

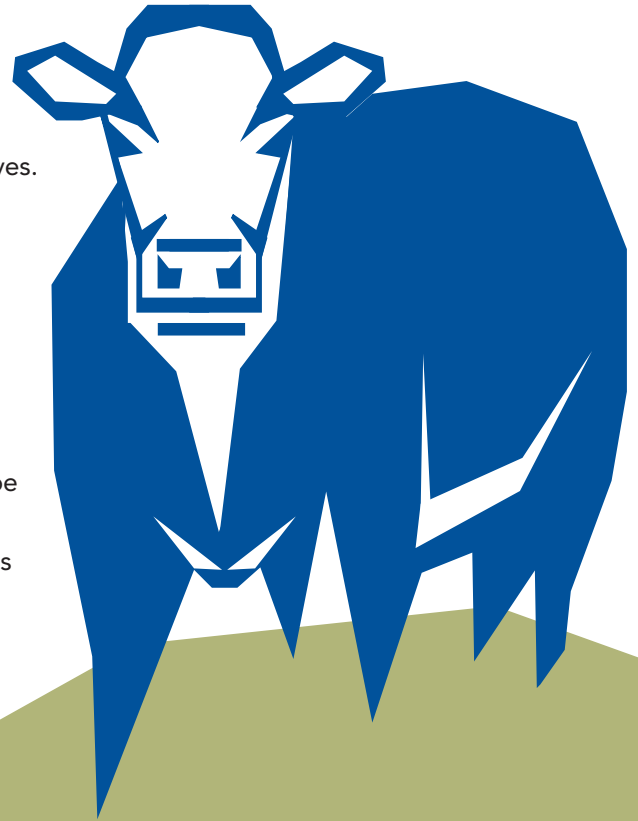
# ARSENAL® 4.1 IS THE ONE!

## The challenge:

- Bovine viral diarrhea (BVD) virus causes respiratory disease.
- BVD also causes immunosuppression, setting up calves for infection from bacterial killers such as *Mannheimia (Pasteurella) haemolytica*.
- BVD reduces productivity and limits profits.
- Most respiratory outbreaks involving BVD are caused by the **noncytopathic (NCP) BVD strains**.
- NCP is always the cause of persistently infected (PI) calves.

## The response:

- Arsenal 4.1 helps prevent disease caused by BVD Types 1 and 2, IBR, PI<sub>3</sub> and BRSV.
- Arsenal 4.1 responds to today's emerging BVD challenge – NCP BVD.
- Arsenal 4.1 protects against clinical signs of BRSV in one SubQ dose.
- Arsenal 4.1 provided protection against a tough BVD Type 2 challenge that killed 25 percent of the control calves.
- Arsenal 4.1 was proven in field trials to be safe in calves as young as two weeks of age.
- Arsenal 4.1 is smooth – it won't cause sweats or set back animals.



## Arsenal 4.1 withstands “killer” BVD Type 2 challenge

BVD Type 2 post-challenge results

Number of Animals/Total					
	Temp (≥103.5°F)	Clinical Signs	Mortality	Leukopenia (Drop in white blood cells)	Virus Shedding
<b>Vaccinate</b>	0/20	0/20	0/20	1/20	0/20
<b>Control</b>	9/12	12/12	3/12	10/12	7/12
<b>P Value*</b>	<0.0001	<0.0001	0.0444	<0.0001	0.0002

\* A p value ≤0.05 is considered statistically significant.

### Protocol:

- 20 vaccinates and 12 non-vaccinated controls
- 750- to 1,000-pound yearlings
- 4-mL dose of virulent BVD Type 2 USDA-approved challenge administered intranasally at 21 days post-vaccination
- Yearlings observed two days prior through 14 days post-challenge

## Calves did not develop fevers within 72 hours after vaccination with Arsenal 4.1

A study involving steers and heifers – ranging in age from six to eight months and weighing about 500 pounds each – showed no significant difference in body temperature between vaccinated and control animals.

Average temperature response after vaccination with Arsenal 4.1 – Mean rectal temperature (°F)					
	Number of Animals	Pre-Vaccination	Hours Post-Vaccination		
			24	48	72
Controls (no vaccination)	10	101.4	101.2	101.0	101.2
Arsenal 4.1 vaccination	30	101.7	101.5	101.2	101.3



### Hit the zone:

- Administer Arsenal 4.1 injections in the neck, in the new tightened zone
- Administer SubQ only
- Use the tented technique and 1/2-inch or 3/4-inch 18-gauge needles to assure a true SubQ administration

## Arsenal 4.1 usage in beef cattle

	Arsenal 4.1
Branding/turnout	X
Weaning/receiving	X
*Pre-breeding	X

\* Open heifers and cows should be vaccinated 30 days prior to the start of breeding.



## Compare – Arsenal 4.1 stands alone:

	Arsenal® 4.1	Bovi-Shield® GOLD™ 5	Pyramid® 5	Titanium® 5
Type 1 and Type 2 protection	X	X	X	X
Contains NCP BVD	X			
One dose BRSV	X		X	
SubQ only	X			



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