

## **Terminal Sires On White-faced Ewes Is It As Black & White As We Think?**

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The job description of extension is to “extend to producers new ideas and information generated by research”. In many cases, new ideas are “researched and validated”, an extension person “extends” this information to producers, and producers then adapt to these new production ideas. The world of agriculture abounds with examples of this system; hybrid seed corn, cross bred livestock, soil fertility, etc. However, sheep production systems are quite variable when compared to the singular research ideas we often suggest producers infuse into their management system. What “works” under the constraints of a research setting or farm flock management system may or may not produce as “obvious” a response in other management systems. Therefore, as producers, you need to document how well these research ideas perform within the confines of your production system and how they impact your (no one else’s) bottom line and your industry.

One obvious recommendation that has been around for a long time is the practice of using black-faced rams as terminal sires on predominantly white-faced commercial ewes. To most purebred producers, livestock specialists, lamb feeders and packers this idea is a “no brainer”. After all, these black-faced sires will usually increase market weights, increase the rate of gain, and increase carcass quality. Why then is it so difficult to get owners of commercial white-faced ewes to utilize black-faced bucks in a crossbreeding program? Are producers really that biased about breeds, or are other relevant production issues influencing their decisions?

***Black & White Breeding Project – A Three Year Trial:*** To address this issue we decided to follow the production of black-faced wether-type rams in a large commercial white-faced ewe flock over a three-year period. The same rams were used all 3 years. We hoped that monitoring some basic production data might help define the black-faced terminal sire issue as it relates to commercial grass-based production systems typical to the Midwest. The white-faced ewe flock included in the project consisted of about 350 Polypay X Rambouillet ewes that had a long history of crossbreeding with Polypay or Rambouillet sires. Traditionally, the flock has been color-coded with ear tags so that Polypay-sired ewes are always bred to Rambouillet rams and Rambouillet-sired ewes are always bred to Polypay rams. During the three-year period of the project, Suffolk, Polypay or Rambouillet rams were bred to roughly one-third each of the white-faced ewes. Polypay rams on the Rambouillet sired ewes, Rambouillet sires on the ewes sired by Polypay rams, and the Suffolk sires on ewes sired by both Polypay and Rambouillet rams. Lambing occurred in May and lambs and ewes were pastured together until early September in 1997 and early October in 1998 and 1999. The lambs were weaned, weighed, and marketed as feeder lambs. The ewes and lambs were rotationally grazed and received no grain during the project.

**Expected the unexpected** - Packers, lamb feeders and producers with grain-based winter lambing production systems have long recognized the value of speckle-faced crossbred lambs in their production systems: However, owners of grass-based flocks often question lamb survival and performance under more extensive pasture conditions.

