## New way to decide how much nitrogen proposed

This fall, there were some articles in national farm publications about a revolution in nitrogen recommendations for corn, based on research by soil scientists at the University of Illinois.

Illinois agronomists say that basing nitrogen rates for corn on a combination of yield goal (proven yields) and soybean credits results in inaccurate recommendations.

They say that nitrogen recommendations for corn should be based instead on a measure of how much nitrogen the soil can provide during the growing season, which is a function primarily of organic matter amounts, carryover nitrogen, previous crop residue levels, plant population, soil acidity, or pH, and soil phosphorus and potassium levels.



in 102 on-farm studies from 1990 to 2003, and they compared the results with yields and nitrogen rates based Great Plains universities, nitrogen on the "proven yield" method.

This raises the question of whether nitrogen recommendations used in Kansas and elsewhere are inaccurate and need to be revised. The answer is no, said Dale Leikam, nutrient management specialist.

They have been correlating corn by the Illinois team to develop niyields and nitrogen rates using these trogen recommendations for corn sample is available. Soil pH, soil

tensively by other universities, including Iowa State University, the University of Wisconsin and the University of Minnesota. Unfortunately, none of these universities

factors in trials throughout Illinois have been able to reproduce the results reported fro Illinois.

At Kansas State and most other recommendations are based on historical information relating yield goal, soil organic matter content, two-foot profile nitrogen soil test level, the amount of manure applied, the tillage system employed and the previous crop.

A default value is assigned for The new lab procedure evaluated organic matter content and the profile nitrogen soil test level if no soil

and plant population are not used in K-State nitrogen recommendations. The price of nitrogen and price of corn are other possible factors that theoretically could be used in making nitrogen recommendations but are not included in the K-State approach because of wide year-to-year and field-to-field variability.

sometimes not related to nitrogen rates but are instead the result of greater-than-expected mineralization of soil organic matter, residual nitrate-nitrogen in the soil profile, manure applications and other sources of soil nitrogen.

The Illinois research also found nitrogen mineralization from soil organic matter and manure applications to affect required nitrogen application rates for various yield levels.

However, the new Illinois nitrogen soil test was not as effective in unusually wet and warm conditions cated by the University of Illinois predicting the optimal nitrogen rate

have been tested ex- phosphorus and potassium level before the season begins as was hoped.

Nitrogen recommendations are basically predictions and are subject to all the uncertainties that are associated with making predictions. We do not know in advance how warm and moist the soil will be late into the fall, early in the spring or during the growing season.

All of these factors are involved It is true that high corn yields are in soil organic matter nitrogen mineralization rates. Therefore, nitrogen recommendation rates are based on an average of many yield correlation tests conducted over many years throughout the state, on many soil types with various organic matter levels, soil nitrogen levels, crop rotations and tillage systems.

> When these research results are pooled, it is possible to offer a best estimate of the optimal nitrogen rate based on yield goals and the other ommendation process should be factors mentioned previously. If occur before and during the grow-

ing season, the amount of nitrogen the soil provides may be unusually high and crop response to applied nitrogen may be less than expected.

Conversely, if the growing season is unusually cool and/or dry, the amount of nitrogen the soil provides may be less than normal for a given organic matter content, and the resulting nitrogen recommendations may be too low.

Overall, the nitrogen recommendation model used by K-State and other universities provides an average of research results over many years and locations and has proven to be as good as possible as a predictor.

New correlation research for adjusting the nitrogen recommendation is done continually. But K-State and other land-grant universities believe there is no reason at this point to think that the nitrogen reccompletely overhauled, as indiwork.

Non-surgical treatment

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## Colby college has more students

## By Patty Decker

Colby Free Press The Colby Community College spring-semester enrollment is up 25 students from last year, college trustees learned at a meeting last week.

"This is good news," interim President Skip Sharp told the board. Total enrollment for the semester. which started Jan. 11, is 949, he said, compared to 924 students last vear.

In addition to the "head count" increase, he said, the total credit hours taught went up as well.

"This year's figure of 12,642 is an increase of almost 7 percent over last year's 11,841 credit hours," Sharp said.

The increase was attributed to good retention from the fall semester and many transfers from fouryear universities, he said.

concerted effort to help students peer review; Linda Davis-

succeed," Sharp said. "That com- Stephens, for part-time EduKan/ mitment to service and to students increased our retention rate."

He also said goals set by everyone at the college in keeping current students and attracting new students had met with success.

'The transfer students told us they left the larger universities to have better one-on-one instruction and to have a more affordable education," he said. "I believe we have a very positive attitude on campus and that makes students feel good and want to stay."

Sharp said head count and credit hours will continue to increase as enrollments are completed at the school's 25 outreach centers in the 14-county northwest Kansas service area.

The trustees also approved contracts at the meeting.

Cathy Gordon, a full-time in-"Our faculty and staff make a structor, was approved for EduKan,

cultural anthropology; Vu Phan, part-time fit lab monitor; and Darrin Bell, a pay increase as full-time night shift supervisor.





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