COMPARISON OF SLOW-RELEASE N SOURCES – COOL-SEASON TURFGRASS RESPONSE UNDER FIELD CONDITIONS

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OBJECTIVES

1. TO DETERMINE THE COMPARATIVE INFLUENCE OF THE NEW METHYLENE UREA MATERIALS ON THE GROWTH AND QUALITY RESPONSE OF RYEGRASS GROWING UNDER FIELD FAIRWAY CONDITIONS

2. TO DETERMINE THE N SUPPLYING CAPACITY OF THESE NEW N SOURCES RELATIVE TO COMMERCIALLY AVAILABLE SLOW-RELEASE N\ SOURCES

EXPERIMENTAL

1. TIFSPORT BERMUDAGRASS WAS OVERSEEDED WITH PERENNIAL RYEGRASS AND MAINTAINED AT A FAIRWAY MOWING HEIGHT OF 0.5 INCHES.

2. TREATMENTS WERE APPLIED TO PLOTS (6 BY 9 FT) ARRANGED IN A RANDOMIZED COMPLETE BLOCK DESIGN AND REPLICATED THREE TIMES.

3. MATERIALS WERE APPLIED AT THE EQUIVALENT RATE OF 2 LBS N PER 1000 SQ FT EVERY 90 DAYS.

4. CLIPPINGS FOR GROWTH AND N UPTAKE ESTIMATES WERE TAKEN EVERY 30 DAYS.

5. VISUAL RATINGS (1 TO 9 SCALE) WERE TAKEN EVERY 15 DAYS.

TREATMENTS

1. SG39BSV
2. SG39BMV
3. SG39LSB
4. SG39LMB
5. SG28L
6. NITROFORM
7. NUTRALENE
8. CORON
9. POLYON
10. SCU
11. IBDU
12. AS
13. UAN + KNO_3
14. CONTROL

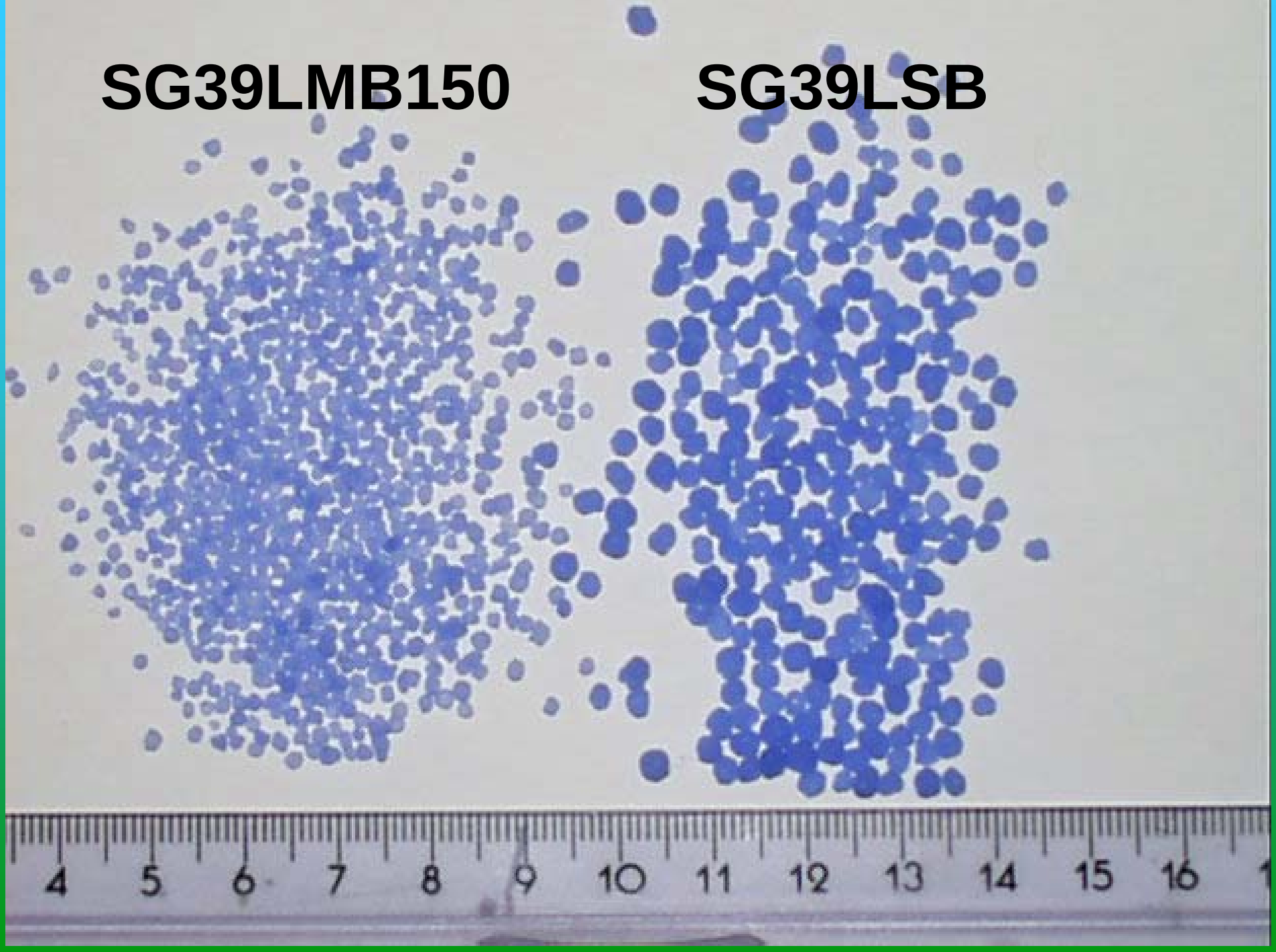
P AND K WERE APPLIED AS CSP AND KCL AT 0.25 AND 1.0 LBS/M/90 D

