

# COST OF FEED PER POUND OF GAIN IN CAL POLY'S DAIRY CALVES

## INTRODUCTION

California is ranked as a top producer amongst 5 other states in the United States for dairy production. As on any livestock operation, feed is the number one cost to the farm. It is important to start young stock off strong as they begin to grow into the mature, high producing cattle we need to keep the industry at its peak operation.

This project was conducted at the California Polytechnic State University's Dairy Operation to determine the amount of cost per pound of weight gain to feed a heifer calf from birth to 8 weeks of age.

## HOW TO

- 22 Calves were weighed from birth to 8 weeks of age
- Weight tape was used
  - Placed at the hearth girth (Figure 1)
  - Tape was then pulled to take up the slack and read at the appropriate breed weight (Figure 2)
  - Information was recorded on an Excel document and used to create calculations (Figure 3)



FIGURE 1



FIGURE 2

FIGURE 3

A	B	C	D	E	F	G	H	I	J	K	L	M
Date	6/8/16	6/16/16	6/23/16	6/30/16	7/9/16	7/16/16	7/23/16	7/30/16	8/5/16	8/12/16	8/19/16	8/26/16
Calf id:	Weight:											
2811	87	98	107	118	127	136	148	159	-	-	-	-
2812	96	107	116	128	141	150	158	170	-	-	-	-
2814	-	48	66	84	110	129	146	165	182	205	-	-
2815	-	-	69	87	103	118	135	151	166	180	-	-
833	-	-	45	53	62	71	78	86	95	105	-	-
2816	-	-	-	71	90	107	124	140	153	174	191	-
834	-	-	-	46	57	66	77	85	92	101	110	-
2817	-	-	-	-	92	100	109	118	125	135	143	152

## WEIGHT CALCULATIONS

ADG OF CALF PER DAY	
Calf id:	
2811	2.188
2812	2.379
2814	2.252
2815	2.252
833	1.328
2816	2.344
834	1.415
2817	2.174
835	1.712
837	1.708
838	1.712
839	1.528
840	1.571
2821	2.491
841	1.645
842	1.837
2822	2.845
843	1.704
2824	2.442
2825	2.150
2826	2.413
845	1.605

FIGURE 4

- To calculate the Average Daily Gain per Calf, The average from the weights in Figure 3 were calculated for each heifer, then they were divided by 56 days (equivalent to 8 weeks) as seen in figure 4
- A total average was taken after the individual average weights were determined in order to find an Average ADG of the herd

**Average ADG of the herd is 1.986 lbs.**

## FEED CALCULATIONS

$$\frac{5\text{lb of feed}}{1\text{ day}} \times \frac{1\text{ day}}{1.986\text{ lbs of gain}} = \frac{2.518\text{ lb of feed}}{1\text{ lb of gain}} \times \frac{\$0.19}{1\text{ lb of feed}} = \frac{\$0.48}{1\text{ lb of gain}}$$

- It was determined that the calves are fed 5 lbs of feed per day. Knowing that the calves are gaining at a rate of 1.986 lbs per day I was able to calculate the cost of feed per pound of weight gain
- The grain cost was determined to be about \$9.50 per 50 lb bag, making the price per lb of grain \$0.19

## RESULTS

**The Cal Poly Dairy spends roughly \$0.48 on 1 pound of gain for the calves from birth to 8 weeks of age.**



## CONCLUSIONS

- The outcome of this project is important to the Cal Poly Dairy Operation. Knowing how much it costs to raise the heifers while they are in the hutches can help make improvements in calf care to become a more efficient dairy. Though this research proved to be successful, there is always room for improvement
- Improvements:
  - Obtain a scale to achieve more accurate weights
  - Weight tape is an approximate weight depending on size of girth
  - Tape also has potential for error if not properly trained on how to use it

