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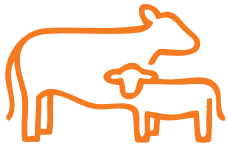

Summary of Five Phase IIIB SYNOVEX® ONE-GRASS Studies

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Summary

- Five phase IIIB studies[1-5] were conducted in pastured steers and heifers to compare the growth performance responses of SYNOVEX® ONE-GRASS (SYNOVEX ONE) implants to Revalor®-G or Ralgro® implants.
- Beef steers (n=116/treatment) and heifers (n=86/treatment) in Wyoming received assigned implants and growth on pasture was measured for 140 days. Beef steers (n=117/treatment) and heifers (n=86/treatment) in Wisconsin received assigned implants and growth on pasture was measured for 139 days. Beef steers (n=115/treatment) in Arkansas received assigned implants and growth on pasture was measured for 180 days.
- Neither body weight nor average daily gain differed among treatments for the two 140-day studies conducted in Wyoming with heifers and steers.
- In the Wisconsin studies, intermediate but not final body weight and average daily gain (ADG) were lower for SYNOVEX ONE heifers than Revalor-G but did not differ from Ralgro heifers. In steers, final body weight and ADG for 139 days were increased by SYNOVEX ONE compared with both Revalor-G and Ralgro.
- In the Arkansas study, intermediate body weights for SYNOVEX ONE were lower than for both Revalor-G and Ralgro, and ADG for SYNOVEX ONE was lower than for Revalor-G only. ADG during the second half of the study was higher for SYNOVEX ONE than both Revalor-G and Ralgro, and final body weight and 180-day ADG were higher for SYNOVEX ONE than for Ralgro but did not differ from Revalor-G.
- Although data from 2 of the 5 studies showed that SYNOVEX ONE was statistically superior to Revalor-G and Ralgro, data from the other 3 studies did not support this conclusion.
- Arithmetic means calculated with equal weight given to each of the 2 heifer studies showed SYNOVEX ONE increased ADG 4.9% (1.93 vs 1.84) compared to Ralgro with essentially no difference between SYNOVEX ONE and Revalor-G (1.93 vs 1.94). Heifers were on study an average of 140 days. Arithmetic means across the 3 studies utilizing steers showed SYNOVEX ONE increased ADG 5.4% (2.15 vs 2.04) compared to Ralgro and 1.9% (2.15 vs 2.11) compared to Revalor-G. Steers were on study an average of 153 days.

Experiment Design

Study designs are summarized in Table 1.

Table 1 – Summary of the study variables for 5 pasture studies with stocker cattle implanted with Revalor-G, Ralgro, or SYNOVEX ONE.

	Wyoming-H	Wisconsin-H	Wyoming-S	Wisconsin-S	Arkansas-S
Location	Wyoming	Wisconsin	Wyoming	Wisconsin	Arkansas
Investigator	Hunsaker	Smith	Hunsaker	Smith	Powell
Gender	Heifers	Heifers	Steers	Steers	Steers
Duration	140 days	139 days	140 days	139 days	180 days
Animals/treatment (by design)	86	86	116	117	115
Initial weight (lb)	520	560	537	577	554
Treatment period	Jun – Oct 2010	Apr – Sep 2010	Jun – Oct 2010	Apr – Sep 2010	Oct 2010 – Apr 2011
Weigh days	-1, 0, 91, 139, 140	-2, 0, 69, 138, 139	-1, 0, 91, 139, 140	-2, 0, 79, 138, 139	-1, 0, 90, 180, 181
Forages	Native grasses improved with irrigated alfalfa & brome grass	Orchard, blue, & quack grasses with legumes of red & white clovers & alfalfa	Native grasses improved with irrigated alfalfa & brome grass	Orchard, blue, & quack grasses with legumes of red & white clovers & alfalfa	Bermuda grass & fescue over seeded with wheat grass, supplemented with protein & alfalfa hay
Animals removed					
Revalor-G	---	2	5	2	2
Ralgro	1	2	5	3	1
SYNOVEX ONE	1	3	2	1	3

Results

Body weight data are summarized in Table 2 and Figure 1. Average daily gains are summarized in Table 3 and Figure 2.