SAZOLENE MATERIALS

Sazolene 39G Balanced standard size green	SG39BSV
Sazolene 39G Balanced Microgranular green	SG39BMV
Sazolene 39G Longer standard size blue	SG39LSB
Sazolene 39G Longer Microgranular green	SG39LMB
Sazolene SC (Liquid)	SL28S

PROPERTIES OF SAZOLENE MATERIALS

	N	Urea	MU	CWSN	CWIN	HWSN	HWIN	AI
	---------- % ----------							
SG39BSV	39	3.5	35.5	15.3	23.7	27.3	11.7	51
Nutralene	40	6.0	34.0	26.0	14.0	34.0	6.0	57
SG39LSB	39	2.3	36.7	11.5	27.5	23.5	15.5	44
Nitroform	38	4.5	33.5	11.4	26.6	24.7	13.3	50


SG39LMB150
SG39LSB
4
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15
16

FIG. 1.

Growth Rate of Overseeded Ryegrass as Influenced by N Source under Field Conditions (30 DAA, 2 lbsN/1000/90d)

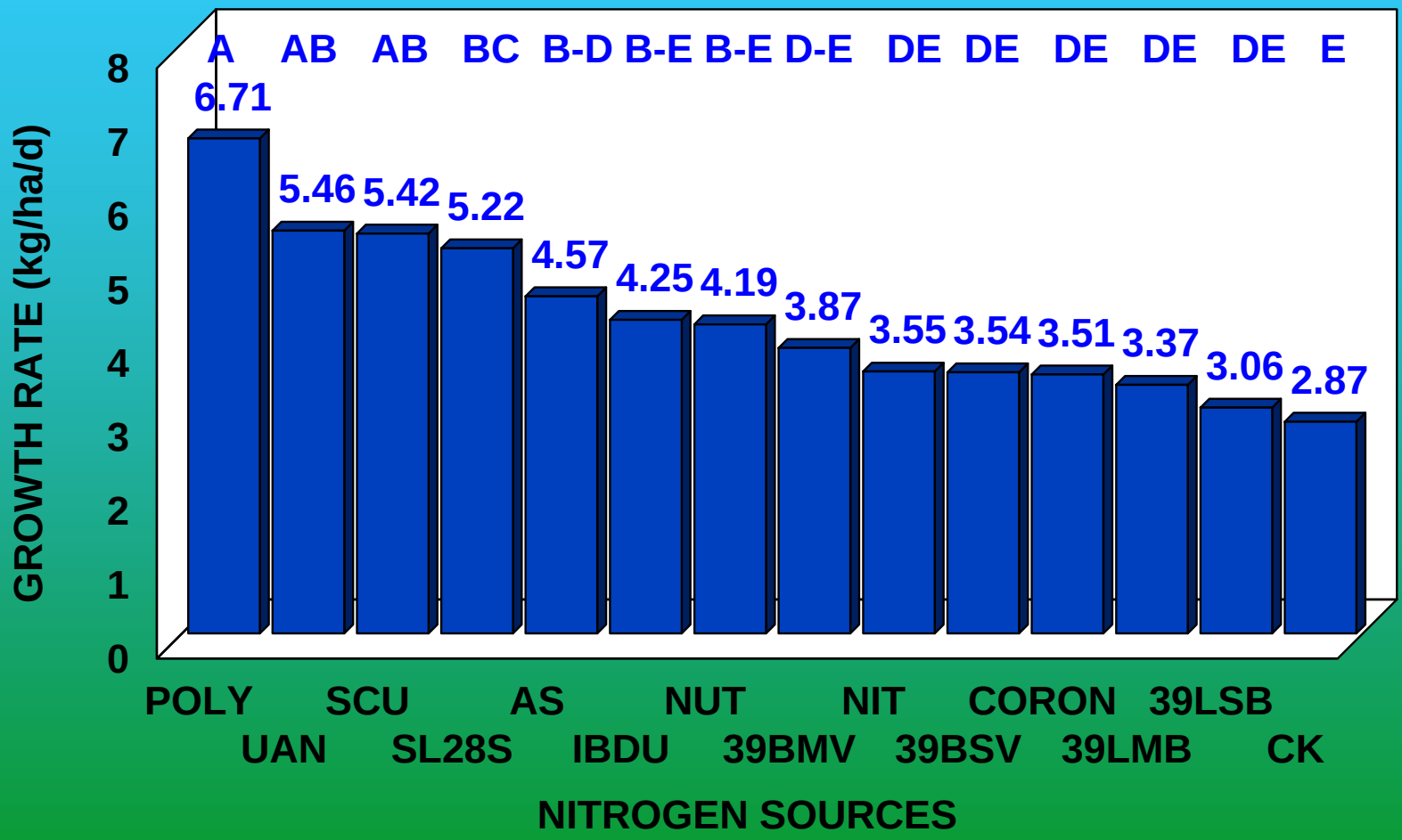


FIG. 2.

Growth Rate of Overseeded Ryegrass as Influenced by N Source under Field Conditions (180 DAA, 2 lbs N/1000/90d)

