A BRIEF HISTORY OF TURF FERTILIZERS

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Turf fertilizers are one of the most variable tools available to the Turf Manager and his crew. The philosophy is to have all elements adequate, then to vary the nitrogen for the extent of turf growth desired.

One of the first noted turf fertilizers is Milorganite. O. J. Noer was the agronomist for a lifetime until 1960. The product is made in a patented process. It is usually 6 percent nitrogen. It has been the backbone of turf fertilization programs for many fine golf courses. It has been the emergency route turned to when trouble abounds. It has sponsored the most turf education throughout North America. I have great admiration for the product and for the company that produces it. Their agronomists have been friends to all in turf.

The O. M. Scott program was initiated using soybean meal about 1934. In 1958 the trionized formulation of vermiculite became the standard for light weight fertilizers. In 1968 the Pro-Turf line of methylene ureas became the standard. Their eighty technical sales reps work closely with their customers. I am told that about 70 percent of their sales are fertilizer purchases and products. The lawn care market is huge. That represents some 15,00 outlets and prepares some 7 million lawn bulletins.

The ureaforms developed beginning in 1954. They were researched 1930-39, and basic research was published in 1946. DuPont built a plant for production of Uramite. That plant was obsolesced, and in 1967 production was stopped.

Borden's 38 was just a part of a broad adhesives program. Their production of ureaforms was used exclusively in blending, and by 1977 their production was terminated.

Nitroform production was begun about 1954. Hercules purchased a company, added the blue marker to the product. They developed a powder blue sizing, and today up to 20 percent of their production is powder blue, much of that for the lawn care industry.

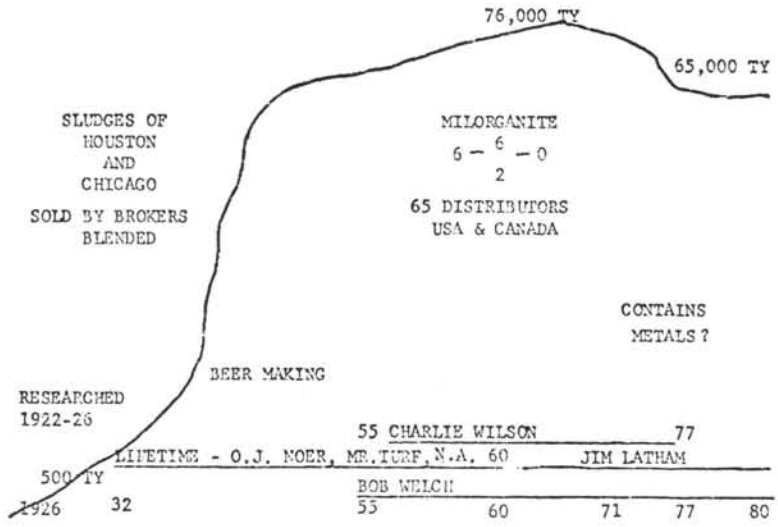
IBDU (isobutyl diurea) was introduced from Japan in 1967. Its uniqueness is related to its chemical composition and actual particle size as distributed. Since 1968 import has expanded to 16,000 tons per year currently. Some believe that utilization will level off at this figure.

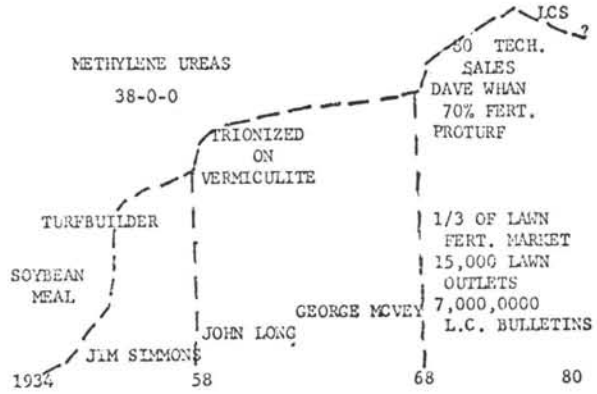
The sulfur coated urea may carry from 20-30 percent sulfur. There are also formulations that are partially coated in plastic. The TVA research lead to a pilot plant beginning in 1972. The C.I.L. Company in Canada began production in 1975. In 1978 Lakeshore licensed the TVA information and are producing 36,000 tons per year.

