



## Univax®-Plus: Broad IBD Protection Results in Superior Field Performance

**T**he benefits of broad-spectrum immunity against infectious bursal disease (IBD) virus are demonstrated by the field performance results at five different Brazilian companies that compared Univax®-Plus (Schering-Plough Animal Health Corp.) to their standard IBD vaccination program. Univax-Plus has demonstrated protection against a wide variety of US IBD field isolates in studies conducted by Auburn University researcher Dr. Joseph Giambrone. The field trials conducted in Brazil confirmed the advantages of Univax-Plus in the field.

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### Study Design

Two of the companies that conducted com-

parative trials collected bursas for PCR-RFLP analysis of the IBD virus present on their farms. The PCR results indicated that the Brazilian molecular group 15 variant was present on 50% of the farms at Company 1. The remainder of the farms at Company 1 and all of the farms from Company 2 yielded G3 classic IBD. No PCR data were available for the other three companies.

Companies 1, 2, 3 and 4 vaccinated against IBD on days 8 and 16. Company 5 vaccinated only once, at day 14. Only Company 1 vaccinated against IBD at the hatchery (intermediate strain vaccine). The vaccination protocols are summarized in Table 1.

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### Results

Each company conducting a Univax-Plus field trial measured and reported different parameters, according to that company's preferred method of evaluating an IBD program. Results are summarized below.

#### Bursal Size

Companies 1, 2 and 3 measured gross bursal size (Figure 1). Each company selected samples at different ages but, in all cases, Univax-Plus vaccinates demonstrated larger bursas than the controls.

#### Flock Health

Company 1 reported that 100% of flocks vaccinated with their control program (Bursine Plus + 228E) required medication for airsacculitis. Only one flock (14%) vaccinated with Univax-Plus required treatment.

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## Key Points

- Under field conditions in Brazil, birds vaccinated against IBD with Univax®-Plus demonstrated superior bursal health, livability, condemnation and flock performance compared to birds receiving control vaccination programs.
- Performance improvement was progressive with sequential flock vaccination at Company 1 in the face of a Brazilian isolate challenge (PCR-RFLP molecular group 15).

Table 1

Company	No. Birds/ Treatment	Control IBD Program		Univax-Plus Trial	
		Day 8	Day 16	Day 8	Day 16
1	100,000	Bursine®-Plus	228-E	Univax-Plus	Univax-Plus
2	100,000	Bursine-2	228-E (day 15)	Univax-Plus	Univax-Plus (day 15)
3	100,000	Bursine-2	228-E	Univax-Plus	Univax-Plus
4	77,500 Cont 126,500 Test	Bursine-2	Bursine-Plus	Univax-Plus	Univax-Plus
			Day 14		Day 14
5	100,000		W2512 Cevac		Univax-Plus

Companies 2 and 3 reported significantly reduced condemnations in flocks vaccinated with Univax-Plus (Figure 2).

Companies 3 and 5 also reported reduced mortality in Univax-Plus-vaccinated flocks, as compared to their control programs (See Figure 3).

Flock Performance

Companies 3, 4 and 5 reported that flocks

vaccinated with Univax-Plus grew to heavier weights than did the flocks vaccinated with their control programs (Figure 4).

Feed conversion in the same flocks were lower in the Univax-Plus vaccinates compared to flocks vaccinated with the control programs (Figure 5).

Companies 4 and 5 also reported higher performance indices for their Univax-Plus flocks (Figure 6).

