



How can crop marketing and crop insurance go together?

2026 Risk and Profit Conference

Chandan Bhattarai¹, Andrew McKenzie², Hunter Biram², Jesse Tack¹

¹Department of Agricultural Economics, Kansas State University

²Department of Agricultural Economics and Agribusiness, University of Arkansas

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Background

➤ **Agricultural production entails:**

- Production Risk: Weather events, Pest and Diseases, Yield Variability
- Price Risk: Price volatility, Demand/Supply Fluctuation
- Financial Risk: Input cost variability, Interest Rate, Credit Availability

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Background

➤ Key risk management tools and strategies:

- Forward Contracting
- Federal Crop Insurance Program (FCIP)
- Agricultural Risk Coverage (ARC) / Price Loss Coverage (PLC)
- Hedging
- Storage etc.

Introduction

➤ Forward Contracting:

- Involves transferring ownership of physical grain
- Locks in predetermined prices and secures buyers and manages price risk
- 33% of agricultural production under contract since mid-1990s in US
- Widely used for corn and soybean

Forward Contracting

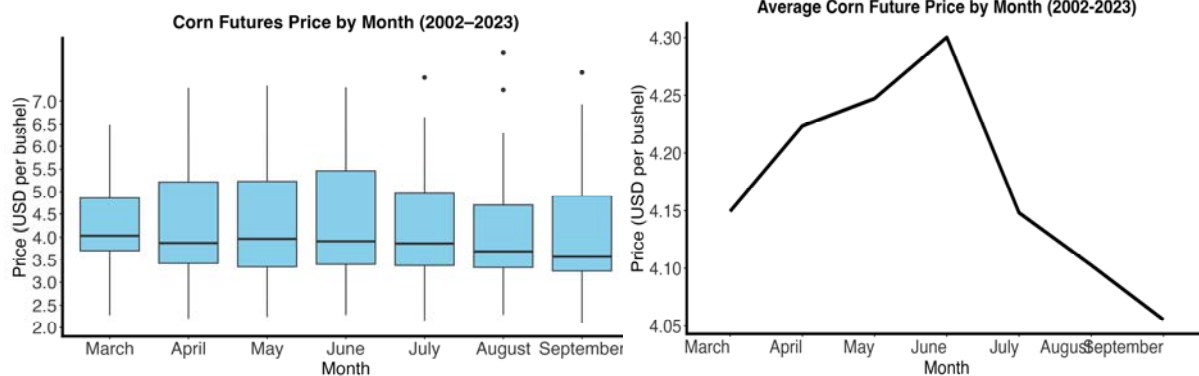
➤ Weather Risk Premium

- Buyers pay higher prices to hedge against weather uncertainty
- Farmers benefit from locking in higher prices
- Increases revenue for farmers

➤ Consequences of Aggressive Forward Contracting:

- Unexpected yield shortfalls increases delivery risk
- Financial losses due to non-delivery penalties

Futures Price



Crop Insurance

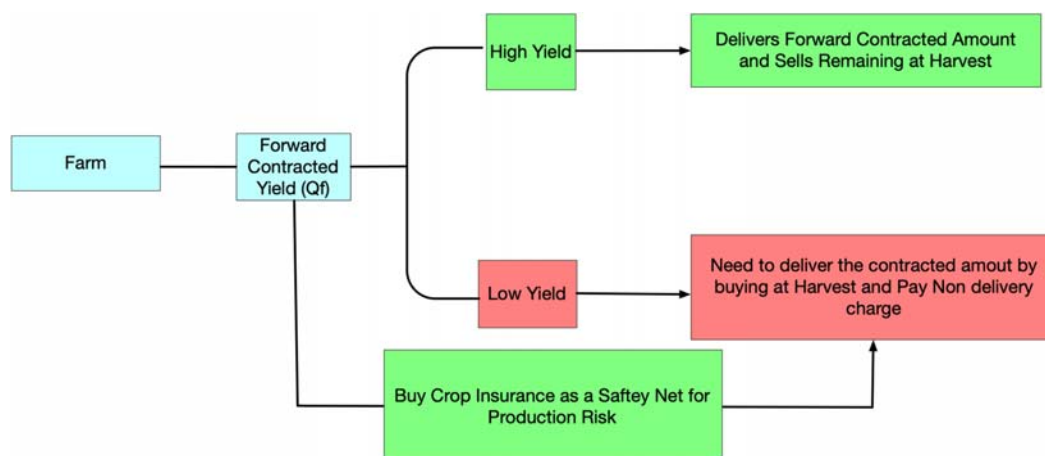
➤ Revenue Protection Insurance:

- Popular crop insurance option for farmers
- Links directly with future markets
- Offers protection against yield and price risks
- Ensures stable revenue for farmers
- Coverage level ranges from 50% to 85% in increment of 5%

➤ Yield Protection Insurance:

- Popular crop insurance option for farmers
- Offers protection against yield
- Coverage level ranges from 50% to 85% in increment of 5%

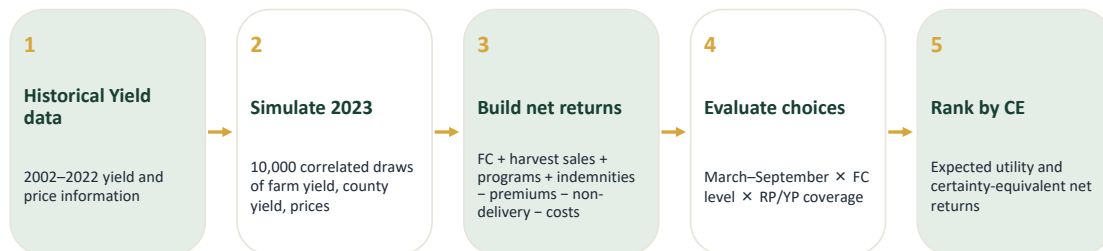
Production Risk in Forward Contracting



Data

- County Level Yield: NASS
- Monthly Futures: Barchart.com
- Insurance Rates: Risk Management Agency (RMA)

Methodology



Methodology

Table 1. Calculating Crop Revenue Using a Forward Price and Non-Delivery Penalty

Expected Yield (a)	200.00 bpa
Booked Yield (b = 80% × a)	160.00 bpa
Realized Yield (c)	150.00 bpa
Yield Shortfall (d = b - c)	10.00 bpa

Forward Price (e)	\$4.50/bushel
Harvest Price (f)	\$4.00/bushel
Non-Delivery Fee (g)	\$0.05/bushel
Non-Delivery Price (h = f + g)	\$4.05/bushel

Forward-Priced Revenue (i = c × e)	\$675.00/acre
Non-Delivery Penalty (w = d × h)	\$40.50/acre
Revenue with Penalty (i - w)	\$634.50/acre

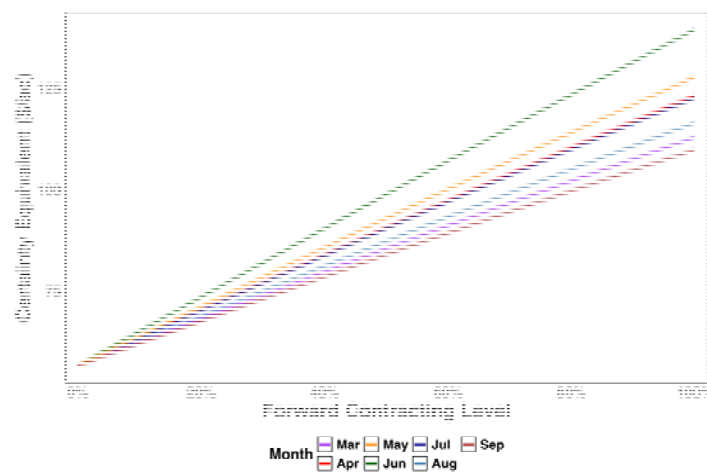
Table 2. Including Crop Insurance in the Crop Revenue Using Forward Price and Non-Delivery Penalty

