

Warden's Breeding Program – The Power of Selection for Feed Efficiency

Warden's Farm has been collecting feed intake data since the early 1980's. Why? Because early on Duane Warden realized that feed cost represented over 60% of the total cost of raising cattle and something should be done about reducing the cost of cattle production. With this in mind, Warden started calculated and began using Adjusted Feed Conversion (AFC), and more recently, Residual Feed Intake (RFI) in all his tested bulls. These two traits have been used in conjunction with other economically important traits in bull selection. Other traits of major consideration are fertility, growth rate, marbling score, rib eye area and functional soundness in both the bull and its mother.

Sire Selection Pressure

Warden bred bulls listed in table 1 have had a major influence in his breeding program and because feed efficiency is the topic of this discussion only that trait is listed for simplicity sake. As one can see all bulls except the first one have adjusted feed conversions below 5.5lbs of dry matter per pound of gain, and maybe more importantly, averaged a -1.89 for RFI. Therefore, Warden has put some serious selection pressure this past decade to improve feed conversion.

Table 1. Warden bred bulls used in breeding program.

Warden Bred Sires	Adjusted Feed Conversion	Residual Feed Intake
Ironwood New Design 022 701	5.84	-.70
Ironwood New Level	5.02	-2.20
Ironwood Design 3U 0350	5.18	-1.33
4 Point 8 of Ironwood	4.82	-2.61
Ironwood Four Eighty Seven	5.21	-1.06
Ironwood 4P8 701 4333	5.18	-2.50
Ironwood Payout 1224 5071	4.31	-1.22
Ironwood New Day 9399 5526	5.29	-3.36
Ironwood New Day 022 6331	5.32	-2.08
Ironwood NL 487 6370 7557	5.08	-1.62
Ironwood 4333 9399 8329	4.47	-5.02
Ironwood NL3S NL 8356	5.35	-2.55
Ironwood Shear Force NL 9323	4.93	-0.15
Ironwood Foresight 9399 9335	4.1	-2.89
Ironwood Daybreak 8353 0307	5.15	-0.97
Ironwood Daybreak 7316 0352	5.29	-1.86
Ironwood New Level 4405 0353	4.45	-3.36
Ironwood Prime S 0410	4.43	-0.46
AVERAGE	4.71	-1.89

What are the results?

During the 2010-11 production year Wardens Farm did feed intake, gain tests, AFC, and RFI evaluations in three locations; his own PinPointer 4000 equipment at the home place in Council Bluffs, the Feed Intake Monitoring System at Iowa State University's Beef Nutrition Farm, and Hays Beef Development Center at Diagonal. These tests included 43 bulls and 43 yearling heifers which were sired both by Warden bred sires and a few outside AI sires. The outside AI sires were selected primarily because they were thought to sire progeny that are good or excellent at feed conversion.

Table 2 shows first of all that cattle did very well at feed conversion with average of 5.29 lbs of feed dry matter/lb of gain for the bulls and 8.30 lbs of feed dry matter/lb of gain for the developing heifers. However, more importantly is to notice that the progeny by Warden bred sires were substantially more efficient. In fact, they were on average 8.4% more efficient in dry matter conversion than the outside AI sires!

Table 2. Comparison of Warden bred sires to outside AI Sires for feed efficiency measures.

	Raw Feed: Gain	Adjusted Feed: Gain	RFI
Bull Progeny			
Warden Sires	5.04	5.10	-.57
Outside AI Sires	5.53	5.46	.32
Heifer Progeny			
Warden Sires	7.91	7.95	-.43
Outside AI Sires	8.69	8.85	.46

What Does 8.4% Greater Feed Efficiency Mean?

The beef industry routinely uses growth stimulants and feed additives to achieve anywhere from 5% to 15% better feed conversion and here you have genetics doing the same thing and the cost to the producer is basically free of cost and requires no labor to utilize. With corn bouncing around the \$6 to \$7 per bushel range and other associated feeds used to build a finishing ration being higher as well, the current ration costs run about \$230/ton of dry matter.

So let's do the math and figure out what 8.4% greater feed efficiency is worth for each head finished. Let's take a 650 lb feeder and market is at 1300 lbs with an average feed conversion of 7lbs of dry matter/lb of gain for our example. The 8.4% feed efficiency advantage would mean the Warden sired cattle would convert at 6.41 lbs of dry matter/lb of gain or .59 lbs or less. Now let's use the 650 lbs of gain to finish the cattle; that would accumulate to 383.5 lbs of dry matter per head. Does not sound like

much, but when one takes that 383.5 lbs of dry matter times the \$230 cost per ton of dry matter; the total savings per head would be \$44.10!!

Why don't we take this a step further and look at what this savings means to the value of a Warden sired bull. Consider that a bull typically will last 4 or 5 breeding seasons and sires about 22 live calves each year for a total of 88 to 110 calves. With this in mind, take those progeny numbers times the \$44.10 per head, the Warden sired calves would have an accumulated total feed cost savings of \$3380 TO \$4851!!! Now that is savings worth going after.

Take Advantage of an Innovative Breeding Program

Bull selection is one of the most important management decisions that a cow-calf producer has to make. Buying and utilizing the best genetics is important to enhancing profitability in the operation. Not only should the calf crop have greater income earning potential, but replacement females kept back should enhance the herd's earning power. Can you imagine what might be the future savings if you start stacking Wardens Farm genetics in your cow herd? You deserve a cowherd that not only has enhanced product value, but also one that has the ability to do it at a lower cost. All it takes is a phone call.