Figure 1

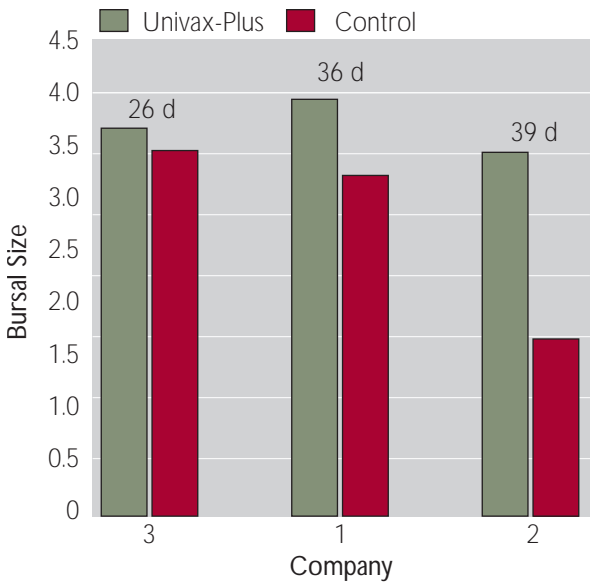


Figure 1  
Univax-Plus vs. Control: Gross Bursal Size

Figure 2  
Univax-Plus vs. Control: Condemnations

Figure 2

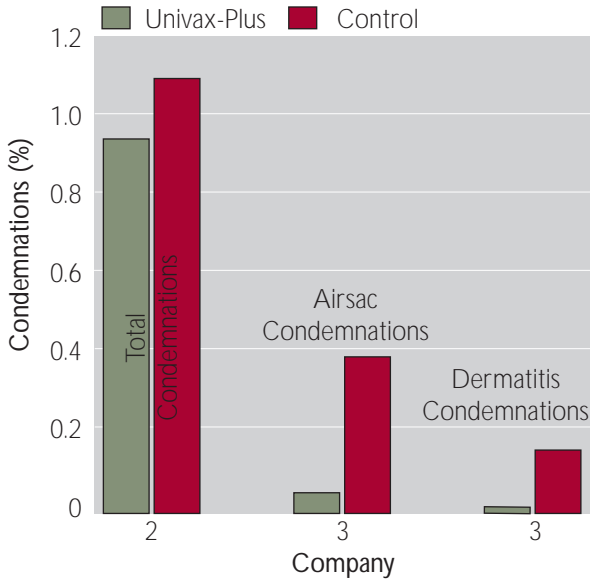


Figure 3

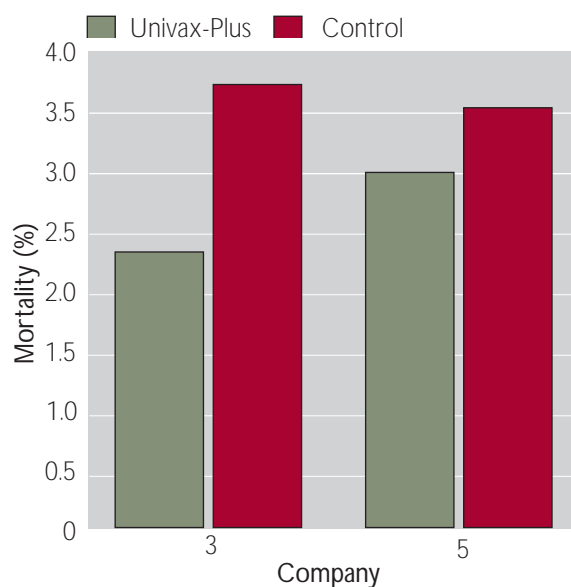


Figure 4

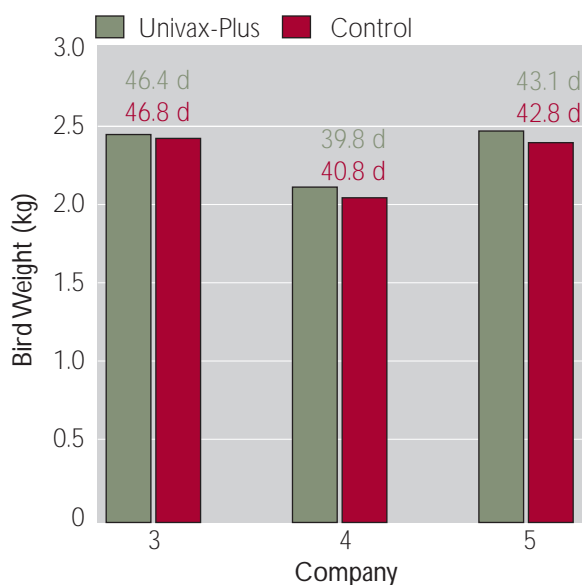


Figure 3

Univax-Plus vs.  
Controls: Mortality

Figure 4

Univax-Plus vs.  
Controls: Bird Weight

## Progressive Improvement With Sequential Vaccination

Company 1 continued the experiment, vaccinating the Univax-Plus test houses for three to four consecutive production cycles. PCR results demonstrated that at least 50% of the IBD isolates from this company were G15 variant IBD at the beginning of the vaccination trial. In each case, mortality and condemnations demonstrated progressive improvement with each vaccination cycle (Figures 7a through 7d).

