

## REALISTIC YIELD GOALS

Most soil test labs provide fertilizer recommendations based on a desired yield goal and the results of the soil sample analysis. Fertilizer recommendations based on unrealistically high or low yield goals can result in reduced farm income or loss of nutrients to the environment. Determining realistic yield goals is the first and one of the most important components of a good nutrient management program. The accepted procedure for determining a realistic yield goal is to take the most recent five years of yield records for each field, drop the lowest yield and average the remaining four years of yield information. When five years of data aren't available, goals can be determined by averaging the most recent three years of data and multiplying by 1.05 or 1.10.

"Using the most recent five-year crop yields makes sure that technological advances and current management practices for specific fields or crops are taken into account in determining yield potential. Excluding the worst year helps keep catastrophic events from artificially lowering yield potential....."

"Although maximum yield potential may occasionally be limited using this approach, long-term economic analysis indicates that using past average yields as a guide to crop nitrogen needs maximizes profitability while at the same time significantly reduces the potential for nitrate contamination."<sup>1</sup>

### Example

Field 1 is in a continuous corn rotation, Field 2 is in a corn/soybean rotation and the crop to be grown will be corn, and Field 3 is in a 3 years corn, small grain seeded, 3 years hay rotation with the crop to be grown as corn.

#### Measured past yields:

<u>Field 1</u>	<u>Field 2</u>	<u>Field 3</u>
1995 125 bu./ac.(Corn)	1995 Soybeans	1995 Hay
1994 150 bu./ac.(Corn)	1994 130 bu./ac.(Corn)	1994 Hay
1993 110 bu./ac.(Corn)	1993 Soybeans	1993 Hay
1992 125 bu./ac (Corn)	1992 120 bu./ac.(Corn)	1992 Small Grain Seeded
1991 120 bu./ac.(Corn)	1991 Soybeans	1991 120 bu./ac.(Corn)
1990 140 bu./ac.(Corn)	1990 135 bu./ac.(Corn)	1990 130 bu./ac.(Corn)
1989 110 bu./ac.(Corn)	1989 Soybeans	1989 130 bu./ac.(Corn)

#### Yield goal calculations:

Field 1. (1991-1995) is  $125 + 150 + 125 + 120 = 520/4 = 130$  bu/ac.

Field 2. (1990, 1992 and 1994) is  $130 + 120 + 135 = 385/3 = 128 \times 1.05 = 134$ .

Field 3 (1989, 1990, 1991) is  $120 + 130 + 130 = 380/3 = 127 \times 1.05 = 133$  bu./ac.

1. From: **Best Management Practices for Nitrogen Use Statewide in Minnesota, AG-FO-6125-C**, 1993, MN. Ext. Serv., Gyles Randall and Michael Schmitt.

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