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COMPARING EDUCATIONAL PROGRAMS[16] TO IMPROVE BEEF PRODUCTION

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Abstract

This paper compares current Extension educational program efforts to improve the economic performance of the beef enterprise in Kentucky with the Sustainable Grazing System that has been developed and successfully applied to improve the performance of the beef industry in the High Rainfall Zone of Southern Australia. This comparison investigates problems addressed by each educational effort as well as different methods used by the programs to help producers improve the performance of the beef business. This comparison identifies potential difficulties faced by the Kentucky program that have been successfully addressed by the Sustainable Grazing Systems program in Southern Australia.

Introduction

Beef and tobacco have been a traditional enterprise combination in Kentucky. Recent developments in the tobacco industry have resulted in changes that have and will continue to reduce the demand for tobacco being produced in Kentucky. In response to this change many Kentucky farmers are looking to expand their beef cow-calf enterprise to replace the upcoming expected loss of income from the tobacco enterprise. The Kentucky beef cow-calf enterprise has historically been profitability challenged! Efforts are currently being undertaken to address this situation in Kentucky.

The Sustainable Grazing System project recently conducted in the High Rainfall Zone of Southern Australia has been a huge success. It has achieved it's "triple bottom line" objectives of building financial, social and natural resource capital to help producers be more profitable and sustainable in the future.

The objective of this paper is to compare and contrast the approaches to the problem of educating beef producers being used in Kentucky and that used by Australia's Sustainable Grazing System project. This comparison should help to improve the efforts currently being undertaken in Kentucky.

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Kentucky Extension Educational Programs to Improve Beef Production and Profitability

The University of Kentucky Cooperative Extension Service has numerous programs aimed at helping to improve the profitability and thereby the sustainability of beef producers. All of these programs are quite traditional Extension educational programs. They involve Extension subject matter Specialists, County Extension Agents, Administrators, and producers in the design, development, and delivery of the educational programs. The major difference between current programs and those that have gone before them is the extent to which grant and Special Project Funds have been used to support these new educational efforts. New Extension educational programs are becoming more reliant on external "soft" funds than has ever been the situation in the past.

Examples of new educational programs directed at the plight of the Kentucky beef producer are: the Master Cattleman Program, the Cow College, the Beef Quality Assurance Program, the Grazing School, the Integrated Resource Management program, the Five State Beef Initiative, the Retained Ownership Program, the Feedlot and Carcass Tests program, and the Allied Inputs and Marketing program. As indicated by the names of these programs the greatest emphasis seems to be on the performance of the beef animal and methods of improving that performance. There is some emphasis on the forage base of the program, but it is certainly emphasised to a lesser extent than is the beef animal. The same can be said of the economics of the beef business. Marketing and adding product value to the animals has been addressed to some extent. However, the greatest emphasis involves the beef animal and how it can impact the beef business.

Australia's Sustainable Grazing System Project

The Sustainable Grazing Systems (SGS) Project's title indicates the first major difference between the Australian producer educational program and the educational efforts currently being undertaken in Kentucky. The SGS project places much greater emphasis on the forage base of the beef business and the successful management of that forage base to provide a productive environment for the beef animal. It essentially assumes the animal and its nutritional requirements and then proceeds to try to provide or meet these requirements in the most efficient and effective manner that will achieve the objectives of the program.

This is almost the exact opposite of the approach taken In Kentucky where the forage base is assumed and then most efforts are made at improving the animal. The major difference between the two approaches may be the result of those educational efforts that have gone before the current projects. In Kentucky we have had a great deal of emphasis on the establishment of a forage base consisting primarily of fescue. Given that the forage base is in place then there may be a need to use the best animals possible to consume that forage.

The SGS program seems to build on the past and ongoing success of the **Prograze** program with an emphasis on the efficient and effective management of the forage base for use by the animals being grazed on it. The other educational program that is well established in Australia is the **Breedplan** program directed at the establishment and use of the most effective breeding animals in the beef business. The combination of the existing **Prograze** and **Breedplan** programs may very well create a situation where there is little need to be concerned about the grazing animal! The exclusive emphasis on the quality and quantity of forage available may be the correct emphasis to be placed by the program.