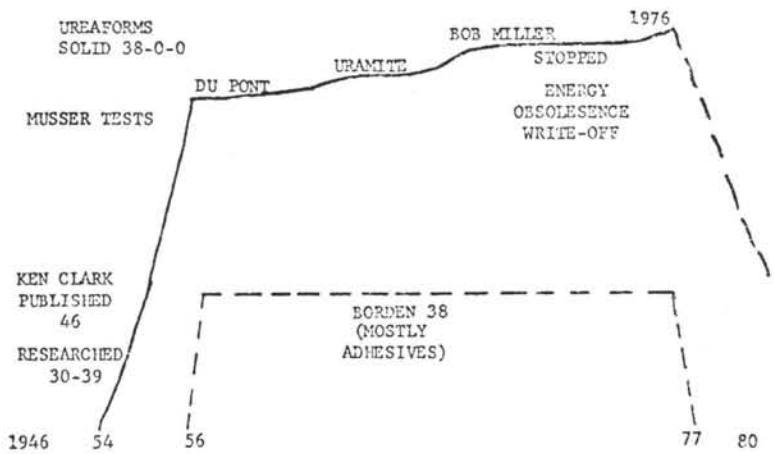
This brief history does not include the soluble forms of nitrogen. One of the most common is urea, and its production has cycled up and down as new plants came on stream and markets expanded.

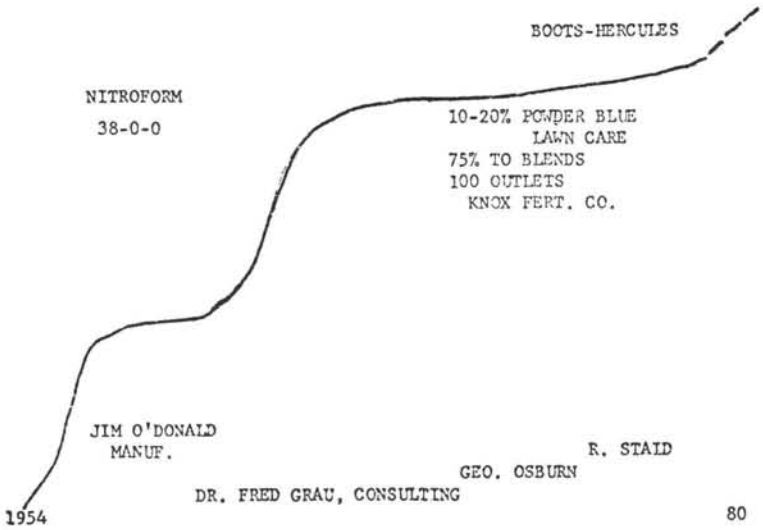
When one realizes that the cost of the nitrogen is 80-90 percent of the Turf Manager's fertilizer budget it becomes obvious that the nitrogen source, production, and distribution are all-important to Turf Managers. We realize that many people prefer to use complete fertilizers as a means of assuring adequacy of availability. Frankly, there are economies to be secured if the high priced nitrogen sources are applied as separates. Based on the cost of nitrogen, lawn care cmpanies may be paying anywhere from 25c to $1.00+ for each pound of nitrogen.

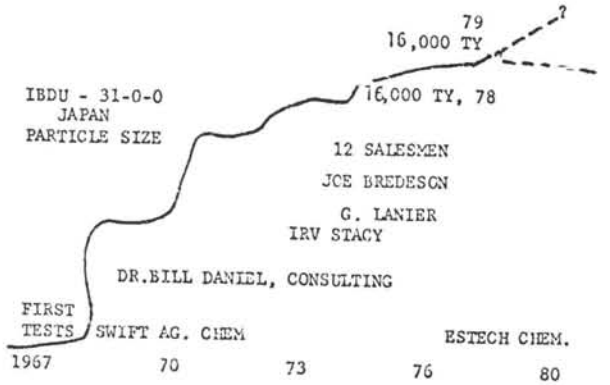
In summary, the sources of nitrogen that companies advertize, merchandise and promote and their educational programs have been geared to the technology of improved turfgrass performance.