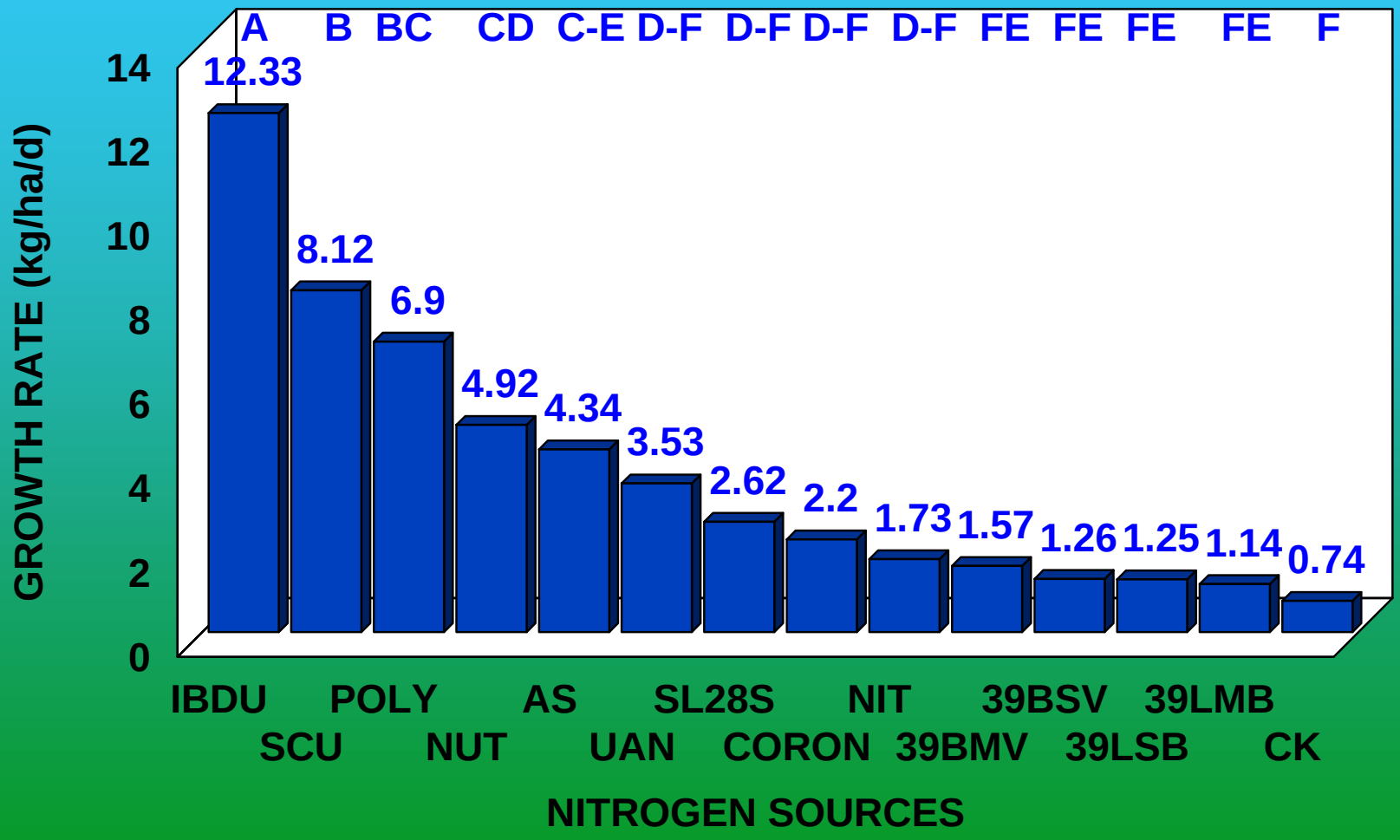


FIG. 3.

Mean Growth Rate of Overseeded Ryegrass as Influenced by N Source under Field Conditions (2 lbs N/1000 sq ft/90d)

