

Missing cattle this year?



**Don't miss with
Longrange.**

One dose for trusted
annual botulism protection.



zoetis

Botulism.

Botulism is a paralysing disease of cattle. It is a severe and fatal disease caused by a potent nerve toxin produced by the bacteria *Clostridium botulinum*.



Chewing bones

- Type C and D botulinum are the most common cause of botulism in Australia. In severe cases cattle can die in less than 24 hours without signs of illness.
- In northern Australia cattle chew on carcasses and bones – this is the principle source of botulism toxin.
- Most cases of botulism are never observed – cattle simply go missing.



A severe, often fatal, clostridial disease with no specific treatment



Prominent in cattle grazing on land deficient in protein and phosphorus. Bone chewing is common



Commonly associated with poorly vaccinated, poorly protected or unvaccinated cattle

Botulinum outbreaks:



Vaccination with Longrange® provides:

1. Trusted and proven reliability through annual vaccination

Benefits of annual Longrange vaccination:

- Protects animals that have not been mustered the previous year
- Boosts immunity & maternal antibodies of breeders and protects calves
- Is cost-effective by only vaccinating cattle that you are intending to keep
- Takes the confusion out of botulism record keeping management

2. Fastest protection

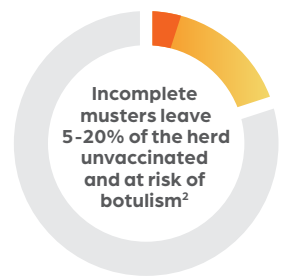
Longrange provides the fastest protection levels, with a **rapid onset of immunity within 28 days**. A single dose of Longrange provides immunity persisting at protective levels for at least 12 months after administration⁴

3. Suitable for use in organic production systems

Genetically modified organisms (GMO) are NOT present in Longrange

4. Fifty (50) times the protection level

A single booster dose annually **provides up to 50 times the necessary level of protection against type C and D botulism⁴**



Don't miss with Longrange®



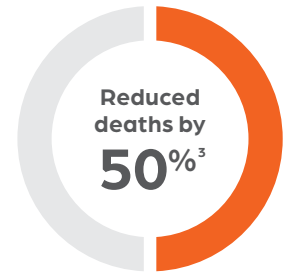
5. Longrange reduced deaths over 3 years

In an MLA funded field trial, annual vaccination of a group of 1,525 replacement heifers with Longrange reduced mortality by 50% over a 3 year period (Table 1)³

Table 1. Benefits of vaccination with Longrange on mortality over a 3 year period

Treatment	Initial cattle number	Rate of deaths*
Not vaccinated – control group	486	14%
Vaccinated – with Longrange	1,039	7%
Total cattle	1,525	

*Heifers were deemed to have died if they missed 3 or more musters.



Worth every cent, every year – Study conclusion

Herd size 1,500 cattle. \$150,750 benefit in surplus cows.
Return of **\$23.30** for every \$1 spent on Longrange.

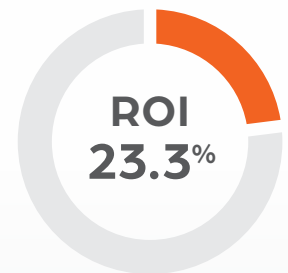


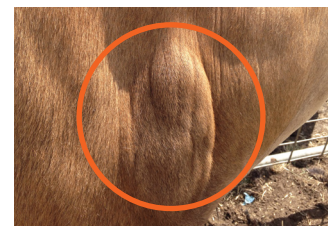
Table 2. Calculated return from botulism vaccination over a 3 year period†

Treatment	Initial cattle number	Mortalities (missing cattle)	Value of dead cattle at \$1,500/head	Cost of vaccination over 3 years a \$1.50/head/year	Cost benefit ratio
Not vaccinated	1,500	14% 210	\$315,000	\$0	
Vaccinated – with Longrange	1,500	7% 105	\$157,500	\$6,750	23.3
Longrange vaccination – Value of reduced cattle losses			\$157,500 - \$6,750 = \$150,750		
			This indicated a cost benefit ratio of 23.3 representing a benefit of \$23.30 for each \$1 spent on vaccination.		

