Should You Upgrade to a 3x4' Large Square Baler?

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Costs associated with feeding or bedding with large-square bales just begin when the bale hits the ground. In fact, combined downstream costs of gathering, handling, transporting, storing, and feeding those bales can easily exceed baling costs. To reduce total costs for the given annual tonnage, farmers must reduce the number of bales handled. Moving from a 3x3' to a 3x4' bale size can reduce the number of bales needed by a third without requiring extensive changes to the bale system. To help farmers compare costs of these two bale sizes, an economic analysis was conducted to determine if cost reductions from handling, storing, and feeding a third fewer bales offset greater baling costs associated with using the larger baler. An extensive spreadsheet model was created to estimate costs of baling, handling, storing, and processing bales of hay and crop residues. The analysis involved dozens of assumptions, so space does not allow inclusion here. It is important to note that the costs of baling include the fixed costs of depreciation and interest.

Consequently, when more tons are baled per year, the ownership costs of baling can be diluted across more bales rapidly helping drive down fixed costs of baling. Our analysis showed the cost of owning and operating a large-square baler may be prohibitive when annual tonnage is small. Using a round baler or using a custom baling service are likely better options when only a few hundred tons are made annually. The 3x4' bale becomes more economical than the 3x3' at ~700 tons/year – that's ~1,400 3x3' bales/year. Although the differences in cost per ton are not great as annual tonnage increases, total cost savings grow substantially. The crossover point where the 3x4' is more economical than the 3x3' will be different for every enterprise. But this analysis showed the move to the 3x4' bale could be advantageous for many operations.

The economics of different bale size is important, but other factors should be considered when contemplating a change from the 3x3' to the 3x4' bale, including:

- **Field Productivity:** all other factors being the same (windrow size, moisture, etc.), the 3x4' baler can be expected to bale more acres per hour than the 3x3' baler. This should allow fields to be baled more quickly so gathering and transport can happen sooner.
- **Baleage:** if you wrap square bales, be aware some bale wrappers are incapable of wrapping larger 3x4' bales. However, there are individual and in-line wrappers available that can wrap the larger 3x4' bales.
- **Stability:** 3x4' bales have a wider base and tend to be more stable when stacked. There will be fewer 3x4' bales in a given stack volume, which should also promote stability. No matter what bale size you use, proper stacking and strapping procedures should always be followed.