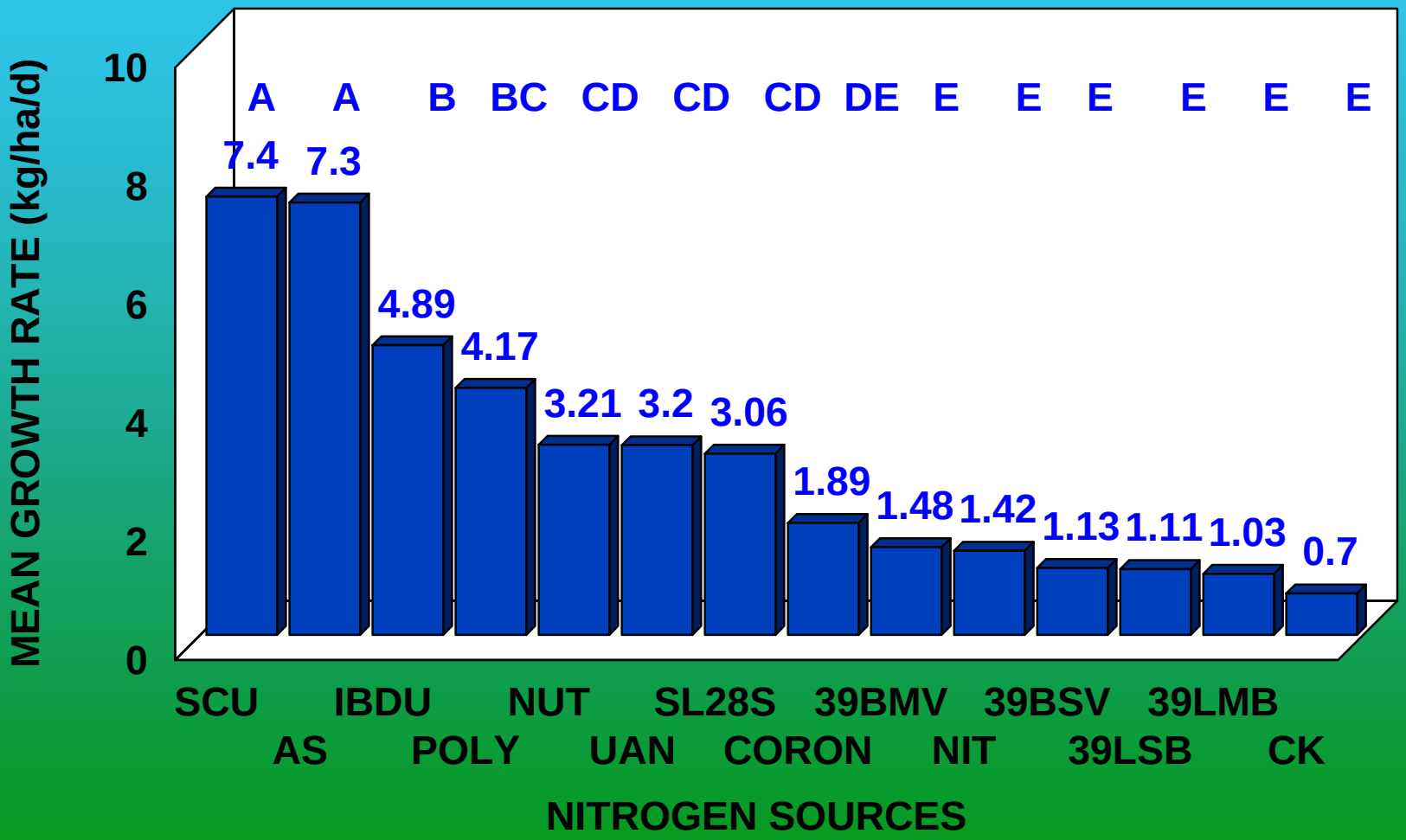


FIG. 4.

Percent N of Overseeded Ryegrass as Influenced by N Source under Field Conditions (30 DAA, 2 lbs N/1000/90 d)

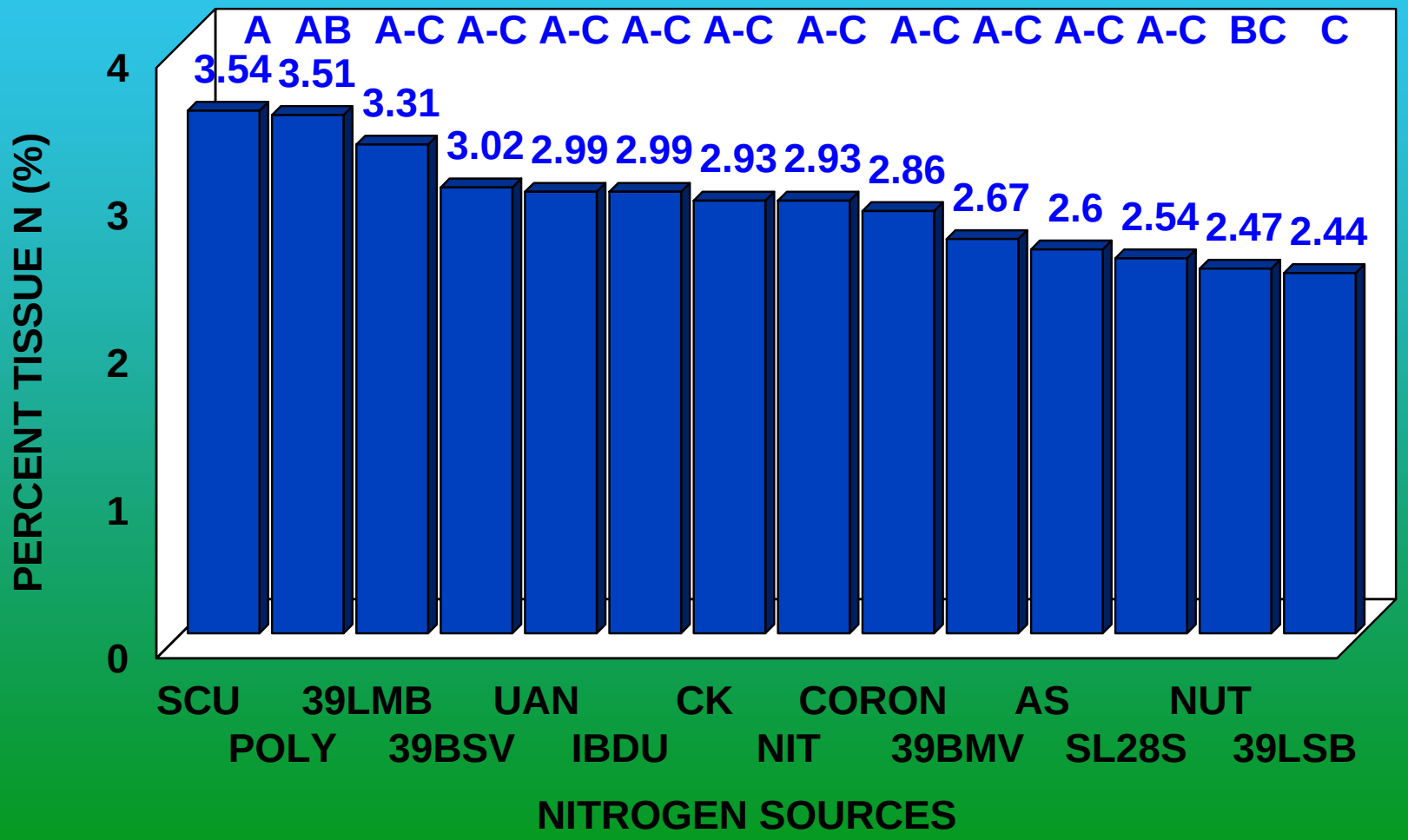


FIG. 5.

