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## PREVENTION OF BLACKLEG

By

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# PREVENTION OF BLACKLEG

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There appears to be some confusion as to differentiation of products used in immunizing calves against blackleg.

In the first place, let it be remembered that blackleg is a specific germ disease, that nothing else will induce the disease and that as far as we know at this time nothing will prevent or cure it save certain biologics which are spoken of collectively, but erroneously as vaccines. The bacillus of blackleg is always found in the lesions and occasionally in the blood stream. The well-known symptoms of lameness and swelling over the shoulder or hip are not always present. In these cases laboratory assistance is often necessary to differentiate this disease from hemorrhagic septicemia.

During the last few years remarkable discoveries have been made in methods of immunizing against blackleg.

## ATTENUATED VIRUS

The attenuated virus has been used in the form of pellets, powder, cord and the commercial liquid blackleg vaccine. Certain biologic houses have sold the pellets, with an injector for inserting them under the skin. The government, as well as biologic firms, have distributed the powder, with directions for placing it in solution, and administering with a hypodermic syringe. The cord method consisted in placing the medicated cord through the skin, usually on the under side of the tail. The liquid blackleg vaccine is a uniformly attenuated culture of the bacillus of blackleg, but in addition to the attenuated organisms, contains a certain amount of specific toxin, which should not only make accurate standardization possible, but which should make it more effective as an immunizing agent. Very satisfactory results have been reported from the use of this product. For several years the attenuated virus in the powder or pellet form represented the best that was known in blackleg immunization and it has no doubt saved millions of dollars worth of cattle. The Colorado Agricultural College is still distributing the government blackleg vaccine free to citizens of Colorado. It is necessary, however, to have a blackleg vaccinating outfit, which now costs about \$5.00, but one outfit will do for a whole community and will last for many years. Vaccine in this form can not be definitely standardized and losses after its use are frequently reported.

### AGGRESSIN (Tissue Filtrate)

The veterinary department of the Agricultural College of Kansas worked out a greatly improved method of immunization against blackleg. The "Germ Free Aggressin" is prepared by extracting the juices from the diseased muscles of an animal dead of blackleg and filtering it through germ-proof filters. This product depends entirely upon the specific blackleg toxin for its immunizing properties. This, it is claimed, will absolutely protect a six-months-old calf from the disease throughout its natural period of susceptibility. This product is no doubt the most effective immunizing agent for blackleg on the market.

### FILTRATE

This product also depends upon specific toxins for its immunizing properties. The toxin in this case is produced under artificial conditions in a laboratory, while the tissue filtrate is produced under natural conditions in the body of a calf affected with blackleg. The so-called filtrate does not appear to be as stable a product as "The Germ Free Aggressin" and according to reports, in actual practice, has not been as effective. It is likely that some method will be devised for preparing the artificial toxin without loss of potency and when this is done it will not only be as reliable as the other but should be far cheaper.

### SERUM

Blackleg serum is prepared by hyper-immunizing horses with virulent blackleg virus.

The serum alone produces a passive immunity that lasts but a few weeks. The serum produces an immediate but not a lasting immunity. It is especially valuable in affected herds to save those animals developing blackleg between the time of vaccination and the establishment of a safe immunity. The serum also has curative properties and in large doses will save a certain percentage of animals that are showing symptoms of blackleg.

### SERUM AND VIRUS

The double treatment will produce a lasting immunity but has one great disadvantage in that the serum and virus can not be injected simultaneously. The virus can not be given with safety until three days after the serum is injected and this is impracticable because of the necessity of handling the animals twice. In large herds this is a serious disadvantage. Neither

the serum alone, or the serum and virus, are being used extensively.

### DESTROY DISEASED CARCASSES AND DISINFECT

Of vastly more importance than vaccinating for blackleg, is the destruction of all blackleg carcasses and the disinfection of everything with which the diseased animal has come in contact. The carcasses should be consumed by fire if fuel is available, otherwise it should be buried at least 4 feet deep, placing one bucketful of quicklime on the inside and two on the outside of the carcass.

### SUMMARY

Among such a multiplicity of blackleg biologics, and confusion of terms, the laity is at sea not only respecting the product that should be ordered, but the term that should be used in placing orders. The aggressin is now generally looked upon with favor since it produces a certain and lasting immunity. It is sold as "Kansas Germ Free Fluid Vaccine," "The New Germ Free Blackleg Vaccine," "Germ Free Blackleg Vaccine," "Tissue Aggressin." In a general way this product is spoken of as aggressin and it will be well to use this term in placing orders.

The Blackleg Filtrate is perhaps the second choice as an immunizing agent. It is the filtered product of cultures of blackleg germs and is very effective in preventing blackleg. The price makes it attractive. The serum alone is used only under special conditions, which have been mentioned previously in this article.

The double treatment, serum and pellets, is advantageous in herds where the disease has already made its appearance. It has disadvantages which have already been mentioned.

The government blackleg vaccine is an attenuated virus, containing the living organisms, it is not above suspicion, is not standardized, and is not altogether reliable in preventing blackleg. It is distributed free by the Agricultural College. The Blackleg Pellets are the same thing as the above, administered in a more convenient form.

Among such an array of products used in blackleg control there is much confusion and many inquiries as to which is best and which is the cheapest. Circumstances alter cases, and it will pay the farmer and stockman to consult a competent veterinarian. In communities where there is no veterinarian it can at times be arranged with neighbors to all vaccinate at one time and bring in a veterinarian to do the work.