Another quality that differentiates the SGS program from the Kentucky educational programs is the extent to which producers were or are involved in the programs. The University of Kentucky Cooperative Extension Service educational programs involve

producers in the identification of problems to be addressed and in advisory capacities. However, it does not involve producers in the delivery of educational programs to any large extent. The SGS program seemed to make extensive use of producers to deliver the educational programs. Producers were involved in the problem definition, design and delivery stages of the SGS project. In fact, reading the SGS reports indicates that the producer involvement in the program was a major reason for the success of the program!

Producers were responsible for involving the farms and paddocks in the SGS program and making them available for the highly successful ***National FarmWalks*** that were an integral part of the overall educational success of the program. These ***FarmWalks*** appear to be quite similar to Field Days conducted in Kentucky. However, the SGS ***FarmWalk****s* were on a much wider scale and involved many more producers than those normally part of such an effort in Kentucky. They seemed to be the showcase for the SGS program and acted to highlight program achievements. Further, since they were conducted on a farm basis rather than on a University or governmental research experiment site, they seemed to be more believable, reputable, and accepted than results from small plot experiments.

There is little doubt that the SGS program has been extremely successful in reaching the beef producers of the High Rainfall Zone of Southern Australia. Some 60% of producers in the area were aware of the program and 42% had been involved in the program. Some 8,000 participating producers had made changes to their grazing practices. These producers expected 78% of these changes to yield financial benefits and 81% expected sustainability benefits from the changes they have made. These are truly astounding results for such an educational program. The SGS has been extremely effective in not only reaching the intended audience, but in moving them to action to improve their beef business!

Comparing and Contrasting the Educational Programs

Producer Involvement in Programs

The Kentucky and SGS educational programs seem to be quite similar in their approach to the general problem of low profitability in the beef business. They both seem to involve the same basic elements of producers and subject matter needed to improve the situation. However, the similarity may essentially stop there!

The Kentucky program involved producers in the problem definition stage of the project. However, producers have not been involved to any great extent in the educational process beyond this point. They have not been intimately involved in the delivery of the educational program. Whereas, producers have been heavily involved in the SGS program at almost all stages. They were hugely responsible for the overall success of the SGS program.

Program Subject Matter Emphasis

The emphasis of the SGS program involved grazing management of the forage program. The Kentucky program's emphasis has involved the quality of the animal to a great extent. The forage base has been assumed to be available to a much greater extent in the Kentucky program than it has with the SGS program. Of course, there may be vastly different problems that need to be addressed in the two locations. However, the existence of the **Breedplan** program may result in a situation in which Australian producers need not be that concerned about improvement of the animal in the beef business.

The SGS program also addressed numerous natural resource problems that are not necessarily problems in Kentucky. These problems included soil salinity, water management, and the general maintenance of the natural resource base used for beef production. Therefore, the program had multiple objectives and was still able to maintain momentum and achieve a quite successful outcome.

The major problem facing the multiple beef producer educational programs in Kentucky may result from the implied assumption that the forage base is adequate and sufficient to support the beef industry. The Kentucky forage base for beef production consists primarily of fescue of the ***Kentucky 31*** variety. The well documented problems with the fescue endophyte (Acremonium coenophialum) that is associated with this forage and results in beef animal sickness and reduced performance calls into question the ability of it to support the beef industry in the Commonwealth. Considering this forage related problem, it suggests that educational programs should address this problem more directly than is apparent in existing programs. Neglect of this problem, with an ongoing emphasis on improvement of the animal, without an associated improvement of the forage base may result in a less than totally successful educational program. The ultimate result may be a less profitable and sustainable beef industry for Kentucky.

Summary and Conclusion

Many Australian beef producers in the High Rainfall Zone have benefited from involvement in the successful Sustainable Grazing Systems program. They have been exposed to numerous changes in production practices that should help them improve their beef business and build their financial, social, and natural resource capital to achieve the triple bottom line objectives addressed by the program.

