



## 2019 TAPS Sprinkler Corn Marketing & Profitability Strategies

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The University of Nebraska Testing Ag Performance Solutions (UNL-TAPS) program is an interactive real-life, real-time, farm management competition for profitability and input-use efficiency. Contestants in the competition make decisions on a number of management options for their farm, including expenses and marketing. This article explores the differences in profitability among the 2019 sprinkler irrigated corn competition teams. The results are amplified to represent 3,000 acres. The expected yield average (APH) for all farms is 225 bushels per acre.

Profitability is the difference between revenue and expenses. As a result, UNL-TAPS competitors must reduce costs without sacrificing yield and have an effective marketing strategy. Therefore, multiple combinations of costs and marketing strategies can lead to different profit levels.

Table 1 shows the yield per acre, cost per bushel, revenue per bushel, and profit per bushel for each team. The top five teams in each column are highlighted in green, while the bottom five are highlighted in red. Costs per bushel in the 2019 competition ranged from \$2.76 to \$3.36 per bushel while yields ranged from 192.2 to 236.8 bushels per acre. Revenue ranged from \$4.25 to \$3.38 per bushel.

Team 7 was the most profitable team in 2019; however, they ranked fifth in yield, fourth in cost of production and second in revenue per bushel. The result was \$1.32 per bushel of profit.

**Table 1. Yield, Costs, Revenue and Profitability results of 2019 Sprinkler Irrigated Corn Competition, ranked by profitability.**

| Team | Yield <sup>1</sup> (bu./acre) | Cost (\$/bu.) | Revenue (\$/bu.) | Profit (\$/bu.) |
|------|-------------------------------|---------------|------------------|-----------------|
| 7    | 222.6                         | 2.86          | 4.18             | 1.32            |
| 17   | 211.6                         | 2.79          | 3.89             | 1.1             |
| 9    | 212.5                         | 3.36          | 4.25             | 0.89            |
| 1    | 211.2                         | 3.04          | 3.79             | 0.75            |
| 19   | 214.4                         | 3.03          | 3.75             | 0.72            |
| 4    | 218.2                         | 3.01          | 3.71             | 0.7             |
| 2    | 223.4                         | 3.01          | 3.7              | 0.69            |
| 12   | 212.5                         | 2.92          | 3.58             | 0.66            |
| 8    | 216.9                         | 2.98          | 3.62             | 0.64            |
| 15   | 236.8                         | 2.85          | 3.49             | 0.64            |
| 10   | 233.7                         | 2.76          | 3.38             | 0.62            |
| 3    | 213.3                         | 2.97          | 3.55             | 0.58            |
| 13   | 221.3                         | 3.08          | 3.6              | 0.52            |
| 18   | 218.7                         | 2.98          | 3.48             | 0.5             |
| 16   | 220.6                         | 3.09          | 3.58             | 0.49            |
| 23   | 192.2                         | 3.19          | 3.66             | 0.47            |
| 20   | 218.2                         | 3.07          | 3.53             | 0.46            |
| 22   | 221.2                         | 3.07          | 3.5              | 0.43            |
| 6    | 203.3                         | 3.22          | 3.62             | 0.4             |
| 14   | 193.8                         | 3.28          | 3.58             | 0.3             |
| 21   | 236                           | 3.12          | 3.38             | 0.26            |
| 11   | 194                           | 3.33          | 3.38             | 0.05            |

<sup>1</sup> After hail damage adjustment.

<sup>2</sup> Farm 5 and 24 were UNL managed farms and are excluded from this analysis.

This team used a combination of cash forward contracts, futures contracts and cash sales at harvest, which can be seen in Table 2. The team cash forward contracted 450,000 bushels of corn in late May (66% of expected production). They then placed a Dec. 2019 hedge on May 30 on 150,000 bushels, which they lifted in November, around harvest. The team sold their remaining 217,800 bushels across the scale at harvest at \$3.436.

| Contract     | Date   | Quantity (bu.) | Price (\$/bu.) |
|--------------|--------|----------------|----------------|
| Cash Forward | 21-May | 150,000        | 4.094          |
| Cash Forward | 24-May | 150,000        | 4.2            |
| Cash Forward | 30-May | 150,000        | 4.496          |
| Short Hedge  | 30-May | 150,000        | 4.496          |
|              | 18-Nov |                | -3.68          |
|              |        |                | 0.816          |
| Cash Sale    | 22-Nov | 217,800        | 3.436          |

| Contract        | Date          | Quantity (bu.) | Price (\$/bu.) |
|-----------------|---------------|----------------|----------------|
| Short Hedge     | 20-Mar 20-May | 250,000        | 3.9475         |
|                 |               |                | -4.045         |
|                 |               |                | -0.0975        |
| Hedge to Arrive | 29-May        | 150,000        | 4.33           |
| Short Hedge     | 22-Nov        | 500,000        | 4.37           |
|                 |               |                | -3.68          |
|                 |               |                | 0.69           |
| Cash Sale       | 13-Nov        | 250,000        | 3.7            |
| Cash Sale       | 22-Nov        | 215,000        | 3.6475         |
| Cash Sale       | 22-Nov        | 22,500         | 3.38           |

Team 9 provided evidence that higher production costs, combined with an aggressive marketing strategy can lead to high profits. This team had the third highest costs but, more importantly, had the highest revenue (marketing) per bushel. Team 9 faced some challenges when marketing their grain. The first hedge they placed was for 250,000 bushels on March 20. When the market rallied (moving against their position), the team lifted their hedge on May 20, costing them almost 10 cents per bushel. On May 29, they hedged 500,000 bushels (74% of expected production) and lifted it at harvest, benefiting 69 cents per bushel. The team also used a Hedge to Arrive Contract May 29, guaranteeing delivery of 150,000 bushels to a local elevator. Their remaining cash sales were made in November.

Interestingly the top five revenue farms are also the top five profit teams. However, the revenue rankings are different than the profit rankings. Not all top five revenue teams used just futures hedging to protect their price risk. The fourth most profitable team, Team 1, made a single cash forward contract sale of 375,000 bushels on June 12 for \$4.07 per bushel (55% of expected production) and sold their remaining 258,600 bushels at harvest.

The fifth most profitable team, Team 19, cash forward contracted 340,000 bushels (50% of expected production) by June 12, 2019. They also took advantage of a late fall rally in the market and contracted an additional 60,000 bushels on Oct. 25. Finally, they sold their remaining 139,600 at harvest.

This year's competition results provide evidence that you do not need to be the lowest cost producer and/or the best marketer to survive. In fact, all of the teams were profitable. Three of the five lowest revenue teams did not pre-harvest market any of their crop during the growing season, selling all of their production at harvest. Team 10 did not use a pre-harvest marketing strategy, but still placed 11<sup>th</sup> in profitability because of their low cost of production and high yields.

As we look forward to the 2020 growing season and UNL-TAPS competition, consider how cost of production and marketing work together to create profitability. Examples from the 2019 sprinkler irrigated corn competition show that focusing in only one area (yield, cost or revenue), does not necessarily lead to the greatest profitability. Achieving high profitability appears to require a balanced effort.