

# Kansas Soil Fertility and Nutrient Management Timeline

U.S. Potash Search To Be Independent Of German Potash Monopoly (1910-1914)  
Potassium (K) Discovered In Nebraska Sandhills. Major K Source During War Years.

The Use of Potash in the Improvement of Manure  
The use of potash in the improvement of manure is a subject of great importance to the farmer. It is well known that manure is the best fertilizer for the soil, and that the use of potash in the improvement of manure is one of the best ways of increasing the fertility of the soil. The use of potash in the improvement of manure is a subject of great importance to the farmer. It is well known that manure is the best fertilizer for the soil, and that the use of potash in the improvement of manure is one of the best ways of increasing the fertility of the soil.

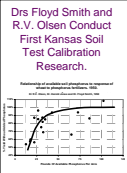
Potash Production Initiated From Underground Deposits Near Carlsbad, New Mexico In 1931.

First U.S. Ammonia Synthesis Plant Built (1917-1919) In Sheffield, AL For Government Munitions.

E. O. Cleavelger Uses In-Field Test (Truog Test) For Assessing Soil Acidity.

Franklin Roosevelt Signs The Act Creating The Tennessee Valley Authority On May 18, 1933. As Part Of It's Mission, The National Fertilizer Development Center (NFDC) Was Created To Develop New Technologies For The Fertilizer Industry.

Kansas Fertilizer Research Report Publication Initiated In 1948. The Annual Meeting With Industry That This Publication Was Initially Developed For Eventually Led To The Formation Of The Kansas Fertilizer & Chemical Institute (now the Kansas Ag Retailers Association)



Consumer Cooperative Association (CCA, later Farmland Industries) Dedicates It's First Nitrogen Fertilizer Plant In Lawrence, KS (1954).

Peak Of 60 County Soil Testing Labs In Kansas In 1955. 31,500 Samples Tested In 1953-54.

Polyphosphates Introduced To The Fertilizer Industry By The TVA-NFDC In 1957.

Cooperative Research With Feedyards On Effects Of Manure Application On Crop Yield And Soil Properties. (Murphy, Murphy, Powers and Manges)

Farmland Industries Nitrogen Fertilizer Plant Near Dodge City, KS Comes On Line (1968).

Liming Source Research Conducted (Whitney, Murphy).

Extensive Research On Very Low pH Soils And Aluminum Toxicity (Whitney and Lamond)

The "Pipe" or "T" Reactor Intro By The TVA-NFDC (1972) Is Still Essential For Modern Liquid Phosphate Fertilizers.

NRCS Emphasis On Nutrient Management Results In The Development Of Kansas Nutrient Management Plans And A Kansas P Site Index for USDA Farm Programs. (Pierzynski, Davis, Frees, Devlin and Leikam)



Introduction Of GPS And GIS Systems Results In Extensive Research On Various Aspects Of Using The Technology To Improve Nutrient Management. (Havlin, Klutenberg, Taylor, Schmidt and Staggendorf)

SOIL FERTILITY  
The soil is the most important factor in the production of crops. It is the source of the water and nutrients that the plants need to grow. The soil is also the home of many of the organisms that help to keep the soil fertile. The soil is a complex system, and its fertility is determined by many factors, including the amount of water and nutrients it contains, the amount of organic matter it has, and the amount of air it has. The soil is a resource that we must take care of, and we must use it wisely to ensure that it remains fertile for many years to come.

Phosphorus (P) Responses Identified In Kansas

Lime (pH) Response Identified In Kansas

INTERPRETING THE RESULTS OF SOIL TESTS  
The results of a soil test are a valuable tool for the farmer. They can help to determine the amount of nutrients in the soil, and they can help to determine the amount of lime that is needed to raise the soil pH. The results of a soil test are a valuable tool for the farmer. They can help to determine the amount of nutrients in the soil, and they can help to determine the amount of lime that is needed to raise the soil pH.

Throckmorton and Duley (1932) ..... "The system of farming, since settlement of the State, has been a system of taking from the soil all that it would give and in most cases of returning little or nothing to help maintain fertility..."

Nitrogen (N) Responses Identified In Kansas

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Potassium (K) Responses Identified In Kansas

By 1949 Soil Testing Labs Established In Brown, Bourbon, Labette and Crawford Counties.

Extensive Research On Ammonia Retention Patterns And Equipment Setup In 1960's and 1970's (Smith, Murphy, Swallow)

First County Soil Testing Lab Established In Cowley Ag Extension Council and County Agent George Gerber.

Dr. R.V. Olsen Provided Direction And Support For Procedures.

Sulfur (S), Boron (B), Zinc (Zn) and Iron (Fe) Responses Identified In Kansas

Expanded Irrigation Led To Frequent Zinc Deficiencies. Extensive Research Led To Adoption Of DTPA Zn and Fe Soil Test (Ellis, Murphy, Herron, Whitney)

Polyphosphate Soil Reaction Products Identified In Early 1970's (Ellis).

Soil Profile Nitrogen Test (nitrate-N + ammonium-N) Adopted For Kansas In 1970 (Herron, Thompson, Sunderman, Murphy, Whitney and Gwin)

Sevi-Tech Laboratory Opened In Dodge City, Kansas In 1975 And Provides Soil Test Analysis To Many Kansas Producers.

Dual N-P Applications Extensively Studied In 1970's (Murphy, Whitney, Kissel)

Extensive Research On Proper Management Of Urea Containing Fertilizers (Kissel)

First Summer Field Diagnostic School Cooperatively Conducted At The North Agronomy Farm By KSU Agronomy Extension and Farmland Industries (1986)

Chloride (Cl) Responses Identified In Kansas (Lamond, Bonczkowski)

Clean Water Act Has Resulted In The Development Of Management Practices To Minimize The Potential For P Movement To Surface Waters. Best Management Practices Based On Research Have Been Developed (Devlin, Pierzynski, McVay and Jansen)

KSU Soil Test Interpretations Refined To Provide For Nutrient Management Flexibility Of Crop Producers (Leikam, Lamond, Mengel)

1905 1915 1925 1935 1945 1955 1965 1975 1985 1995 2005