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Animal Health Fact Sheet

BREEDING SOUNDNESS EXAMINATION OF RAMS

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The objective of a breeding soundness examination (BSE) of rams is to evaluate and classify their potential breeding ability. This process should include evaluation of their physical condition as well as an evaluation of the semen itself. A BSE does not include an evaluation of sex drive or breeding behavior because there are no standardized criteria by which to judge these. Their best evaluation at present will come from observation of the rams breeding behavior after introduction into the ewe flock.

It is very important to observe for lameness, body condition and any other defects which may interfere with the breeding process. Rams with problems which cannot be resolved should be culled without the expense of semen evaluation.

Ram epididymitis caused by *Brucella ovis* is very common in western range flocks. It is almost a waste of time and effort to conduct a BSE on an infected flock. The BSE would find many of the rams with epididymitis, but not all of them. There are cheaper and better ways to identify the infected, carrier rams. The *B. ovis* should be eradicated by palpation, blood testing and culling of carrier rams and then the BSE would be much more worthwhile.

It must be recognized that semen evaluation has limitations. An evaluation should be considered as one "snapshot" in the reproductive life of a ram. If the ram suffers an illness which causes a high fever, such as bluetongue, the breeding ability of the affected ram may be severely compromised for 2–3 months. Rams which are classed as questionable or unsatisfactory should be rechecked that same day and preferably again in 4 to 8 weeks. If this recheck is not practical, the owner may elect to base his decision for the ram on only the one examination.

Remember that sperm cells used the first day of breeding were produced 2 months previously. Plan ahead to have the rams in the desired body condition, with exercise, prior to time of breeding.

There are very few sterile rams. One objective of a BSE is to find any of sterile rams which are present but the main objective is to find and remove those with reduced fertility.

Range producers have often run 3 to 3 ½ rams per hundred ewes for breeding. Experience has shown that by eliminating *B. ovis* and rams with problems found during a BSE, the number of rams used can be reduced to 2 ½ or 2 and perhaps even to 1 ½ per hundred ewes. This applies even when they are being bred on desert rangelands.

PHYSICAL EXAMINATION

The general health of the ram should be evaluated, observing especially the eyes, feet, legs, prepuce and penis for any defects that would interfere with the breeding process. Body condition should be monitored but it cannot be changed quickly when it is time to begin breeding. The testes and epididymides should be palpated. The impairment of one testicle with scar tissue or abnormally small size will reduce the breeding capacity and endurance of that ram, even if the semen appears normal under the microscopic exam.

The scrotal circumference (SC) should be measured as it gives a good indication of a ram's breeding endurance. The SC will vary with the season of the year and with body condition but would usually be at a maximum peak during the fall breeding season. Ram lambs with a SC of less than 30 cm and adult rams with less than 33 cm should usually not be approved as acceptable breeders.

SEMEN COLLECTION

The ram may be restrained by hand on a board on the ground or on a few bales of straw to help keep the dirt and dust contamination to a minimum. Or, a calf table works well for large numbers of rams. The penis is extended and grasped with a gauze sponge and held with the urethral process directed into a test tube. A battery powered electroejaculator is inserted into the rectum and rhythmic stimulation applied until ejaculation occurs and a semen sample is collected.

SEMEN EVALUATION

When the weather is cool, the manipulation and evaluation of semen should be done in a controlled environment to avoid the effects of cold shock. Some possible sites for the microscope and lab equipment include a heated office or shed, a pickup cab, the back seat of a car or a mobile trailer or camper. The semen samples should be kept warm in a heat block and the glassware should also be warmed. The semen is evaluated for sperm motility and for the presence of white blood cells. Then a stain and is applied to a sample and evaluated for sperm morphology (shape) by counting at least 100 sperm.

Sperm motility may be reduced and even completely inhibited by cold shock, the presence of urine in the semen or by diluting fluid with an abnormal pH. Sperm morphology is impaired by cold shock, rough semen handling, prolonged sexual inactivity and abnormal heat or cold stress during sperm storage in the epididymis. The stress of transport and housing at sales, especially during the heat of summer, may result in a variety of sperm abnormalities. These are usually temporary and resolve in 3-8 weeks.

INTERPRETATION OF REPORT DATA

The data collected from the physical examination and semen evaluation are used to classify the ram into one of four categories; excellent, satisfactory, questionable or unsatisfactory. It becomes a judgement decision for the veterinarian conducting the BSE but should be based upon the systematic guide system that is now available for ram evaluations.

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