Revenue with Penalty (a)	\$634.50/acre
Crop Insurance Indemnity (b)	\$121.00/acre
Revenue + Indemnity (c = a + b)	\$755.50/acre

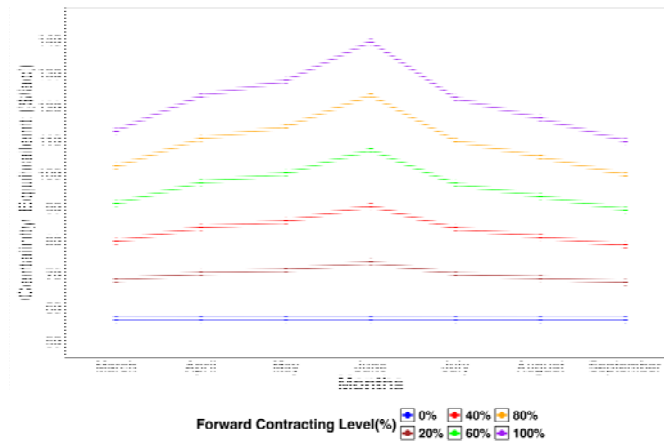
Producer Premium (w/subsidy) (d)	\$56.00/acre
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Revenue + Indemnity - Premium (c - d)	\$699.50/acre
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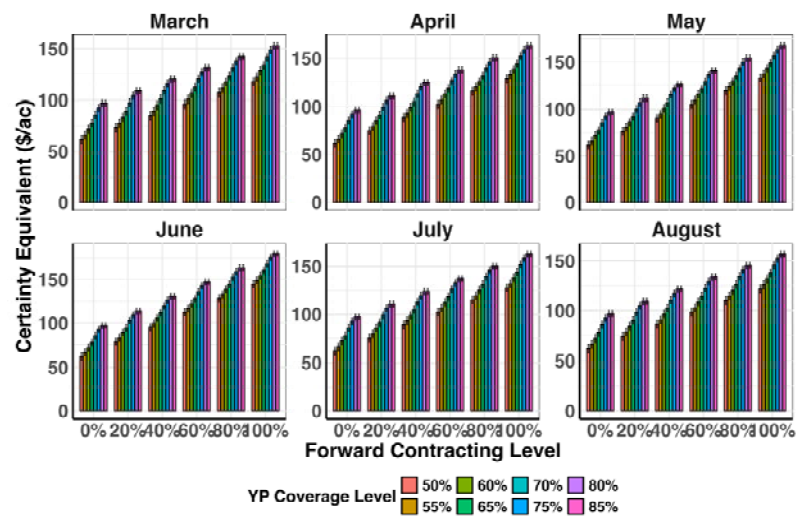
How much to forward Contract?



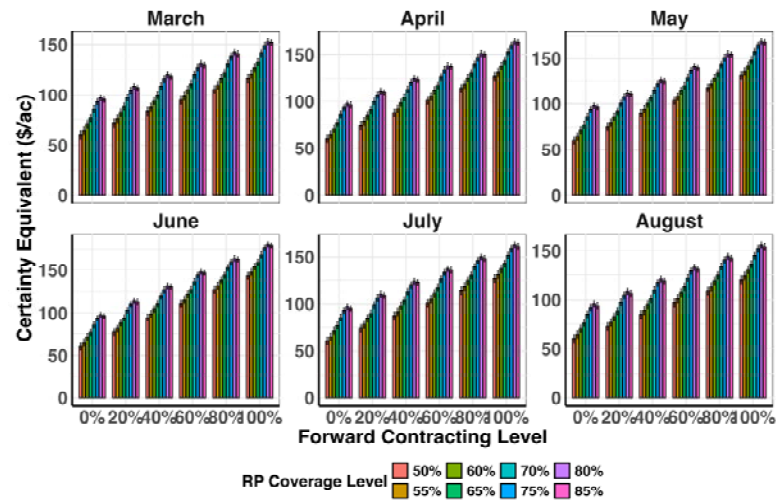
When to forward Contract?