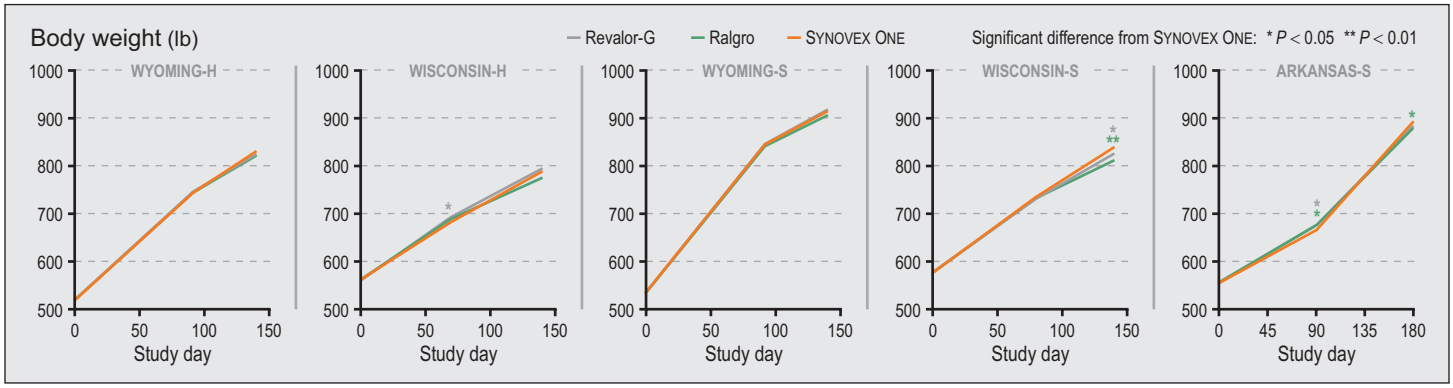

Figure 1 – Body weight (lb) of heifers and steers by study.

Table 2 – Summary of body weights for 5 pasture studies with stocker cattle implanted with Revalor-G, Ralgro or Synovex-LA, mean ± SEM.

Study	Time Point /Interval	Treatment Group			*P* value	
		Revalor-G	Ralgro	SYNOVEX ONE	SYNOVEX ONE vs Revalor-G	SYNOVEX ONE vs Ralgro
Wyoming-H	Initial	520 ± 6.2	520 ± 6.2	519 ± 6.2	0.5702	0.3472
	Day 91	745 ± 7.4	744 ± 7.4	742 ± 7.4	0.6175	0.7779
	Final	824 ± 7.7	820 ± 7.7	830 ± 7.7	0.3532	0.1290
Wisconsin-H	Initial	559 ± 7.7	561 ± 7.7	561 ± 7.7	0.1229	0.7227
	Day 69	691 ± 8.2	687 ± 9.0	680 ± 8.6	**0.0261**	0.2776
	Final	792 ± 8.7	772 ± 9.4	785 ± 9.3	0.3075	0.1072
Wyoming-S	Initial	538 ± 6.1	537 ± 6.2	537 ± 6.1	0.2290	0.6528
	Day 91	843 ± 7.6	840 ± 7.3	844 ± 7.4	0.8475	0.4494
	Final	918 ± 8.2	906 ± 8.2	914 ± 8.2	0.5628	0.2165
Wisconsin-S	Initial	578 ± 5.4	577 ± 5.3	577 ± 5.3	0.4306	0.9645
	Day 79	730 ± 6.0	731 ± 6.0	734 ± 6.1	0.3205	0.4109
	Final	823 ± 6.7	809 ± 6.5	836 ± 6.5	**0.0258**	**< 0.0001**
Arkansas-S	Initial	554 ± 4.2	555 ± 4.2	554 ± 4.2	0.4826	0.0639
	Day 90	676 ± 5.3	675 ± 5.3	665 ± 5.3	**0.0297**	**0.0382**
	Final	883 ± 6.2	879 ± 6.2	893 ± 6.2	0.1103	**0.0286**

Figure 2 – Average daily gain (lb/day) of heifers and steers by study.

