

Efficiency Test of Huma Gro®

Vitol®, Breakout®, and Golden Gro™ on Black Bean

Research Report

Research by Jemmett Consulting and Research Farm, Parma, Idaho

Objective

This study evaluated the effects of Huma Gro® Vitol®, Breakout®, and Golden Gro™ on black bean biomass, root length, and percent nodulation.

Materials and Methods

The study was located in Idaho on plots (7.33 ft x 50 ft) planted with the black bean Zenith. It was a randomized complete block design (RCBD) with 4 replicates per treatment and a non-treated control. The treatments included three programs: (a) program #1 Vitol® alone, (b) program #2 Breakout® alone, and (c) program #3—a combination of Vitol®, Breakout®, and Golden Gro™ as indicated in Table 1. The collected data from the center two rows included the black bean biomass, root length, and percent nodulation.

Table 1. Huma Gro Products

Program #	Products	Rate (qt/ac)	Application Method	Application Placement
1	Vitol®	1	Spray	Foliar Broadcast
2	Breakout®	2	Spray	Foliar Broadcast
3	Vitol® Breakout® Golden Gro™	1 2 1	Spray Spray Spray	Foliar Broadcast Foliar Broadcast Foliar Broadcast



Results

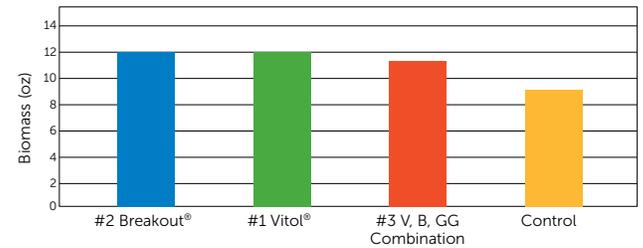


Figure 1. Product Effect on Biomass

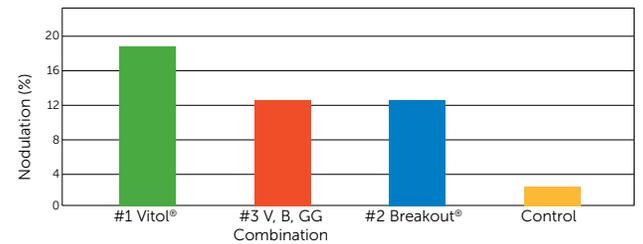


Figure 2. Product Effect on Nodulation

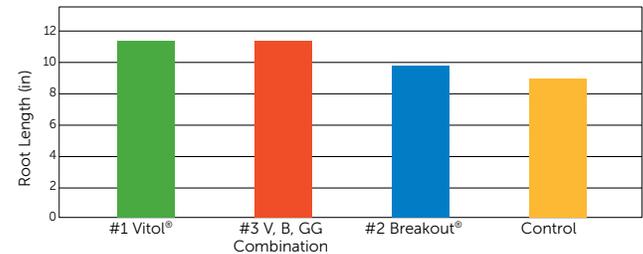


Figure 3. Product Effect on Root Length

Conclusions

The three programs of Huma Gro® products (Vitol®, Breakout®, Vitol®/Breakout®/Golden Gro™) had higher efficiency than the control for bean biomass, root length, and root nodulation. Vitol alone was the highest contributor to root nodulation when compared with the other two programs. It is noted that the growers who ran this experiment didn't apply Breakout® and Vitol® as soil broadcast, a step recommended by Huma Gro; therefore, we speculate a higher result would have occurred if the recommendations had been followed for time and method of application.