## Conclusion and Discussion

Under field conditions in Brazil, birds vaccinated with Univax-Plus demonstrated superior bursal health, livability, condemnation and flock performance compared to birds that received control vaccination programs. Performance improvement was progressive with sequential flock vaccination at Company 1 in the face of a G15 IBD variant challenge.

Univax-Plus is a very broad-spectrum intermediate IBD vaccine comprised of two

plaque-purified classic strain IBD isolates. Despite a general classification as “classic strain,” the two isolates fall into different molecular groups when tested via PCR-RFLP using restriction enzyme BstNI. The two strains provide synergistic protection against some IBD field isolates, and independently protect against a variety of others.

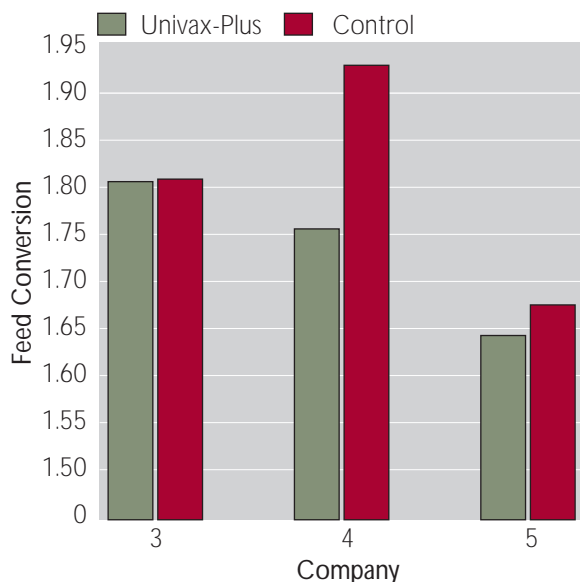
The superior performance of Univax-Plus compared to the “intermediate-plus” or stronger vaccines used in the control vaccination programs indicates that broad antigenic protection from an intermediate vaccine can outperform stronger vaccines with a more limited spectrum of immunity, especially in the face of a variant IBD challenge.

Sequential vaccination for at least three flocks may be required to observe the maximum efficacy of an IBD vaccination program. Improved performance becomes evident as the vaccine reduces multiplication and shedding of the wild virus, while seeding the premises over time with milder, vaccine strain virus.

**Figure 5**

**Figure 5**

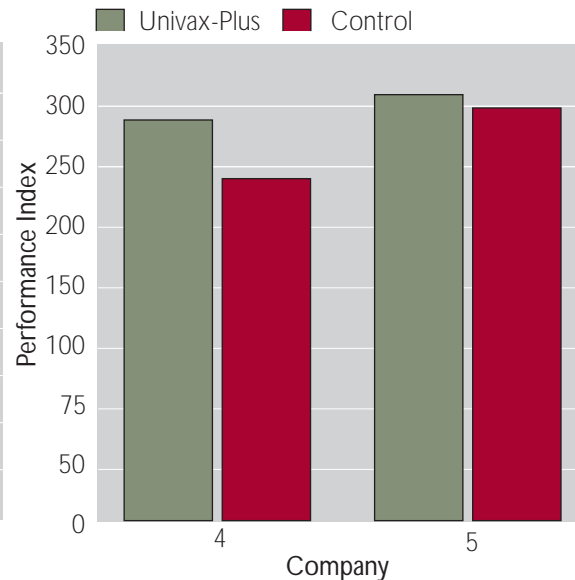
**Univax-Plus vs.  
Control: Feed  
Conversion**