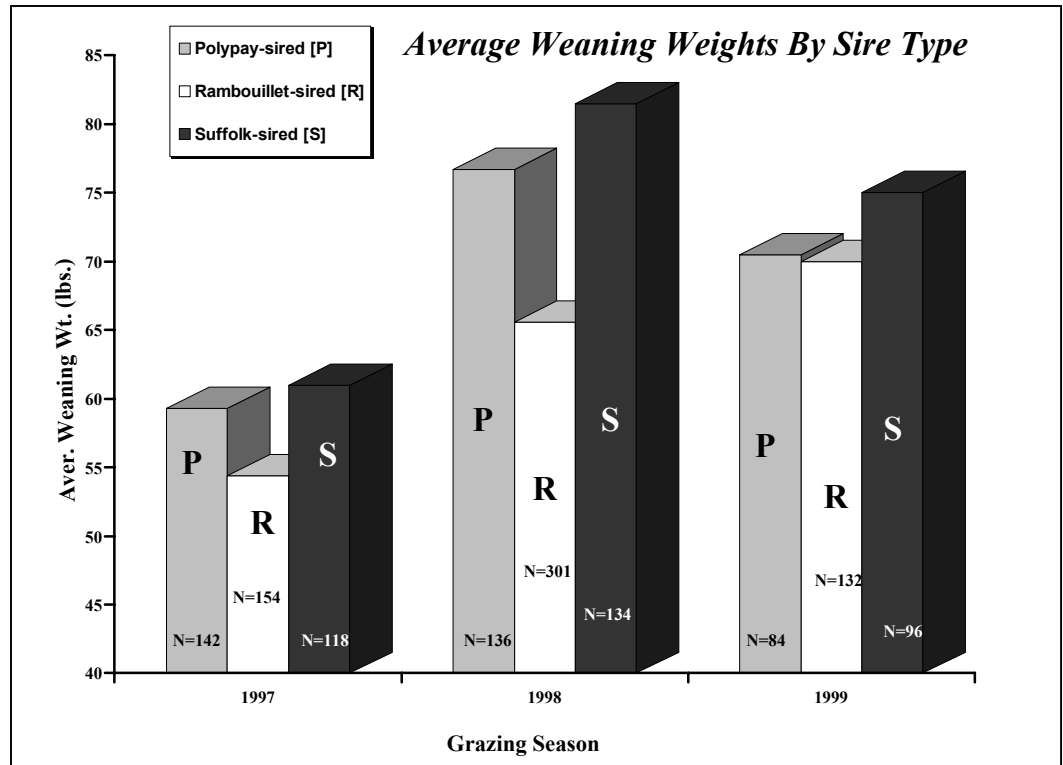
*Let's look at the data:*

**Weaning weight data:** One relatively easy way to evaluate lamb performance as it relates to sire type would be to compare weaning weights for the Suffolk-sired lambs compared to those of Rambouillet-sired or Polypay-sired flockmates. These sires were all bred to very similar white-faced Polypay X Rambouillet ewes.

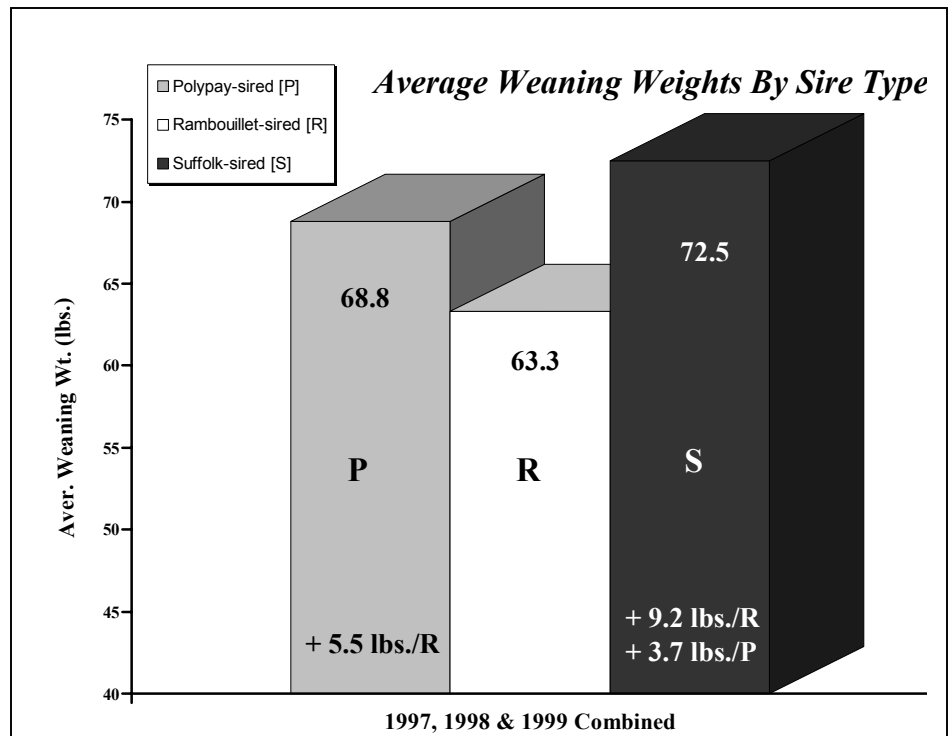
**Figures 1 & 2**

illustrate the variations in average lamb weaning weight related to sire type during the 1997, 1998 and 1999 grazing seasons. The Suffolk-sired lambs weighed more than the Polypay-sired lambs. Additionally, both the Suffolk and Polypay-sired lambs outweighed the Rambouillet-sired lambs at weaning. Over the three-year period the Rambouillet-sired lambs averaged 63.3 lbs., Polypay-sired lambs averaged 68.8 lbs. and the Suffolk-sired lambs averaged 72.5 lbs at weaning. Therefore, the Suffolk-sired lambs averaged 3.7 lbs heavier than the Polypay-sired lambs and 9.2 lbs heavier than the Rambouillet-sired lambs.