Percent N of Overseeded Ryegrass as Influenced by N Source under Field Conditions (180 DAA, 2 lbs N/1000/90d)

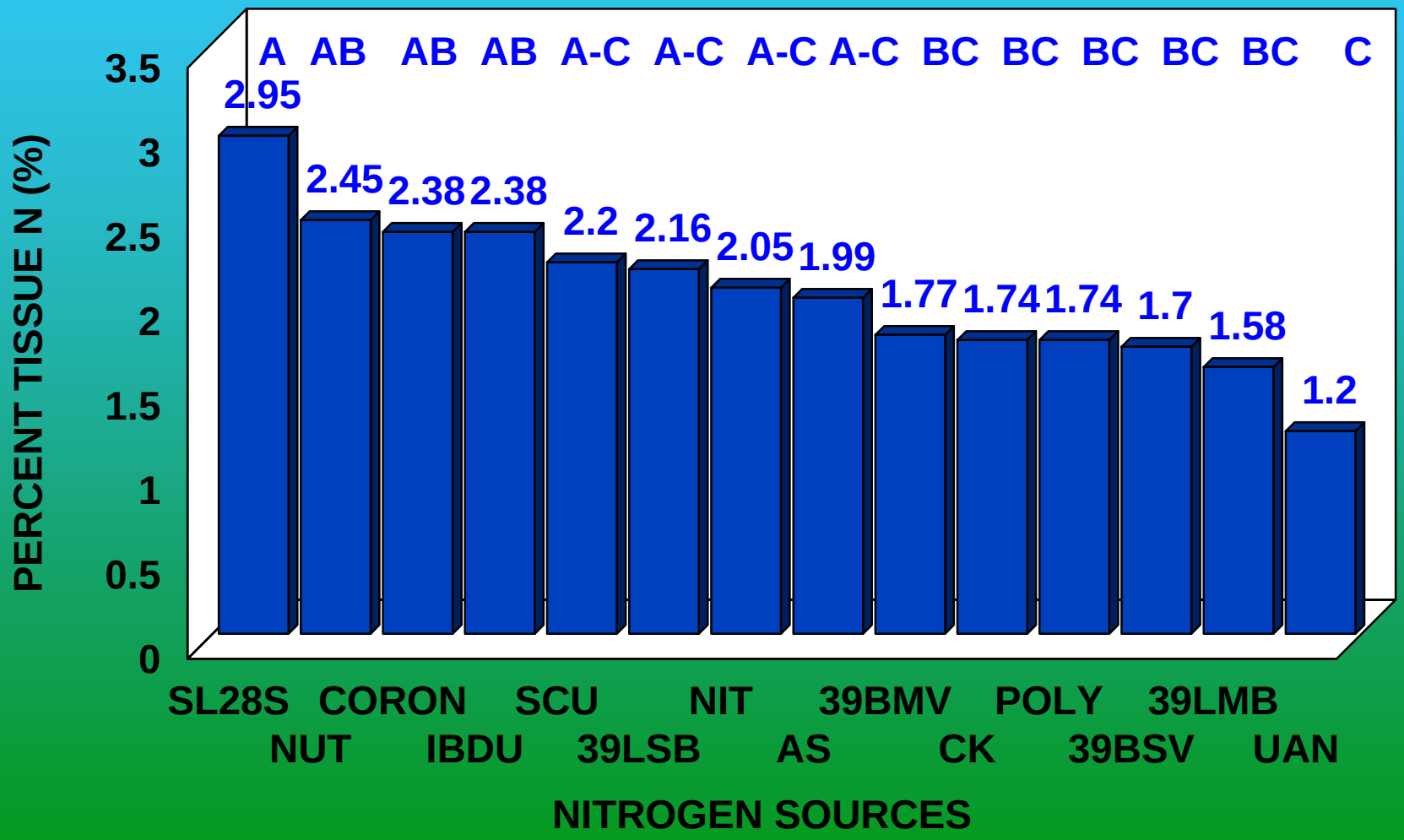


FIG. 6.

Total N Uptake by Overseeded Ryegrass as Influenced by N Source under Field Conditions (180 d, 2 lbs N/1000/90 d)

