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Seeking Optimality

On a hot day in June (National Dairy Month), I would do just about anything to get myself an ice cream cone. The cold and refreshing sweet-treat is a delight of early summer; it is a welcomed contrast against the balmy days and a complement to warm nights. I might even have two.

The third cone would still be nice, though I'd certainly be well on my way to brain freeze. A fourth, fifth, or sixth would be well beyond my capacity. In fact, I shudder at the thought of seven ice cream cones – each additional cone would become unbearable and a detriment despite the first being such a pleasurable delight.

This is a commonly used analogy amongst economists to illustrate "the law of diminishing marginal returns". This is fancy economic jargon for the intuitive reality that all goods have a point at which the benefit received from each additional unit consumed actually plateaus and even becomes an impairment. Your first pair of shoes provides an incredibly important utility, while your 600th pair might not fit in your house, let alone get worn.

In agriculture, farmers and ranchers are almost continuously fed the narrative of scarcity – that we must be the generation to feed future generations. We seek to generate massive yields and colossal animals that create a bountiful food supply.

In practice, we're really quite good at this. In the last 30 years, the average corn yield in the US has risen about 70 bushels per acre. The average mature cow size in the US is about 1,400 lbs an increase of 400 lbs since 1975.

Though these gains represent astonishingly impressive improvements in technology and efficiency, they dually come with a cost – often in unforeseen ways.

Sometimes we unexpectedly see this on a farm's income statement. The impressive top-line revenue figures from massive crop sales are shadowed by the ever-growing list of expenses incurred in the process. The costs sequentially erode the revenue section's faulty bulwark as one looks at each line lower, finally giving way to an unbelievably thin margin between the two.

As discussed in previous articles, many of these costs are dually inevitable and fickle as the interconnected food system is well outside of any one individual's control. Yes, costs may be reduced as operations expand and capitalize on "economies of scale". Though for many, expanding the footprint is not ideal.

Yet sometimes, these costs are incurred in needless pursuit of addressing the perceived and indoctrinated scarcity. Smaller and mid-sized businesses that face these erosive costs may wish to alter their strategy. Instead of yield maximization, optimizing or balancing costs to their production benefit can be an effective way to recapture some of the previously consumed revenue.

Undoubtedly, production will not be as high without some of these additional expenses. Though these strategies reflect the law of diminishing returns in our business. Maybe the additional pound of gain or bushels per acre yield costs us far more than what it's worth. Ultimately, we are well advised to care most about our bottom line – or that which we use to support our lives.

If you are interested in evaluating your enterprise's financial conditions before the 2025 growing season, please consider attending one of our many Extension workshops or contact us for an individualized consultation.

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