FC with Yield Protection

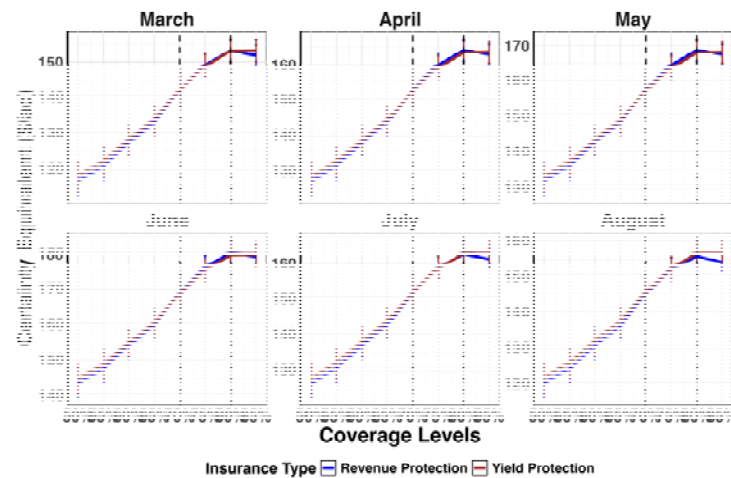


FC with Revenue Protection



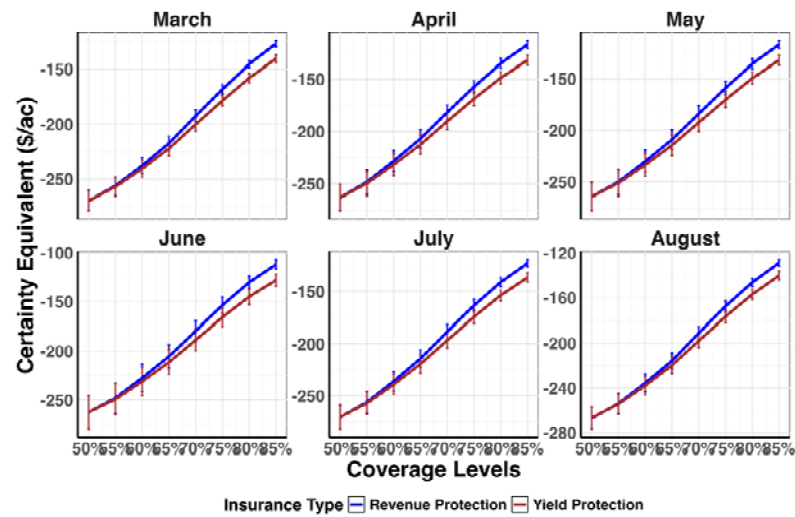
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RP v/s YP