Table 3 – Summary of average daily gains for 5 pasture studies with stocker cattle implanted with Revalor-G, Ralgro, or SYNOVEX ONE, mean ± SEM.

Study No.	Time	Treatment Group			*P* value	
		Revalor-G	Ralgro	SYNOVEX ONE	SYNOVEX ONE vs Revalor-G	SYNOVEX ONE vs Ralgro
Wyoming-H	Initial to Day 91	2.48 ± 0.05	2.46 ± 0.05	2.46 ± 0.05	0.7144	0.9560
	Initial to Final	2.19 ± 0.03	2.16 ± 0.03	2.24 ± 0.03	0.2788	0.0764
Wisconsin-H	Initial to Day 69	1.92 ± 0.05	1.82 ± 0.07	1.72 ± 0.05	**0.0028**	0.1958
	Initial to Final	1.68 ± 0.03	1.52 ± 0.04	1.61 ± 0.04	0.1384	0.1131
Wyoming-S	Initial to Day 91	3.35 ± 0.05	3.33 ± 0.04	3.38 ± 0.05	0.7148	0.5124
	Initial to Final	2.73 ± 0.04	2.66 ± 0.03	2.71 ± 0.04	0.6653	0.2510
Wisconsin-S	Initial to Day 79	1.92 ± 0.04	1.94 ± 0.04	1.99 ± 0.04	0.1906	0.3981
	Initial to Final	1.76 ± 0.03	1.67 ± 0.03	1.86 ± 0.03	**0.0137**	**< 0.0001**
Arkansas-S	Initial to Day 90	1.35 ± 0.04	1.33 ± 0.04	1.24 ± 0.04	**0.0385**	0.0717
	Day 90 to Final	2.30 ± 0.04	2.27 ± 0.04	2.53 ± 0.04	**< 0.0001**	**< 0.0001**
	Initial to Final	1.83 ± 0.03	1.80 ± 0.03	1.89 ± 0.03	0.0959	**0.0176**

Table 4 – Summary of the study variables for 5 pasture studies with stocker cattle implanted with Revalor-G, Ralgro or SYNOVEX ONE.

	Wyoming-H	Wisconsin-H	Wyoming-S	Wisconsin-S	Arkansas-S
Location	Wyoming	Wisconsin	Wyoming	Wisconsin	Arkansas
Gender	Heifers	Heifers	Steers	Steers	Steers
Duration	140 days	139 days	140 days	139 days	180 days
Animals/treatment (by design)	86	86	116	117	115
Initial weight (lb)	520	560	537	577	554
Final weight (lb)					
Revalor-G	824 ± 7.7	792 ± 8.7	918 ± 8.2	823 ± 6.7	883 ± 6.2
Ralgro	820 ± 7.7	772 ± 9.4	906 ± 8.2	809 ± 6.5	879 ± 6.2
SYNOVEX ONE	830 ± 7.7	785 ± 9.3	914 ± 8.2	836 ± 6.5	893 ± 6.2
P values for final weight					
SYNOVEX ONE vs Revalor-G	0.3532	0.3075	0.5628	**0.0258**	0.1103
SYNOVEX ONE vs Ralgro	0.1290	0.1072	0.2165	**< 0.0001**	**0.0286**

Do not use SYNOVEX products in veal calves. Refer to label for complete directions for use, precautions, and warnings.

References

1. Data on file, Study No. 1333R-60-10-787, Zoetis Inc.
2. Data on file, Study No. 1333R-60-10-788, Zoetis Inc.
3. Data on file, Study No. 1333R-60-10-789, Zoetis Inc.
4. Data on file, Study No. 1333R-60-10-790, Zoetis Inc.
5. Data on file, Study No. 1333R-60-10-816, Zoetis Inc.