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Black Quarter: A Deadly Disease Every Livestock Farmer Should Know

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Abstract

Black Quarter (BQ), also known as Blackleg, is a highly fatal bacterial disease that mainly affects young cattle and buffaloes. The disease is caused by *Clostridium chauvoei*, a spore-forming bacterium that survives in the soil for many years. Outbreaks are more common during and after the rainy season when animals graze on contaminated pastures. Affected animals often develop sudden fever, lameness, painful swellings with gas formation in the muscles, and may die within 12–48 hours if treatment is delayed. Young cattle between 6 and 24 months of age are more commonly affected, and the disease occurs more frequently in non-vaccinated animals (Ambhore et al., 2018). Early recognition of the disease, prompt veterinary treatment, and annual vaccination before the rainy season are the most effective ways to reduce losses.

Keywords: *Black Quarter, Blackleg, Cattle, Vaccination, Prevention*

Introduction

Black Quarter is responsible for heavy economic losses every year because it causes sudden death in healthy, fast-growing animals. Since the disease progresses very rapidly, farmers often lose valuable animals before they realize the seriousness of the problem (Sultana et al., 2008). Fortunately, Black Quarter is largely preventable through timely vaccination, proper farm management, and early veterinary attention. Therefore, every livestock owner should be aware of this disease, especially before the onset of the rainy season.

What is Black Quarter?

Black Quarter, commonly known as Blackleg, is an acute infectious disease caused by the bacterium *Clostridium chauvoei*. This bacterium forms highly resistant spores that

remain alive in contaminated soil for many years. When grazing animals accidentally ingest these spores while feeding, the spores enter the body and remain inactive in the muscles. Later, muscle injury, bruising, or reduced oxygen supply allows the spores to multiply rapidly and produce powerful toxins that destroy muscle tissue and cause severe poisoning of the body (Sultana et al., 2008). The disease mainly affects cattle and buffaloes but can occasionally occur in sheep and goats. It is characterized by sudden onset, rapid progression, and high mortality if treatment is delayed.

Why is Black Quarter More Common During the Rainy Season?

The rainy season provides favourable conditions for the survival and spread of *Clostridium chauvoei* spores. Moist soil, flooding, and waterlogged grazing fields increase the chance of animals coming into contact with contaminated soil. Heavy rains may also expose buried spores and spread them over grazing areas. Animals grazing on these contaminated pastures are more likely to ingest the spores while feeding (Tyasningsih et al., 2025). Young, healthy, and rapidly growing animals are generally more susceptible because they are more active and have well-developed muscles, which provide favourable conditions for bacterial multiplication after minor muscle injuries.

How Does the Disease Spread?

Unlike many infectious diseases, Black Quarter does not usually spread directly from one animal to another. The disease spreads mainly through contaminated soil that contains dormant spores of *Clostridium chauvoei*. Healthy animals become infected when they swallow these spores while grazing on contaminated pastures or consuming feed mixed with soil. After entering the body, the spores may remain dormant in the muscles for a long time. When muscle damage occurs due to injury, vigorous exercise, injections, transportation, or bruising, the spores become active, multiply rapidly, and release toxins that destroy muscle tissue and cause severe illness (Fig. 1). Because the spores can survive in soil for many years, farms with a previous history of Black Quarter remain at risk unless preventive measures are regularly followed. (Guyassa, C., 2022).

Animals at Greater Risk

Although Black Quarter can affect animals of different ages, it is seen more frequently in young cattle and buffaloes, especially those between 6 months and 2 years of age (Tyasningsih et al., 2025). Well-fed, fast-growing animals grazing on pasture are generally at greater risk than older animals. Disease outbreaks are more common in farms

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with a previous history of Black Quarter, where vaccination is not practiced regularly, and where animals graze on low-lying or flood-prone areas.

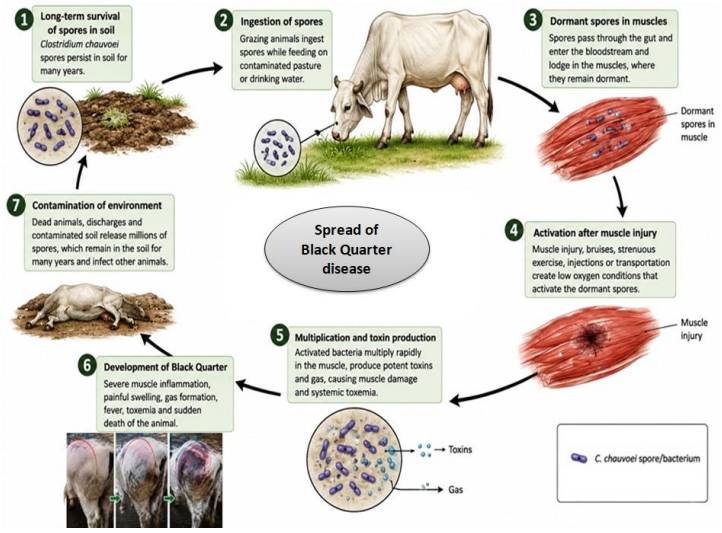
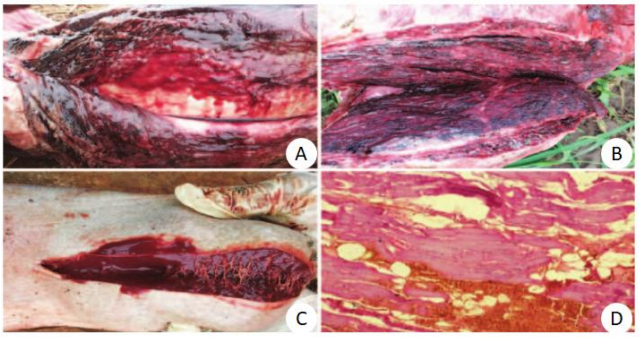