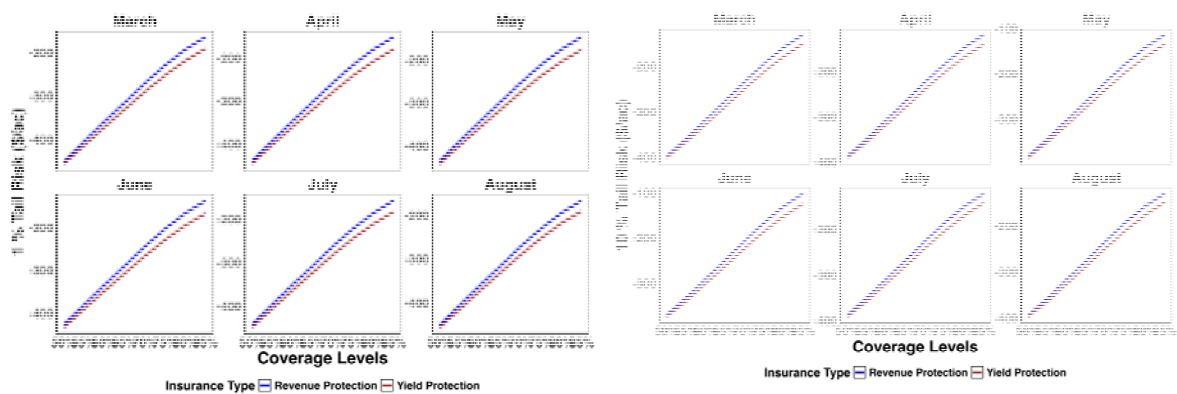
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Worse Case Scenario



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Tail Risk



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Limitations

One representative region

Results are calibrated to corn production in Arkansas County, Arkansas.

Synthetic joint distribution

The main analysis uses specified marginal distributions joined with a Gaussian copula; dependence is not empirically validated as a fully flexible structure.

Contract assumptions

Non-delivery settlement rules and the \$0.05/bu cancellation fee are modeled assumptions that may differ across elevators/contracts.

2023 environment

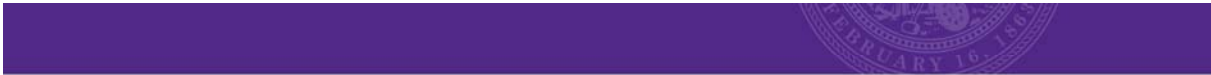
The preferred timing and price premium can change under a different futures curve, basis environment, or policy year.

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Key Takeaways

- **Best-performing strategy:** 100% forward contracting in **June** with about **80% insurance coverage**.
- **YP advantage:** Lower-cost protection when price risk is already partly managed through forward contracting.
- **RP advantage:** Better downside protection when yield is low and harvest prices rise above the forward contract price.

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Risk return of forward contracting corn with crop insurance

Chandan Bhattarai Andrew McKenzie Hunter Biram Jesse Tack Alvaro Durand-Morat

First published: 06 April 2026 | <https://doi.org/10.1002/jaa2.70040> | VIEW METRICS

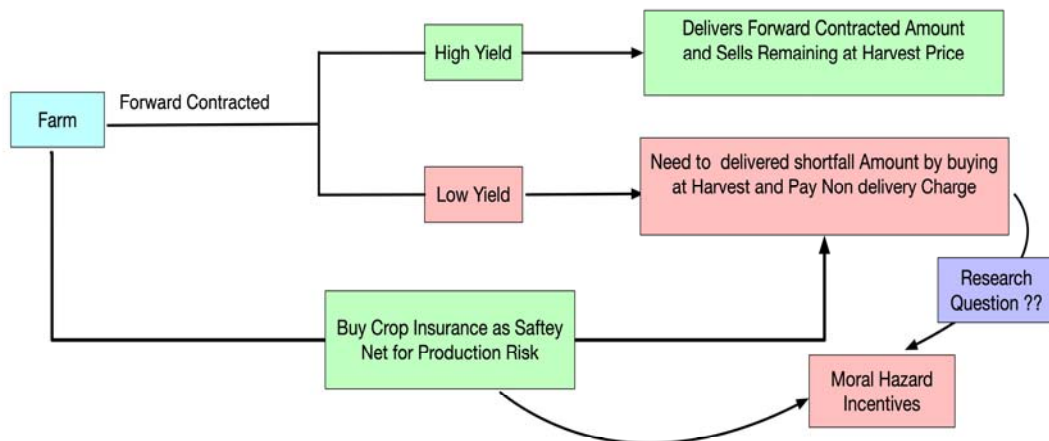
Get it @ K-State:



How can crop marketing and crop insurance go together?



Future Direction





THANK YOU!!!

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