bedded with straw.

2/ removing the wool around the udder and the back to facilitate parturition and suckling.

3/ Isolate the maiden, twin and other faraway.

Ewe status at parturition it should notice the parturition signs showed the udder is developed, the enlargement of reproductive orifice. In case of difficulties, it should notice the presentation of embryo the four legs first then the nostril, then the body hind legs. Dystocia cases can happen as a result of large size of embryo, lack of hormones secretion, abnormal, the reproduction orifice is small.

How it help the dystocia ewe : firstly , washing the hands and using an sterilized ointment ,then let hands on the reproduction orifice and correct the embryo presentation , pull the embryo slightly with the thrust if the period lasted and the liquids be dry lubricate the vagina to facilate the parturition .

How to care the ewe after parturition: watching it, exam the udder gave a laxative and water with light feed.

How to take care the lambs after parturition:

1/ removing the membranes from nostrils. 2/ make massage of chest and belly .3/ if the breathing process is late , catch the lambs from the hind quarters and rise up and by a circle movement to push the blood head and lung . 4/ Sterilized the umbilical cord. 5/ standing. 6/ colostrum are suckling.

Ewes encouraging accepting their lambs: **the ewes do not show to accept their lambs as a result of**

1/ young ewes .2/ suffering from parturition. 3/ lack of smelling. 4/ low production of milk. 5/ low body weight.

The maiden ewes should separate from others , and let their lambs near it is head to lick it or smell it and put some drops of it is lambs to facilate it is smell or by tie the ewe and let it is lamb feeding suckle it is dam or by putting the shepherd dog .

Adopting, fostering and grafting: this method used for ewes lost their lambs to adopt other by. 1/ put some of it is milk on the head of the orphan lamb .2/ rubbed the ewe nostril with one pheromones also the lamb. 3/ tie both the ewe and the lamb. 4/ used the dead skin lamb. 5/ used some pheromones. 6/ by using the adopting box.

Rearing the orphan lamb: could be used other dam or bottle feeding or bucket with a feat and be insuring to feed the colostrum. Also could be used the dairy cattle milk.

Suckling and weaning: to allow the dam is suckling it is lambs at different periods, the suckling periods depend on: **1/** the amount of dam milk. **2/** No. of lambs suckled. **3/** the healthy udder. **4/** feed intake.

The suckling period lasted 2-3 months could be 4 months as discussed before.



Animal Management.

Sheep and goats. Lec. (6).

Second semesters.

Management of goats:

- 1- The goat is a ruminant animal having well-grown udder.
- 2- There is similarity between goats and dairy cattle according to their nutritional requirements, body physiology and reproduction as well as other similarities in management, husbandry and feeding for better production.
- 3- Goats have not more than 1/10 of dairy cow weight is regarded as an efficient competitor in milk production, however it may be better than the cow in milk production.
- 4- The milk of goat is white (due to their ability to transfer the carotene into vit. A) Making it easily digestible and absorbable.
- 5- The milk of goat has characteristic flavor and aroma which differentiate it from cow milk due to the presence of certain fatty acid.
- 6- It was found that it is possible to improve milk production of goat by selection good milk production breeds.

Reproduction in goats:

Goats are seasonally polyestrous; this estrus is repeatedly taking place in certain season which is often the spring and autumn. However, there are large individual variations among different breeds of goats a .this condition is attributed to the geographical location in which these goats exist. Also ambient climatic environment have effect on the estrus such as the light, rainfall levels and the presence of green feed.

In general, some reports referred that the goats of the tropical regions have non- seasonal polyestrous reproduction all over the year. However, goats of cold regions are seasonal polyestrous. Beginning of the sexual cycle “breeding season “depends upon shortening of the day “which is at the mid of summer “. This phenomenon has an effect on the optic nerve,

later effect on the hypothalamus which will later influence on the secretions of the pituitary gland and the ovaries.

Some studies indicate that the variation between tropical and cold region goats is ascribed to hereditary difference among different breeds and not due to geographical environment.

The effect of male presence among females:

Breeding season of goats could be earlier few days by leaving males “Bucks” with females “Does”. This process will stimulate occurrence of estrus in these does. Also putting females in dark barns for prolonged periods (many hours) of day have similar effect.

Frequency of kidding:

- 1- The reports mentioned that it is possible to obtain two kidding during one year as seen in black Bengal goats’.however; three kidding within two years is the commonest.
- 2- Three kidding within two years can be seen in different standards. Breed especially those exist in tropical regions of Africa and Latin America.
- 3- European breeds of goats and some Mediterranean breeds of goats have single kidding per year. This condition is ascribed to the nature that most of these breeds are dairy goats characterized by long milking season which may reach 10 months leading to delay the subsequent breeding season.
- 4- In meat production types of goats, the period between two deliveries is shorter than those of dairy goats due to short milking season of milk – producing goats. Hence, it is possible to obtain more than one kidding throughout a year in meat –producing a goat which is more than kidding in dairy goats especially if the level of feeding is excellent.
- 5- There are variation among goats in kidding season due to the variation of estrus exhibition and breeding – season. This variation is attribution to the differences in hereditary structures and their geographical location as well as the differences in milk production and their periods.

