

## Nitrogen Data and Recommendations

PCM nitrogen fertilizer management analysis on high SPR soils shows that corn fields receiving more than 40 percent of the total nitrogen application in the fall demonstrated a Nitrogen Use Efficiency (NUE) >1.0, higher nitrogen fertilizer application rates and higher total costs than most in-season nitrogen fertilizer application systems.

This resulted in reduced operator net financial return. The most profitable nitrogen application systems applied less than 40 percent of the total nitrogen in the fall with the balance either in a preplant or sidedress application.

### NITROGEN APPLICATION DATA 2015-2019

<b>CORN IL, 2015-2019 High SPR</b>	<b>&gt;40% FALL</b>	<b>MOSTLY PRE-PLANT</b>	<b>MOSTLY SIDEDRESS</b>	<b>50% PRE/50%SIDEDRESS</b>	<b>3-WAY SPLIT</b>
<b>AVG NUE (lb N/bu grain)</b>	<b>1.01</b>	<b>0.93</b>	<b>0.92</b>	<b>0.91</b>	<b>0.94</b>
<i>Yield per acre</i>	<b>219</b>	<b>218</b>	<b>220</b>	<b>221</b>	<b>230</b>
<i># Fields</i>	<b>732</b>	<b>492</b>	<b>612</b>	<b>228</b>	<b>52</b>
<b>GROSS REVENUE</b>	<b>\$789</b>	<b>\$785</b>	<b>\$791</b>	<b>\$793</b>	<b>\$827</b>
N fertilizer	\$84	\$78	\$76	\$84	\$95
Other direct costs*	\$320	\$286	\$307	\$311	\$338
<b>TOTAL DIRECT COSTS</b>	<b>\$404</b>	<b>\$364</b>	<b>\$383</b>	<b>\$395</b>	<b>\$433</b>
Field Work	\$16	\$16	\$16	\$18	\$19
Other power costs**	\$97	\$89	\$94	\$95	\$93
<b>TOTAL POWER COSTS</b>	<b>\$113</b>	<b>\$105</b>	<b>\$110</b>	<b>\$113</b>	<b>\$112</b>
<b>OVERHEAD COSTS</b>	<b>\$37</b>	<b>\$37</b>	<b>\$37</b>	<b>\$37</b>	<b>\$37</b>
<b>TOTAL NON-LAND COSTS</b>	<b>\$554</b>	<b>\$506</b>	<b>\$529</b>	<b>\$545</b>	<b>\$582</b>
<b>OPERATOR &amp; LAND RETURN</b>	<b>\$235</b>	<b>\$279</b>	<b>\$261</b>	<b>\$248</b>	<b>\$246</b>

\*Mostly Fall = >40% of total N application rate applied in fall; Mostly PrePlant=More than 50% of total N applied at or before planting in spring; Mostly Sidedress=More than 50% of total N applied after planting; 50% Pre/50% Sidedress = Total N application is split roughly evenly between PrePlant and SideDress; 3-Way Split=<40% total N is Fall-applied and balance is roughly evenly applied between Pre-Plant/Sidedress

<b>Corn - Hi SPR N Rate (lbs per acre)</b>	<b>No. of Fields</b>	<b>SPR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>Average 2015-19</b>	<b>Operator and Land Return - 2015-19</b>
<b>Less than 150</b>	41	139	154	222	212	216	198	200	\$221
<b>151-175</b>	114	140	191	229	212	231	205	213	\$270
<b>176 to 200</b>	382	140	205	226	220	232	207	218	\$264
<b>201 to 225</b>	574	140	207	223	222	234	211	219	\$252
<b>Over 225</b>	336	139	210	233	233	241	217	227	\$242