**Figure 6**

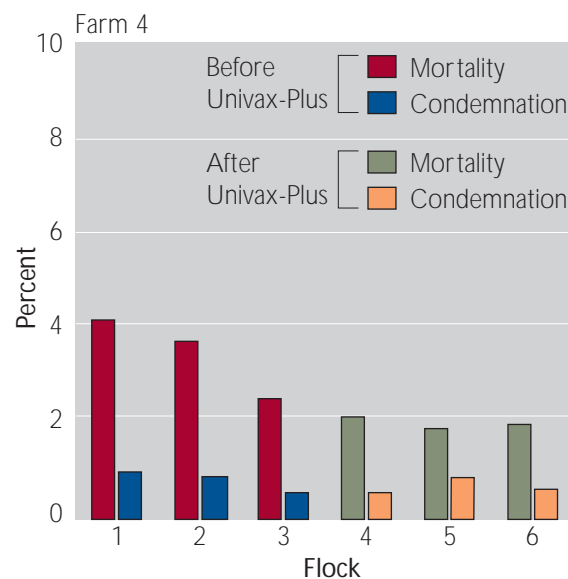
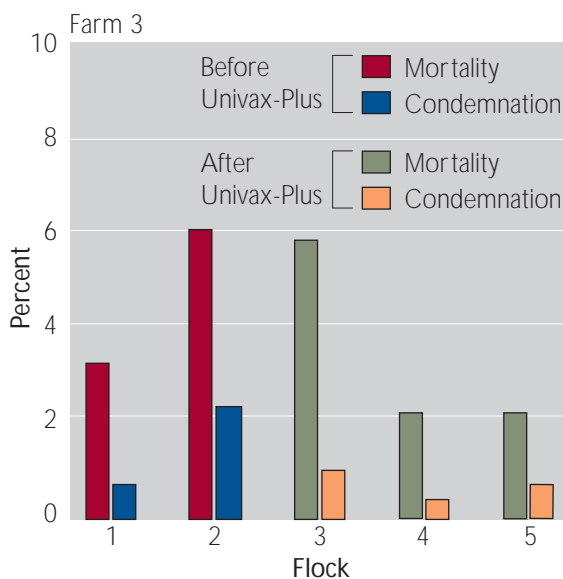
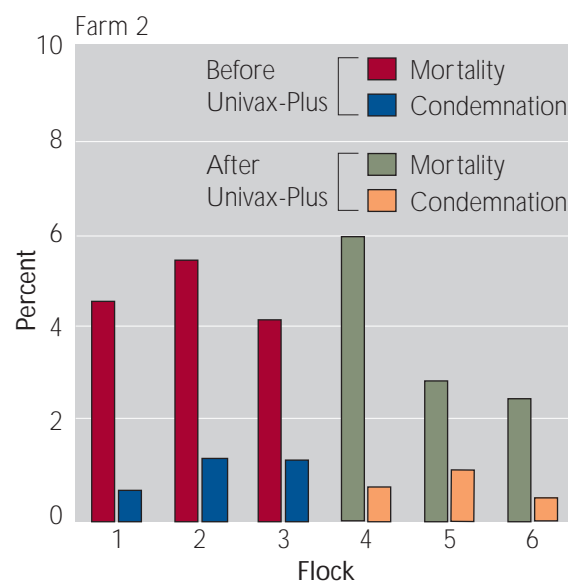
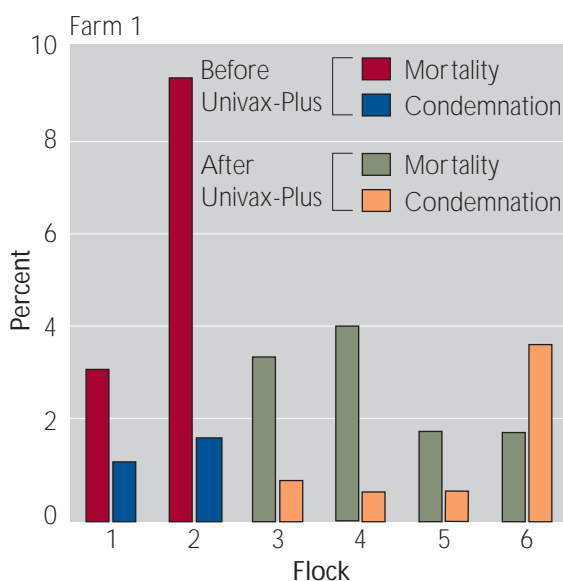
**Figure 6**

**Univax-Plus vs.  
Control: Performance  
Index**



**Figure 7**

**Progressive  
Improvement:  
Sequential Flocks  
Vaccinated with  
Univax-Plus**



Univax is a registered trademark of Schering-Plough Animal Health Corporation. Bursine is a registered trademark of Fort Dodge Animal Health.