



difference. The research shows that under favorable conditions, with relatively high corn yields, the yield drag for second corn is lessened. But, with normal or adverse conditions there is a yield penalty for planting corn on corn. This difference varies considerably by site, year and level of fertilization. In general, a 10 to 15% yield drag appears to be common. Research has shown that even with stacked Bt and root worm traits there still is a yield difference between first and second year corn.

The relatively favorable growing conditions over the past few years may be why some feel the yield penalty is gone. Another reason may be that people are comparing corn yields beyond first and second year corn. Research shows that after the initial year the drag tends to level out. In other words, the difference between first and second year corn is much greater than the difference between more years of corn on corn.

The appropriate soybean yield is also important when comparing the returns to the rotations. Since 2000, on average, corn yields have been 3.6 times the soybean yields. From 1995, there has been 3.37 bushels of corn per bushel of soybeans, on average. Remember to use the most appropriate ratio of corn to soybeans for your situation.

In the associated decision tool, the land charge should be the cash rent or a suitable charge per acre. The remaining inputs are self-explanatory. Always be sure to use values that are appropriate for your situation.

## Calculations

Costs in the spreadsheet are calculated at two levels. Drying, hauling and fertilizer costs are estimated based on the yield and the costs given. The other variable costs are those reported in Information File A1-20 / Iowa State University Extension Publication FM 1712, Estimated Costs of Crop Production in Iowa.

The spreadsheet shows the return to management under three alternative rotations. The return to management is after all costs, including the land charge, have been subtracted.

The break-even prices presented are the corn prices that would be necessary to make the return to management equal between the corn/soybean rotation and the other rotations.

We have seen a dramatic change in the Iowa landscape over the past several decades. In spite of these changes, corn has occupied about half of our principal crop acres. There has been a dramatic increase in soybean acres and a corresponding decrease in acreage of other crops.

The percentage of Iowa land devoted to corn and soybeans has steadily increased. For the past several years over 90% of our principal crop acres have been devoted to these two crops. Corresponding to this change has been a steady move towards a more equal division between corn and soybean acres.

The future is uncertain, except for the fact there will be changes, and the changes over the next few years will dramatically influence Iowa's cropping pattern. There will be winners and losers and everyone must carefully evaluate their positions and options when assessing the opportunities the bioeconomy is offering to them.