†Assuming the 7% reduction in mortalities can all be attributed to the use of the botulism vaccine.

6. Less carcass trim and site reactions

Longrange has a unique water based formulation. Alternative vaccines for botulism use an oil based formulation that increases the risk of site reactions, lumps and carcass trim. A study identified that cattle vaccinated with SingVac® had over 3 times as many large vaccination site reactions as cattle vaccinated with Longrange⁵



The risk of oil based formulations.

7. Simple dosing program

The unique formulation is easy to administer with no need for special applicators and provides better safety for workers.



No need for initial priming dose and booster.

8. Efficient integration into your management program to optimise beef production

For optimised reproductive performance use Longrange annually in combination with Vibrovax® to prevent transmission of vibriosis, Pestigard® to reduce reproductive losses due to pestivirus and Ultravac® 7in1 to prevent shedding of leptospirae and protect against key clostridial diseases.





Don't miss with Longrange®

Key benefits	Longrange®	SingVac®#
Optimal immunity	 Demonstrated to reduce death due to botulism using field trial data Effectiveness based on Australian field trial data ³	 Not demonstrated to reduce death due to botulism using field trial data Effectiveness only demonstrated by experimental challenge in selected animals and antibody titres (SingVac 1 year/3 year challenge 2001) ⁶
		 Young weaners may not be mature enough to effectively respond to a 3 year vaccination Protection status will be unknown ¹⁰
Demonstrated to lower mortality	 High level of protective immunity — provides up to fifty (50) times the necessary protection levels using an assay documented to be associated with protection against botulism ⁴	 Level of immunity determined with an assay not validated for association with protection against botulism ⁷⁻⁹
		 Singvac 3 year label “In non-endemic areas where infection is rare, a 36 month booster interval may not provide optimal protection and annual vaccination is recommended”. How can a producer know what protection is provided from year to year and whether to vaccinate again or not?
Less site reactions	 Unique water based formulation — less risk of site reactions, injection lumps and carcase trim	 Oil based vaccine — increases the risk of site reactions and carcase trim ⁵
	 Easy application	 Over 3 times as many large site reactions ⁵
Fastest protection	 Fastest protection — within 28 days ⁴	 35 day onset of immunity claim
Optimal immunity	 Annual booster doses ensure optimal immunity is achieved	 3 year muster programs can miss animals — no vaccination means no protection

#Comparison refers to SingVac 1 & 3 year botulinum product unless stated otherwise.

Longrange. Made in Australia – the optimum vaccination program for northern herds

Botulism vaccination	Weaners	Heifers, cows, bulls and growing steers
 Longrange®	One shot at first muster	1st dose for previously unvaccinated cattle Annual booster every year
 Ultravac® Botulinum		Alternative annual booster to Longrange

Botulism vaccination may be integrated into your annual vaccination program.

For more information talk to your Zoetis Cattle Representative, call **1800 963 847** or visit **zoetis.com.au**

References: 1. Fitzpatrick S. Agnote K29. Botulism Poisoning in Cattle in the Northern Territory, September 2006. 2. McCosker T.H, and Eggington A.R Cattle Mustering Efficiency Using Helicopters in a Monsoonal Savanna Woodland. *Aust Ranger J.* 1986; 8(2): 91-96. 3. Smith PC et al., Industry initiatives to improve young breeder performance in the Pilbara and Kimberley of W.A, NBP.345, Meat and Livestock Australia, North Sydney, 2010, 28-29. 4. Zoetis Data on File. 5. Zoetis Data on File. 6. Lehrbach PR and Robinson SR, Comparative immunogenicity of single doses of four vaccines against botulism in cattle *AVA Proceedings* Pg 145-148 (2001). 7. Jansen et al., *Onderstepoort J. Vet Res.* 43 (4), 165-174 (1976). 8. Cameron et al., *ClostPath: Rio Rica, Arizona, USA – January 11-14, 1995.* 9. Elhay M. Zoetis Data on File. Aug 2003. 10. Zoetis Data on File.