Fig. 1: Spread of Black Quarter/ Black leg disease in livestock farms (Created in Biorender app)

Clinical Signs

Black Quarter develops suddenly, and affected animals may appear healthy only a few hours before showing signs of illness. Early recognition is essential because the disease progresses very rapidly. Farmers should immediately contact a veterinarian if they observe any of the following signs such as Sudden high fever and dullness, Loss of appetite and reluctance to move, Lameness in one leg, Painful swelling over the hip, shoulder, thigh, or neck muscles, Swelling that later becomes soft and produces a crackling sound due to gas formation, Rapid breathing and weakness. Animals may collapse and die within 12–48 hours if treatment is delayed. In animals that die from Black Quarter, the affected muscles appear dark red to black, swollen, and contain gas bubbles (Fig. 2) with a characteristic foul or rancid smell when cut open (Ambhore et al., 2018).



A. Affected muscle mass (on incision): dark red appearance of affected muscles along with exudate containing gas bubbles;
B. Spleen (cut open): Excessive congestion and mushy appearance;
C. Skeletal Muscle: presence of extensive hemorrhages, gas bubbles and coagulative necrosis.

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Fig. 2. Black Quarter affected muscles (Ambhore et al., 2018)

Economic Importance

Black Quarter is one of the most economically important bacterial diseases of cattle because it causes sudden death in healthy and productive animals. Farmers often suffer heavy financial losses due to the death of young animals, loss of future breeding stock, reduced draught power, treatment expenses, and carcass disposal. During outbreaks, several animals may be affected within a short period, resulting in substantial economic damage to the farm. Since the disease progresses rapidly, treatment is often unsuccessful if veterinary care is delayed, making prevention much more economical than treatment (Sultana et al., 2008).

Can Black Quarter Be Treated?

Black Quarter is a rapidly progressing disease, and treatment is successful only when started at a very early stage. Therefore, farmers should never wait for the swelling to become severe before seeking veterinary help. If the disease is suspected, the affected animal should be isolated immediately and examined by a veterinarian. Early administration of appropriate antibiotics, along with anti-inflammatory drugs and supportive therapy, may save some animals. However, once severe muscle damage and toxin production have occurred, the chances of recovery become very low. Animals that survive may have permanent muscle damage, reducing their productivity and market value (Sultana et al., 2008).

Prevention and Control

Since Black Quarter develops suddenly and treatment is often unsuccessful**,** prevention is the best way to protect livestock**.** Farmers can greatly reduce the risk of disease by following a few simple management practices. Annual vaccination is the most effective method for preventing Black Quarter in endemic areas. Animals should be vaccinated before the onset of the rainy season so that they develop protective immunity before exposure to contaminated pastures. Young animals should receive vaccination according to the schedule recommended by the local veterinarian, followed by booster doses whenever necessary. Regular vaccination not only protects individual animals but also reduces disease outbreaks within the herd. Monovalent, Bivalent and Trivalent vaccines are also available for BQ (Table 1). Avoid opening carcasses of animals suspected of Black Quarter; instead, ensure deep burial or safe disposal under veterinary supervision, maintain good pasture hygiene, and avoid grazing in contaminated or waterlogged areas.

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Handle animals carefully to prevent muscle injuries, follow hygienic management practices, and seek immediate veterinary attention for animals showing sudden lameness, painful muscle swelling, or high fever.

Table 1. Black Quarter Vaccines for

Vaccine	Protects Against	Manufacturers	When to Vaccinate
BQ Vaccine	Black Quarter (Blackleg)	Brilliant Bio Pharma Private Limited	From 6 months of age; once every year before the monsoon
HS + BQ Vaccine (Raksha HS + BQ)	Haemorrhagic Septicaemia and Black Quarter	Indian Immunologicals Ltd (IIL)	Once every year before the monsoon
FMD + HS + BQ Vaccine (Raksha-Triovac)	Foot-and-Mouth Disease, Haemorrhagic Septicaemia, and Black Quarter	Indian Immunologicals Ltd (IIL)	As per veterinary advice or state vaccination programme

Conclusion

Black Quarter remains one of the most serious bacterial diseases affecting cattle and buffaloes, particularly in areas where the disease has occurred previously. Because the bacteria can survive in the soil for many years, farmers should not wait until an outbreak occurs before taking preventive measures. Timely vaccination, proper carcass disposal, good grazing management, and early veterinary consultation are the keys to preventing this disease. Creating awareness among livestock owners about the early signs and preventive practices can significantly reduce economic losses and improve the health and productivity of livestock.

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