The University of Kentucky Cooperative Extension Service should be able to learn important lessons from Australia's SGS program. The most important lesson involves the need to address the whole production problem and not just a part of it! The emphasis on the beef animal without an associated emphasis on the forage base they graze may result in a less than totally successful educational program for the beef industry of Kentucky.

Educational program planners in Kentucky should also consider the possibility of involving producers to a greater extent than they have in the past. Further, programs should strive to base results on actual farm conditions or on a whole farm basis to give suggested production changes greater credibility with producers. This aspect of the SGS program proved to be an important aspect of the successful application of the program and could be an important lesson for educational program planners in Kentucky.

Using some of the lessons learned from the SGS program should prove beneficial to educational program planners in Kentucky. Successful application of these lessons should result in the greater success of Extension educational programs for the Kentucky beef producers. This should, in turn, result in more profitable and sustainable beef businesses for the Commonwealth.

Author Biography:

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Table 1. Beef Enterprise Net Returns, Dollars per Cow, Kentucky Farm Business Management Program Cooperators,1991-1999.

	Calves Sold			Calves Backgrounded		
Year	Average	High Third	Low Third	Average	High Third	Low Third
1991	-$123	-$40	-$181	-$152	-$39	-$265
1992	-$128	-$26	-$238	-$119	-$22	-$255
1993	-$146	-$42	-$276	-$67	$82	-$193
1994	-$160	-$59	-$208	-$234	-$58	-$430
1995	-$201	-$74	-$274	-$302	-$186	-$395
1996	-$270	NA*	NA*	-$213	NA*	NA*
1997	-$92	NA*	NA*	-$87	NA*	NA*
1998	-$155	NA*	NA*	-$144	NA*	NA*
1999	-$93	$9	-$195	-$139	$9	-$370

* Net returns for High and Low Thirds were not available.

Source: **Beef Cow Enterprise Costs and Returns Summaries 1991-1999**, Kentucky Farm Business Management Program, various years, Univ of Kentucky, Dept of Ag Econ

Table 2. Cattle Inventory, Australia and USA, 1971 - 2003, Selected Years.

Year	Australia[a]	Annual % Change	USA[b]	Annual % Change
	(000's)		(000's)	
1971	24,373		114,578	
1981	25,168		114,351	
1991	23,662		96,393	
1992	23,880	0.92%	97,556	1.21%
1993	24,062	0.76%	99,176	1.66%
1994	25,758	7.05%	100,974	1.81%
1995	25,731	-0.10%	102,185	1.20%
1996	26,377	2.51%	103,548	1.33%
1997	26,695	1.21%	101,656	-1.83%
1998	26,851	0.58%	99,744	-1.88%
1999	26,578	-1.02%	99,115	-0.63%
2000	27,588	3.80%	98,048	-1.08%
2001	27,721	0.48%	97,277	-0.79%
2002	27,270	-1.63%	96,704	-0.59%
2003	NA	NA	96,106	-0.62%

Sources:

[a] Agricultural Commodities, Australia, Australia Bu. of Stat., various years.

[b] Agricultural Statistics Board, National Agricultural Statistics Service, United States Department of Agriculture, various years.

Table 3. Top 15 Australian Beef Producers (by turn-off), 2001

Rank	Organization Name	Turn-off ETCW[a]	Herd Size	Land Holding Hectares
1	Stanbroke Pastoral Co. P/L	36,207	551,351	12,700,000
2	Australian Agricultural Co Ltd	33,865	408,092	6,530,000
3	S. Kidman & Co	13,742	168,000	11,190,000
4	North Australian Pastoral Co	12,955	188,000	5,707,000
5	Consolidated Pastoral Co. P/L	12,463	242,000	5,225,000
6	Heytesbury Beef P/L	9,406	201,049	3,337,000
7	Colonial Agricultural Co	8,369	126,277	2,018,000
8	Laglan Pastoral Co	6,710	55,000	500,000
9	NA	5,750	NA	NA
10	Lawn Hill P/L	3,626	50,447	717,000
11	NA	3,526	NA	NA
12	Acton Land & Cattle Co	3,392	85,000	590,000
13	NA	3,094	NA	NA
14	Twyman Pastoral Co	2,936	24,830	408,000
15	TK & PA Brinkworth	2,828	64,000	NA

Notes:

[a]Estimated Tonnes Carcasse Weight

Source: **Feedback**, Meat and Livestock Australia, May, 2002.

