

**MAXIMIZING PROFITS WITH NITROGEN RESPONSE CURVES:
AN INTERNET-READY COMPUTER PROGRAM
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Cold weather in the winter of 2000-2001 resulted in increased demand for natural gas. This caused the price of nitrogen fertilizer to increase approximately 65%. With low commodity prices, many farmers considered reducing nitrogen fertilizer rates on corn, cotton, and rice in 2001. Fertilizer response curves developed from field research in 1998-2000 were used to study the economic effects of reduced nitrogen rates. An Excel spreadsheet called NITROMAX was programmed to calculate marginal input cost, marginal returns and maximum profit from current prices of crops and fertilizer. The program calculates the price of nitrogen fertilizer per pound or kilogram from the price per ton of fertilizer that a users selects (ammonium nitrate, ammonium sulfate, anhydrous ammonia, urea, UAN 32% N solution, and UAN 28% N solution). Other options in the program are calculating the nitrogen rate with the most return on a dollar and determining the return on midseason N applications. Predictions for response to mid-season N are based on yield curves correlated with Minolta SPAD chlorophyll meter readings. Bar graphs are used for each crop to illustrate the predicted percent of maximum yield that a reduced nitrogen fertilizer will produce. A second program called PROFITMAX was developed to measure changes in profitability resulting in varying inputs including nitrogen fertilizer. This program allows producers to compare crops and cropping systems for different input and commodity prices. These programs will be available at <http://agebb.missouri.edu>.