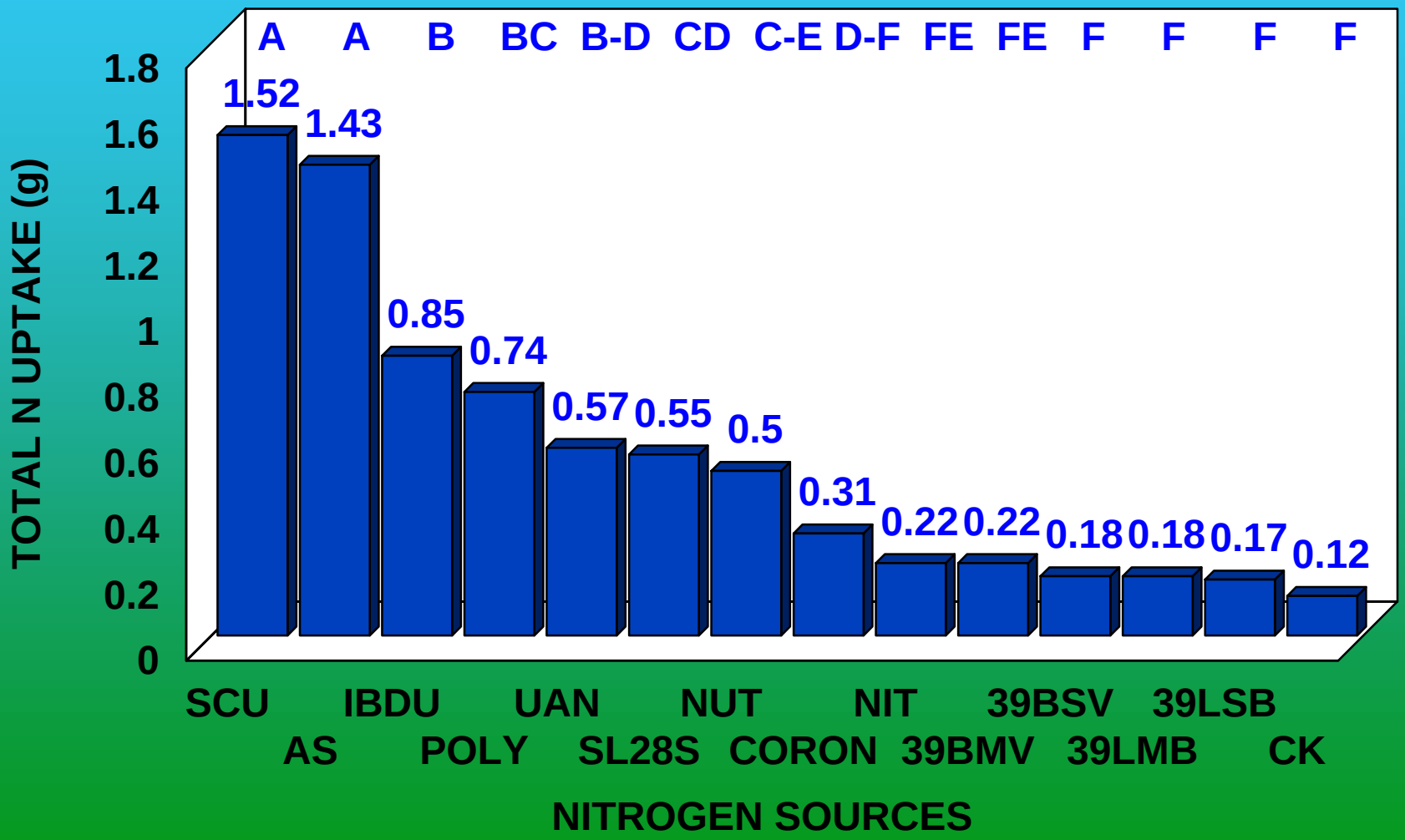


FIG. 7.

Visual Rating of Overseeded Ryegrass as Influenced by N Source under Field Conditions (30 DAA, 2 lbs N/1000/90 d)

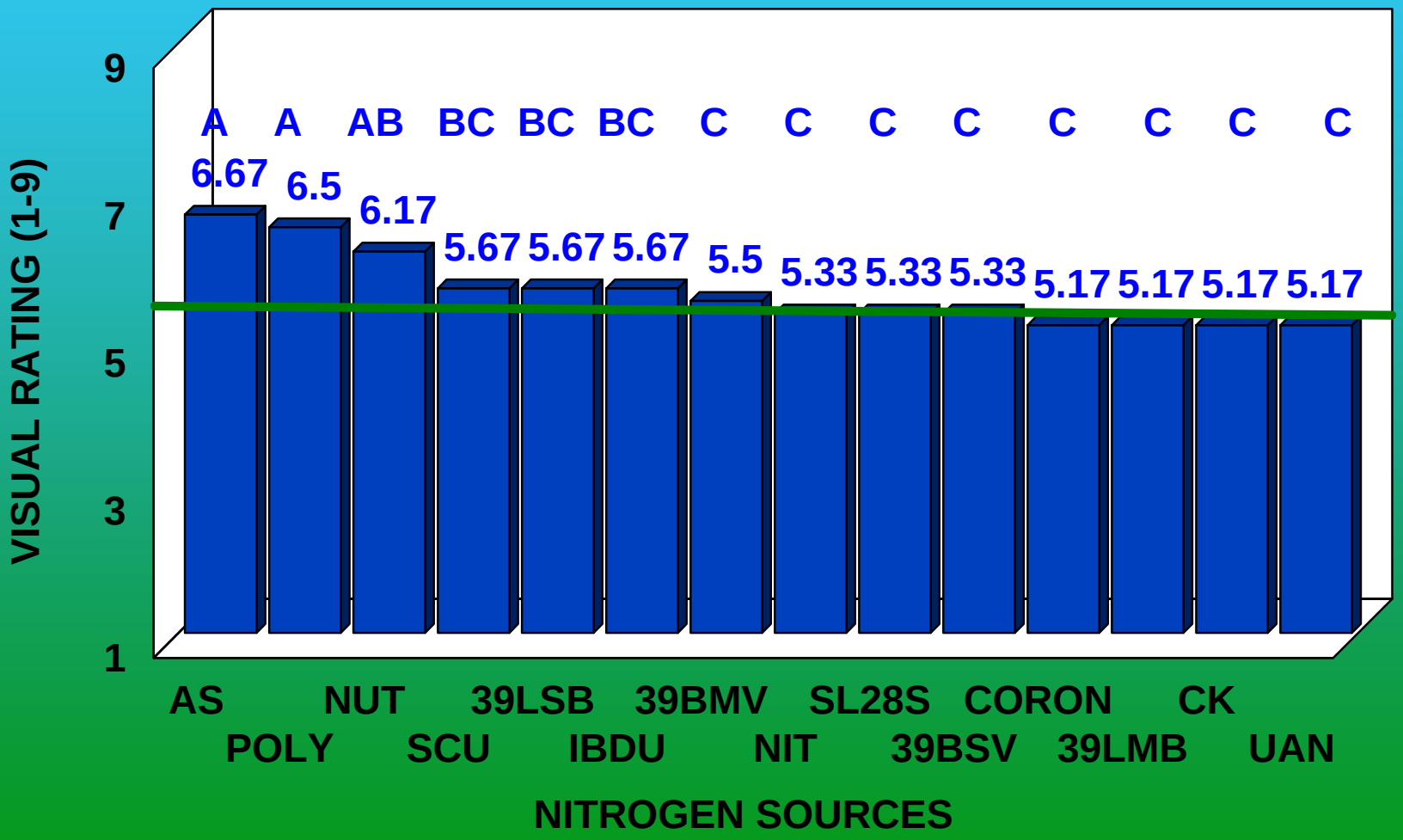


FIG. 8.