Table 4. Top 15 USA Beef Cow-Calf Producers (by number of cows), 2002

Rank	Organization Name	Location	Number of Cows	Land Holding[a] (Hectares)
1	Deseret Cattle and Citrus	St. Cloud, Florida	40,000	126,265
2	J. R. Simplot Co.	Boise, Idaho	32,500	1,618,778
3	King Ranch, Inc	Kingsville, Texas	25,000	333,873
4	Lykes Bros, Inc	Brighton, Florida	20,800	148,523
5	Parker Ranch, Inc	Kamuela, Hawaii	17,000	89,033
6	Briscoe Ranch, Inc	Uvalde, Texas	14,000	271,145
7	Rollins Ranches	Kenansville, Florida	NA	NA
8	Padlock Ranch Co.	Ranchester, Wyoming	13,500	179,684
9	Singleton Ranches	Beverly Hills, California	13,200	404,694
10	Seminole Tribe	Big Cypress, Florida	12,500	NA
11	Silver Spur Land & Cattle, LLC	Encampment, Wyoming	12,263	NA
12	Matador Cattle Co.	Wichita, Kansas	12,000	157,831
13	M. T. Waggoner Estate	Vernon, Texas	11,590	210,441
14	True Ranches	Casper, Wyoming	10,600	103,197
15	Denny Land and Cattle Co.	Burney, California	9,208	NA

Notes:

[a] Land holding information collected from various sources to supplement cattle numbers.

Source: Troxel, Tom, **Beef Cattle Research Update**, University of Arkansas, Division of Agriculture, Cooperative Extension Service, September, 2002.

Table 5. Number of Beef Cows, Number of Beef Farms, and Average Number of Cows per Farm, Australia 2000-2001 and USA 2002.

Country and State	No. Beef Cows	No. of Beef Farms	Avg. No. Cows/Farm
Australia [a]			
New South Wales	**2,221,380**	**24,682**	**90**
Victoria	925,650	16,830	55
Oueensland	4,377,100	12,506	350
South Australia	392,895	8,731	45
Western Australia	830,011	9,121	91
Tasmania	161,280	1,440	112
Northern Territory	850,622	202	4211
Total Australia	**9,777,229**	**73,513**	**133**
United States [b]			
(Top 10 States in Number of Cows)			
Texas	5,440,000	151,000	36
Missouri	2,060,000	68,000	30
Oklahoma	1,933,000	60,000	32
Nebraska	1,932,000	25,000	77
South Dakota	1,792,000	11,000	163
Kansas	1,505,000	34,000	44
Montana	1,451,000	12,500	116
Kentucky	**1,075,000**	**46,000**	**23**
Tennessee	1,060,000	51,000	21
North Dakota	1,008,000	13,000	78
Total USA	**33,117,700**	**1,032,670**	**32**

Sources:

[a] Agsurf, Australian Bureau of Agricultural and Resource Economics.

[b] Agricultural Statistics Board, National Agricultural Statistics Service, United States Deprt of Ag.