Note: The variations in lamb weights between years were probably due to differences in pasture conditions and in 1997 the lambs were weighted 30 days earlier than in years 1998 and 1999. Lambing dates and other management considerations were similar in all 3 years. Ewes and lambs were



**Figure 1:** Annual average weaning weights for Suffolk-sired [S], Polypay-sired [P] and Rambouillet-sired [R] lambs out of white-faced Polypay X Rambouillet ewes.



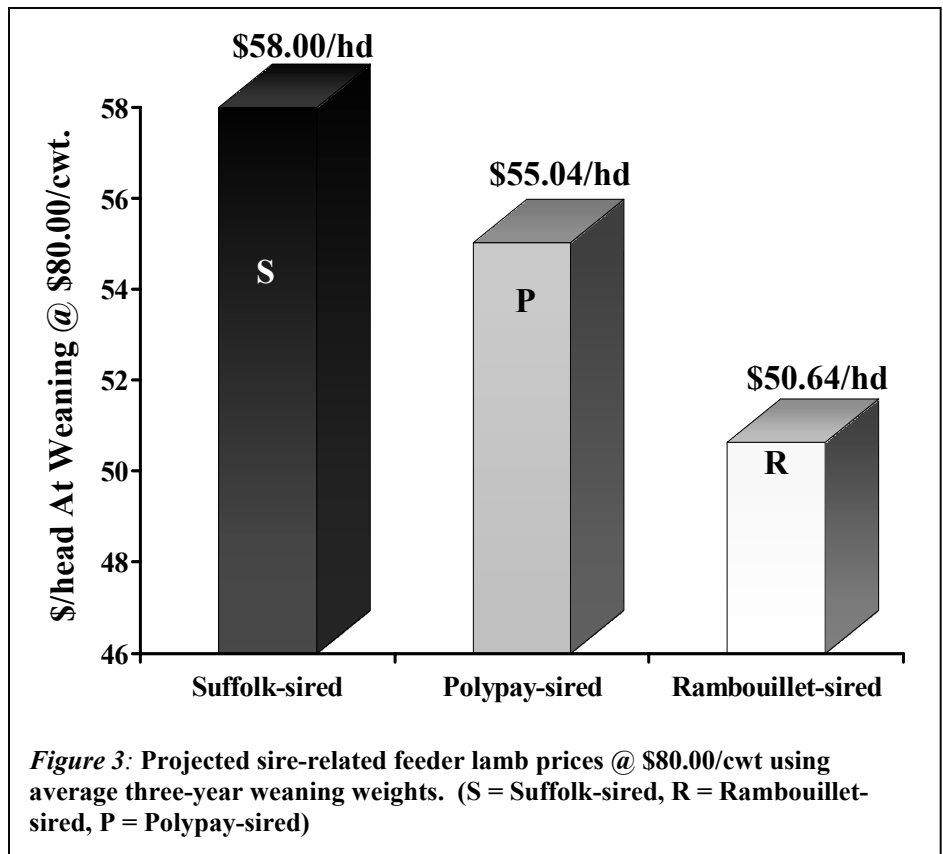
**Figure 2:** Three-year weaning weight averages based on sire type. (R = Rambouillet-sired, P = Polypay-sired, S = Suffolk-sired)

managed as one group for the entire grazing season and the ewes were only separated during the breeding season for accurate sire identification.

***An Economic example using weaning weights described in Figure 2:***

Assuming that feeder lambs sold at \$80.00/cwt at the weaned weights presented, over the three-year period the Suffolk-sired lambs would have resulted in an average annual \$7.36/hd sales advantage over the Rambouillet-sired lambs and a \$2.96/hd advantage over the Polypay-sired animals. Additionally, the Polypay-sired lambs would

have a \$4.40/hd advantage over their Rambouillet-sired flockmates. This example (**Figure 3**) would result in a three-year average value of \$58.00/Suffolk-sired lamb, \$55.04/Polypay-sired lamb and \$50.64/Rambouillet-sired lamb.