Visual Rating of Overseeded Ryegrass as Influenced by N Source under Field Conditions (90 DAA, 2 lbs N/1000/90d)

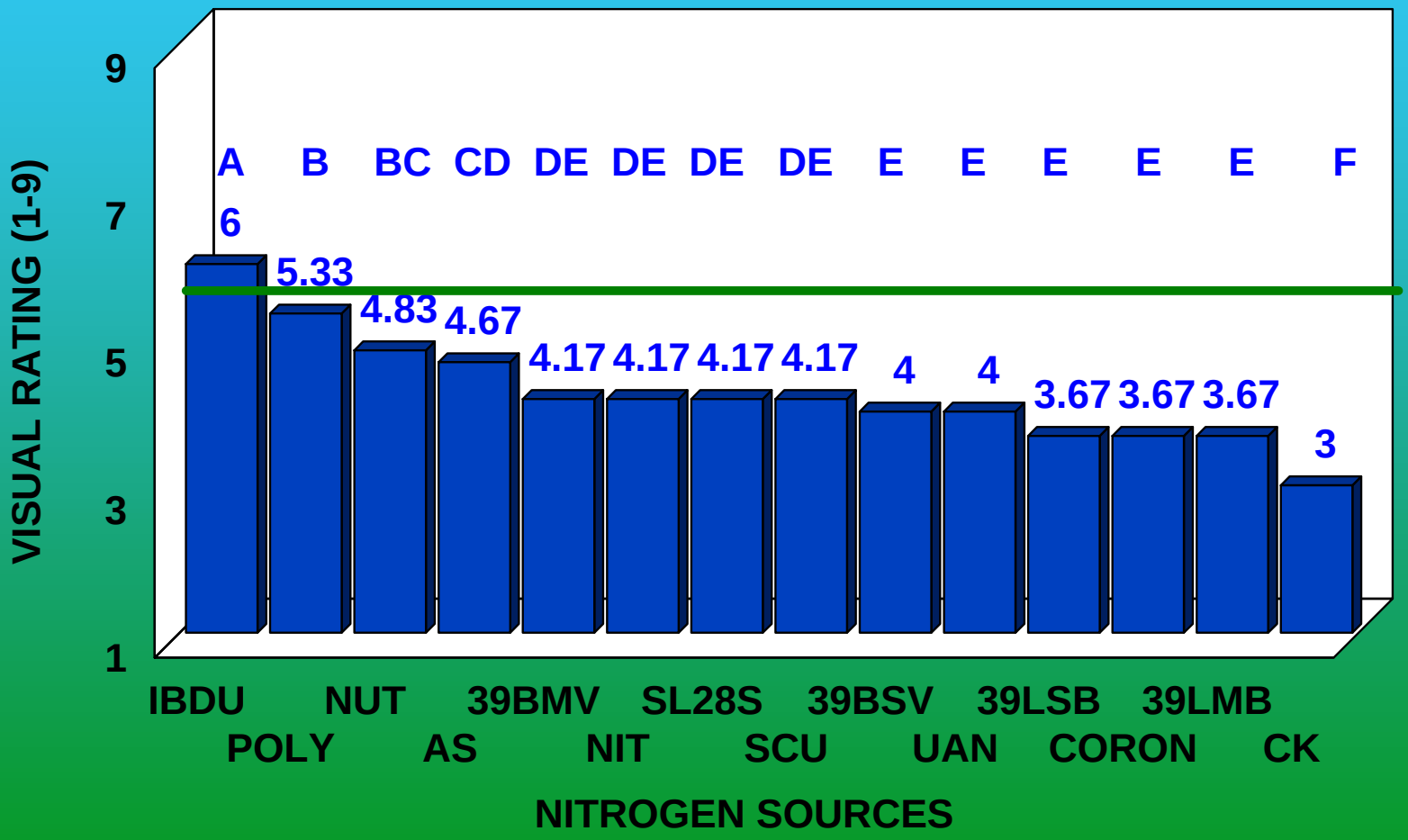


FIG. 9.

Visual Rating of Overseeded Ryegrass as Influenced by N Source under Field Conditions (180 DAA, 2 lbsN/1000/90d)