Table 6. Comparative Cow-Calf Budget for New South Wales[a] and Kentucky[b], 2002. Denominated in Australian Dollars[c], Costs and Returns Per Cow

	New South Wales Budget		Kentucky Budget
EXPECTED RETURNS PER COW			
1. Steer Calf	$185.64		$378.32
2. Heifer Calf	$76.31		$198.92
3. Cull Cow	$10.94		$113.34
4. Cull Bulls	$38.64		NA
5. Other Culls	$83.72		NA
Total Returns	$395.25		$690.59
VARIABLE COSTS PER COW			
6. Pasture Maintenance	NA		$92.00
7. Hay	$24.00		$128.80
8. Grain	NA		$19.32
9. Salt & Mineral	NA		$24.84
10. Vet & Medical	$8.87		$33.12
11. Ear Tags	$0.42		NA
12. Breeding	NA		$22.08
14. Marketing	$23.89		$16.80
15. Replacement Stock Main.	$40.00		$94.85
16. Mach & Equip	NA		$60.72
17. Other	$0.00		$0.00
18. Interest on Operating Capital	NA		$36.95
Total Variable Costs	$97.18		$529.48
Gross Margin (Return Above Var Costs)/Cow	**$298.07**		**$161.11**
Gross Margin (Return Above Var Costs)/Ha	**$91.43**		**$130.45**
FIXED COSTS PER COW			
19. Depreciation	NA		$33.12
20. Taxes and Insurance	NA		$12.88
21. Operator / Family Labor	NA		$140.76
Total Fixed Costs Per Cow	NA		$186.76
Total Cost Per Cow	NA		$716.24
RETURN TO LAND, CAPITAL, AND MGT	NA		-$25.65

[a.] Inland Weaners - Stores, Beef Cattle Gross Margin Budget, **Farm Enterprise Budgets**, NSW Agriculture, May 2003.

[b.] Trimble, Richard L., Steve Isaacs, Laura Powers, and A. Lee Meyer, **Livestock Budget Estimates for Kentucky -- 2000**, Univ of Ky, Ag Econ Ext No. 2000 -- 17, October, 2000.

[c.] The average exchange rate of $1.84 for 2002 was obtained from OANDA.com .

Table 7. Australian Beef Industry Estimated Profit per Cow by State, 1991 - 2001.

Year	New South Wales	Victoria	Queensland	South Australia	West Australia	Tasmania	Northern Territory
1991	-$164.54	-$363.22	$17.98	-$32.99	-$117.32	-$301.45	-$14.81
1992	-$182.26	-$417.69	-$44.51	-$33.31	-$72.86	-$322.99	-$27.77
1993	-$94.29	-$248.29	-$38.05	$117.24	-$114.46	-$140.86	-$69.88
1994	-$34.20	-$34.51	-$29.48	$191.74	-$44.67	-$12.27	$7.40
1995	-$188.97	-$219.90	-$30.08	-$6.53	-$59.04	-$260.31	$67.26
1996	-$221.49	-$255.58	-$43.98	-$92.05	-$32.31	-$176.71	$39.03
1997	-$198.61	-$267.66	-$27.48	-$28.52	-$43.29	-$252.51	$47.35
1998	-$291.82	-$436.57	$0.91	-$202.50	$14.75	-$171.49	$62.38
1999	-$150.72	-$318.73	$62.25	-$220.36	-$66.43	-$157.61	$38.84
2000	-$79.83	-$273.90	$25.68	-$163.64	-$32.51	-$59.36	$23.54
2001	-$54.23	-$166.35	$110.74	$124.69	$23.52	$21.43	$113.88

Source: Agsurf, Australian Bureau of Agricultural and Resource Economics

Table 8. Australian Beef Industry Estimated Rate of Return (Excluding Capital Appreciation) in Percent, by State, 1991 - 2001.

Year	New South Wales	Victoria	Queensland	South Australia	West Australia	Tasmania	Northern Territory
1991	-1	-2	2	1	-3	-3	2
1992	-2	-3	0	0	-2	-3	0
1993	-1	-2	0	5	-3	-1	-4
1994	1	0	1	6	-1	1	2
1995	-1	-2	0	1	-1	-1	7
1996	-2	-2	0	0	0	-1	4
1997	-2	-2	0	0	0	-2	4
1998	-3	-5	1	-2	1	-2	5
1999	-2	-4	3	-2	-1	-2	3
2000	-1	-3	2	-2	0	0	3
2001	0	-1	4	3	1	1	8

Source: Agsurf, Australian Bureau of Agricultural and Resource Economics