**October 2012 - FarmOR**



As a farmer, the decisions you make when planting crops influence whether your year will end with significant profits or in bankruptcy.  As the owner of 1000 acres, you need to make the following decisions for your upcoming planting season:

1.) Plant Corn or Soybeans

2.) Buy crop insurance

3.) Use fertilizer

Corn has a profit of $190 per acre but you will lose $190 per acre if your crop fails.  Corn fertilizer costs $30,000 and Corn Insurance costs $35,000.  Soybeans have a profit of $170 per acre but you will lose $170 per acre if your crop fails.  Soybean fertilizer costs $10,000 and soybean insurance costs $20,000.

The table below shows the probability of reaping a full harvest for either crop.  For simplicity, assume that you will either successfully reap all 1000 acres or there will be total crop failure.

Probability of reaping a full harvest (%)

Buy crop insurance and use fertilizer     100%

Use fertilizer only     95%

Buy crop insurance only     90%

Do not buy insurance and do not use fertilizer     85%

**Question:  What is your expected profit when the best decisions are made?**