Fertility and prolificacy of goats:

- 1- Age of sexual puberty of goats is between 8-9 months, the sexual maturity is between 12-18 months. Estrus cycle occurs between 17-21 days, signs of estrus “heat” in goats are similar to sheep estrus signs. These signs are the approaching of the doe to the buck, sniffing, touching of the male wiggling and raising of the tail with certain vocalization to draw attention of the buck.
- 2- Range of pregnancy period in goats is 150 days or 5 months or between 145-153 days.
- 3- Fertility in goats is measured by number of mating required for fruitful fertilization. Fertility concerning multiples birth is measured by number of offspring in one delivery.
- 4- It is known that the goat is a fertile animal due to its ability to produce multiple births.
- 5- some information indicate that some breeds of goats produce twins or trice which could be increased with advance of age up to 5 or 6 years . 5-6- year is the production life of goat weight of the dam has important effect on the ratio of twins or trice, however, increase body weight of the dam will increase ratio of twins.
- 6- The breeding season begins in spring and autumn. Good male “Buck” can mate between 50 -80 female “Doe” in the breeding season.

Milking in goats:

- 1- Milking of does can be done twice per day at least like cows. Twice milking of goats is an achieved to lessen the intra-mammary pressure which will later causing low milk secretion and increase udder drying.
- 2- Milking season of goats are about 7-10 months, however, it may be longer and may reach 20 months if there is a delay in mating of the female.
- 3- Peak milk productions are seen during the two successive months after delivery later, milk production decrease gradually.

4- Drying “milk” period is occurred from 6-8 weeks before the subsequent delivery which is preceded by gradual drying.

Selection and breeding in goats:

The base of selection in goats depends upon:

- 1- Body structure.
- 2- Body conformation.
- 3- The recorded milk production.
- 4- Animal ratio.
- 5- The outer morphological configuration of the body which often leading to select the animal for milking.
- 6- Food conversion efficiency of the animal to milk production.

The general characters which should be present in dairy goats:

- 1- Intact healthy udder, well- attached to the body, having moderate length teats.
- 2- Good healthy legs and limbs.
- 3- Deep chest.
- 4- Clear and prominent milk veins.

Production of milk depends upon mean milk production as well as fat percentage of the milk, determined at the laboratory at least for one day per month.

Feeding:

- 1- The feeding requirement of dairy goats for maintenance is higher than that of dairy cows. Feeding requirements has relationships with:

A/ body weight

B/ feed conversion efficiency.

2- The goats are able to consume feed containing high percentage of roughages up to 4% of body weight according to the availability of and energy concentration.

3- Goats ration should contain at least 13% crude protein.

Note: the newly-born goat “kid” on the mother’s milk depends however after the period 1.5 months of age; the kid decreases his feeding on milk of dams to the weaning which is gradual.

Weaning of dams occurs between 5-6 months, goats should be checked not to be infected by “Brucellosis” or “Malta fever” causes abortion of pregnant does, which is zoonotic “communicable “to man.

Goats shed:

Goats are lodged in sheds having the dimensions: 5m² /animal for the floor, 5 m height the ceiling or little higher. The barn should contain milking room, theatre from exercise fenced by a fence of 1.5- 2 m height.

Domestication of animals:

It is the process carried out by man for inter – relation of the breeding, production, management and husbandry of wild animals.

Causes of animal domestication:

1- Passion and sympathy of man towards the animal especially those of ladies and children.

2- The direction of man to domesticate, approach and take care of wild animals is due to the fact that such animal represents a source of power to man as well as to provide their needs in carrying out heavy duties and agriculture practices. Hence a new period started to improve the animal to the best,

Steps of domestication process:

1- The period between gentling, taming and domestication. In this period, the wild animal is allowed to live and mix with their similar domesticated animals or with similar well-trained animals that are accustomed to live with man.

2- Breeding of an animal in confined places with allowance of those animals to breed and mating within these places.

3- after the animal being under improving, breeding and selection. i.e. after obtaining good and well – desired traits either by man's effort or by natural breeding that make the animal “developed” in the scene seen by us nowadays .

Alternative of colostrum:

One (stirred) egg + 0.3 liter of water + 0.6 liter of milk + one table spoon full of castor oil.

1- The white of the egg has anti-bacterial action as with E. coli which causes diarrhea.

2- The lecithin found in the egg yolk is considered as fat emulsifier helping in the digestion of fats quickly by the calves.

3- Egg albumen is highly similar to colostrum's globulins, which can pass through blood stream without changes during 24-48 hours.

4- The castor oil is a laxative substance.

5- The milk contains all essential elements for maintaining calves life.

Benefits of colostrum:

1- Antibodies for disease prevention.

2- 18 % protein as well as energy.

3- Low level of lactose percentage.

4- A laxative substance for better gastro-intestinal tract movement.

5- It contains essential minerals and vitamins which are easily –absorbed from the gastro-intestinal tract.

6- To decrease mortality rate.

7- To prevent the occurrence of diarrhea.

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