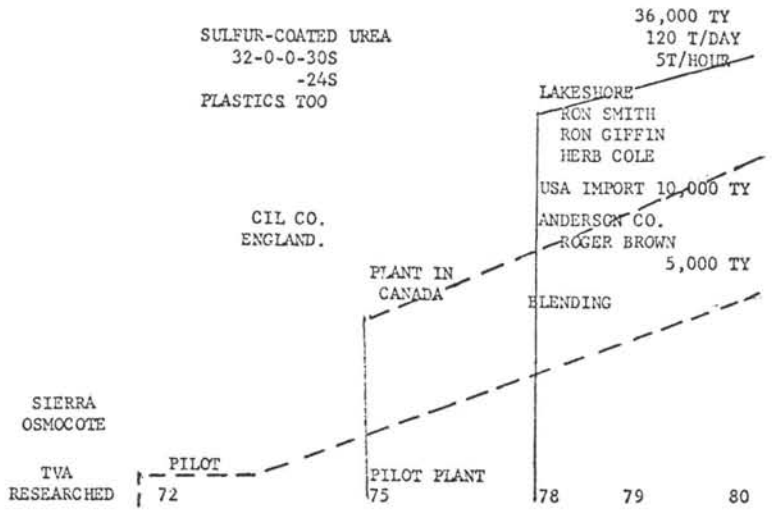

76,000 TY
65,000 TY
SLUDGES OF HOUSTON AND CHICAGO
SOLD BY BROKERS BLENDED
MILORGANITE
6 – 6 – 0
2
65 DISTRIBUTORS USA & CANADA
CONTAINS METALS?
BEER MAKING
RESEARCHED 1922-26
55 CHARLIE WILSON 77
LIFETIME - O.J. NOER, MR. TURF, N.A. 60
JIM LATHAM
500 TY
BOB WELCH
1926 32 55 60 71 77 80


METHYLENE UREAS
38-0-0
JCS
50 TECH. SALES
DAVE WHAN
70% FERT.
PROTURF
TRIONIZED ON VERMICULITE
TURFBUILDER
1/3 OF LAWN FERT. MARKET
15,000 LAWN OUTLETS
SOYBEAN MEAL
GEORGE MOVEY
7,000,0000 L.C. BULLETINS
JOHN LONG
JIM SIMMONS
1934 58 68 80


UREAFORMS SOLID 38-0-0
BOB MILLER
1976
URAMITE
STOPPED
DU PONT
ENERGY OBSOLESENCE WRITE-OFF
MUSSER TESTS
KEN CLARK PUBLISHED 46
RESEARCHED 30-39
BORDEN 38 (MOSTLY ADHESIVES)
1946 54 56 77 80


BOOTS-HERCULES
NITROFORM
38-0-0
10-20% POWDER BLUE
LAWN CARE
75% TO BLENDS
100 OUTLETS
KNOX FERT. CO.
JIM O'DONALD
MANUF.
R. STAID
GEO. OSBURN
DR. FRED GRAU, CONSULTING
1954
80


79
16,000 TY
?
IBDU - 31-0-0
JAPAN
PARTICLE SIZE
16,000 TY, 78
12 SALESMEN
JOE BREDESON
G. LANIER
IRV STACY
DR.BILL DANIEL, CONSULTING
FIRST
TESTS
SWIFT AG. CHEM
ESTECH CHEM.
1967
70
73
76
80


36,000 TY
120 T/DAY
5T/HOUR
SULFUR-COATED UREA
32-0-0-30S
-24S
PLASTICS TOO
LAKESHORE
RON SMITH
RON GIFFIN
HERB COLE
USA IMPORT 10,000 TY
CIL CO.
ENGLAND.
ANDERSON CO.
ROGER BROWN
5,000 TY
PLANT IN
CANADA
BLENDING
SIERRA
OSMOCOTE
PILOT
TVA
RESEARCHED
PILOT PLANT
72
75
78
79
80

1980 TURF FERTILIZERS

NITROGEN	NO PHOS.	HIGH, LOW, MED.	P & K SIMILAR
6-4-0	16-0-8	10-3-7	12-12-12
21-0-0-24S	18-0-9	12-4-8	15-15-15
31-0-0	20-0-16	16-4-8	20-20-20
32-0-0-24S	28-0-4	19-5-9	10- 4- 4
32-0-0-30S	13-0-44	24-4-8	10- 4- 6
33-0-0		24-4-12	16- 8- 8
38-0-0		25-5-10	20- 5- 5
45-0-0		27-3-9	32- 5- 3
		30-3-10	
		34-3-7	