**Black-faced Rams – Producer Perceptions and Bias:** While the data in **Figures 1,2 & 3** appear to support the benefits of commercial grazing-oriented operations utilizing Suffolk sires in the breeding program it may not be as simple as differences in weaning weights. Typically, commercial producers display different thinking processes and economic calculations than do many academic folks! Average weaning weights and sire type mean nothing to a commercial producer *IF* lambs are not “present and accounted for” when sale day arrives. For the commercial producer, the critical factor is total pounds of lamb sold, not the average weaning weight. This is why producers attuned to grazing operations like to calculate income on a per-ewe basis. **Table 1** should help illustrate this point.

It is obvious that while the Suffolk sired lambs consistently yielded higher weaning weights, they didn’t always generate more pounds of lamb per ewe marketed each fall. It is important to note that the comparison in drop percentages between the Suffolk sired and Whiteface sired lambs was almost identical, 1.82 and 1.86 lambs per ewe. This would be expected since the genetics of the dams is similar. “Drop is equal to all lambs born including abortions and lambs born dead”. Where did the lambs go between the very similar drop percentages and the number of lambs weighed in the fall? These “lost” lambs could be lambs lost at birth, lambs that were orphaned or grafted on to another ewe, lambs that died on pasture, and lambs that lost their tag and so their identity, (dam –sire), could not be confirmed. In 1997, detailed records were kept during lambing and the Suffolk sired lambs did not experience more dystocia or lambs born dead than the white faced sired lambs. However, one important difference between 1997 and the other two years of the trial was significant coyote depredation in 1997. It is estimated that at least 50 lambs were lost over the entire pasture season to a rogue pair of coyotes. Significant effort was made to eliminate the problem pair but the depredation issue was not solved until late in the fall of that year. This farm is in a high population coyote area but usually only experiences

predation problems every 8 to 10 years. While general knowledge explains depredation as “culling of the weak and sick”, comments from the owner emphasizes that these coyotes had more discriminating tastes and had killed very healthy lambs weighting over 70 pounds.

**Table 1: Three-year production data expressed as production per ewe. BF(Suffolk) sired or WF (Rambouillet or Polypay) sired.**

Year	1997		1998		1999		3-Yr Average	
	BF	WF	BF	WF	BF	WF	BF	WF
<b>Sire Type</b>	BF	WF	BF	WF	BF	WF	BF	WF
<b>BF (Black-faced)</b>	Sired	Sired	Sired	Sired	Sired	Sired	Sired	Sired
<b>WK (White-faced)</b>								
<b>Lamb Drop/Ewe</b>	1.83	1.87	1.81	1.79	1.81	1.93	1.82	1.86
<b>Lambs Weighed/Ewe</b>	1.31	1.53	1.56	1.58	1.53	1.65	1.47	1.58
<b>Average Weaning Weight (lbs.)</b>	61.0	56.7	81.5	76.8	75.0	70.0	72.5	67.8
<b>Lbs. of Lamb Weaned/Ewe</b>	79.8	87.0	128.0	120.9	115.5	115.4	107.8	107.8
<b>Difference (lbs.) BF vs WF Sired</b>	-7.2		+7.1		+0.1		0	

**Coyote losses:** While there are no hard facts that support Suffolk-sired lambs suffering increased losses due to coyote depredation, producers may have some valid observations. Producers using Suffolk sires on white-faced ewes in grazing operations have commented that this fact didn’t surprise them as their Suffolk-sired lambs typically isolate from the flock, are more independent and curious, more oblivious to flock movements and are commonly found in trouble related to fencing. These behavioral scenarios might all explain increased losses due to coyote depredation.

**What happened at a feedlot level:** During 1999-2000 we had the opportunity to follow 19 of the white-faced lambs (either Polypay-sired and Rambouillet-sired) and 17 of the speckle-faced lambs (Suffolk-sired) from the 1999 grazing season through the kill line to gather some carcass data. The 1999 lambs were retained by the owner and sold later in the year to a feedlot at an average weight of 108 lbs./hd. While this was not a large sampling of lambs, it was a selection of finished lambs - as determined by the feedlot operator. The lambs were weighed at the feedlot as a group and tagged accordingly. The resulting data should give

Table 2: Feedlot data based on sire type	Poly./Ramb.-sired Lambs (N=19)	Suffolk-sired Lambs (N=17)
<b>Average Live Weight At Slaughter (Difference/hd)</b>	137.5 lbs./hd	146.0 lbs./hd (+ 8.5lbs)
<b>Average Hot Hanging Weight At Slaughter (Difference/hd)</b>	72.4 lbs./hd	76.7 lbs./hd (+ 4.3 lbs)
<b>Dressing % (Difference/hd)</b>	52.6 % (+ 0.1%)	52.5%
<b>Average Back Fat Measurement (Difference/hd)</b>	.35 inches	.29 inches (- 0.06)
<b>Average Grade And Yield (Difference/hd)</b>	Choice 2.6	Choice 2.5 (- 0.1)
<b>Average Loin Eye Area (Difference/hd)</b>	2.65 sq. inches	2.98 sq. inches (+ 0.33)
<b>Average Price @ \$80.00/cwt. (difference/hd)</b>	\$110.00/hd	\$ 116.80/hd (+ \$6 80)

us a reasonable indication of how the Suffolk sires influenced carcass quality and feedlot weights as compared to the Rambouillet-sired/Polypay-sired lambs.

At the time of slaughter, the 17 lambs in the Suffolk-sired group weighed an average of 146.0 lbs./hd while the 19 lambs in the Whitefaced-sired group averaged 137.5 lbs/hd (*See Table 2*). At a sale price of \$80.00/cwt the Suffolk-sired lambs brought \$6.80/hd more than their whiteface-sired flockmates. Thus both sale weights and dollar values were 6.1% higher for the Suffolk-sired lambs. On the average the Suffolk-sired lambs were about 17 % leaner as determined by back-fat measurements. The Suffolk-sired lambs displayed an average loin eye area that measured 12.5% larger than the white-faced lambs. Grade and yield data generated at grading were nearly identical as were dressing percentages.

***Final thoughts:*** This article seems to support using black-faced terminal sires in this commercial grass-based flock. The Suffolk sired lambs were from 4.3 to 5 pounds heavier than the white-faced sired lambs - every year. There is no doubt that the Suffolk sired lambs will be heavier - even with just pasture. The Suffolk sired lambs also appear to be a win/win proposition for the lamb feeder, processor and consumer. That said - convincing commercial ewe flock owners to utilize this type of ram in a breeding program is still the issue, if, "bottom line" differences in production per ewe are not so obvious. Furthermore, commercial ewe flock owners must also be convinced to adjust their management practices to accommodate another breeding group of ewes and to decide how they will select ewes that will go with the terminal sire. This may not represent an insurmountable problem if producers recognize that 80% to 90% of ewes in late spring lambing flocks become pregnant during the first 17 to 18 day heat cycle. Thus, a commercial producer need only keep an extra breeding group of ewes for the first 17 to 18 days of the breeding season!

A second issue involves maternal ewe selection and estimating ewe numbers assigned to the terminal sire. If flock size is stable, ewe lamb numbers equivalent to about 25% (25 per 100 ewes) of the ewe flock need to be retained as replacements. If your ewe lambs have an 80% conception rate you can replace 20% of your ewes per year. *Example:* With a raised lamb ratio of 1.5 lambs per ewe (i.e. 150 lambs per 100 ewes thus 75 ewe lambs per 100 ewes) you would need to retain for replacement 1/3 of the total ewe lambs born. That would mean you could breed up to 2/3 of your ewes to a terminal sire - *if you can identify the ewes you want to generate the replacements*. Everyone will have their own biases on which ewes should generate replacements. However, converting that information into a useable system at the sorting chute can be a challenge. Consider colored ear tags or ear notches so that every ear tag does not have to be read.

**In closing, it should be obvious that not all decisions in life are as black and white as folks often want us to believe!** The data generated in this trial contains all of the unscientific real world variables of sires, dams, coyotes, weather, worms and pasture facing commercial flocks. Just looking at weaning weights may not be the way to run your operation, if, overhead is calculated on a per ewe basis. This trial is an excellent example of the need to examine the entire enterprise before making management decisions. Do black-faced sires have a place in your commercial operation? While an increase in weaning weights would seem like a desired outcome, it is always important to consider all the impacts management changes will have to your bottom line - before you take action.