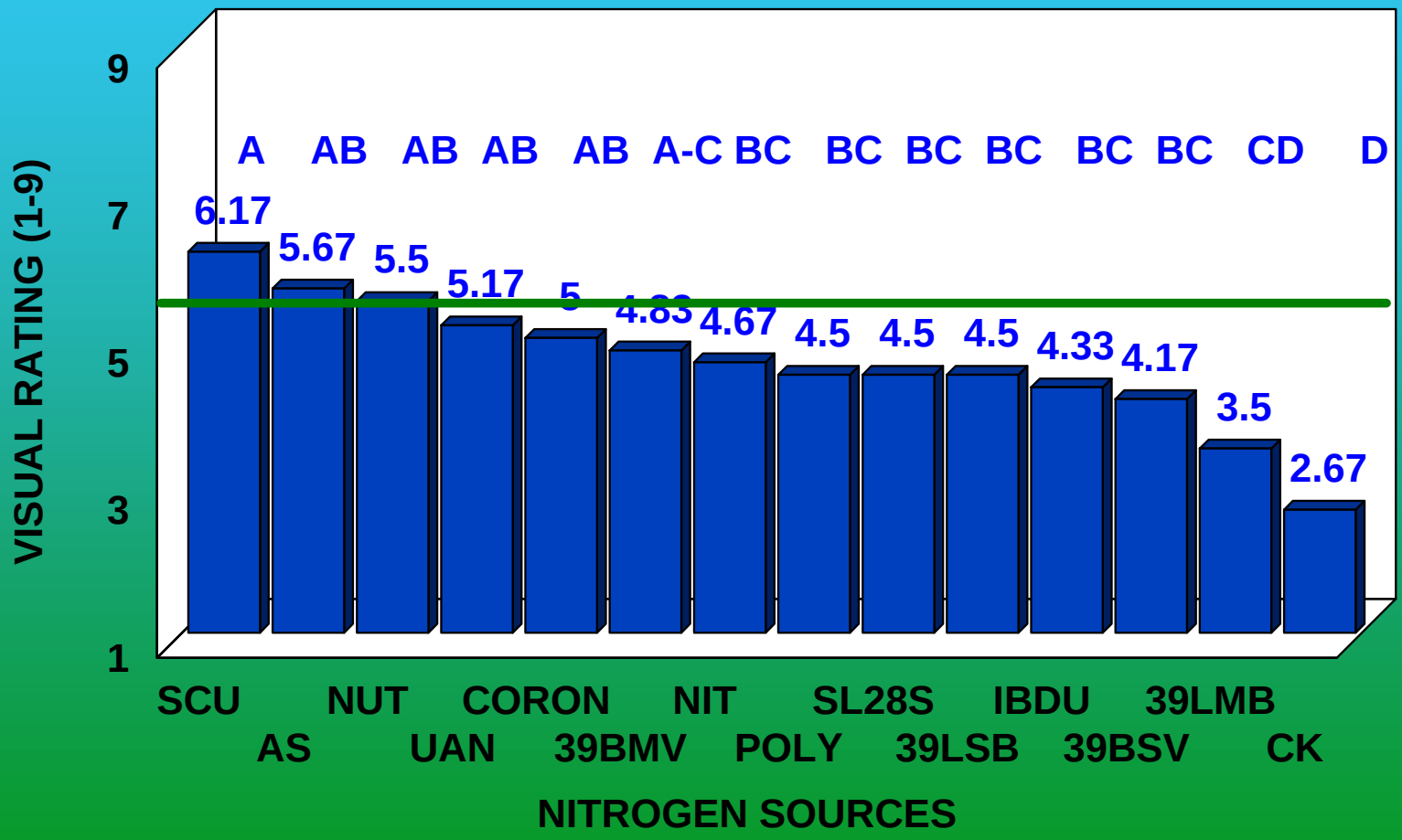


FIG. 10.

Mean Visual Rating of Overseeded Ryegrass as Influenced by N Source under Field Conditions (2x 90d, 2 lbsN/1000/90d)

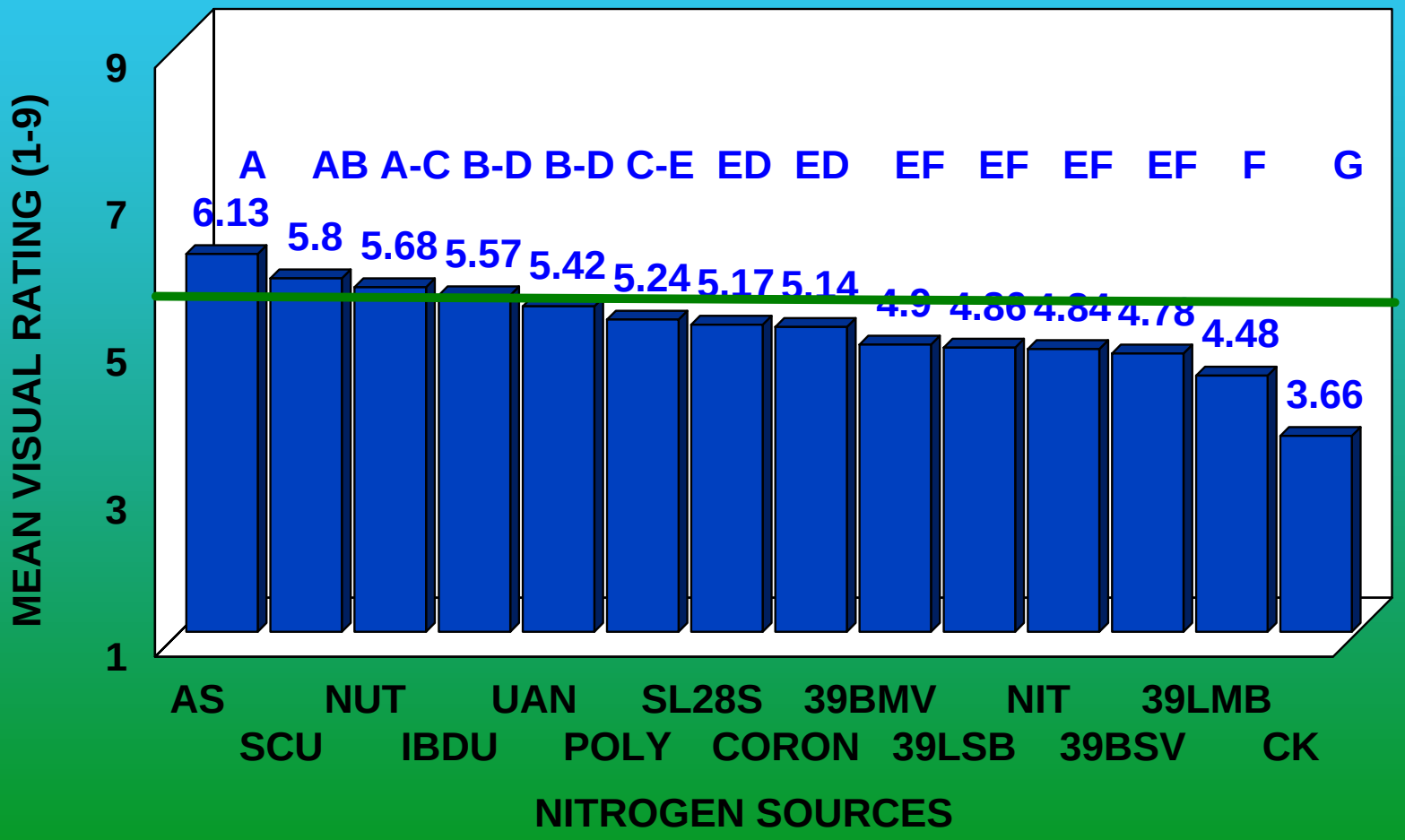


FIG. 11.

Chlorophyll Reading for Overseeded Ryegrass as Influenced by N Source under Field Conditions(180DAA, 2lbsN/1000/90d)

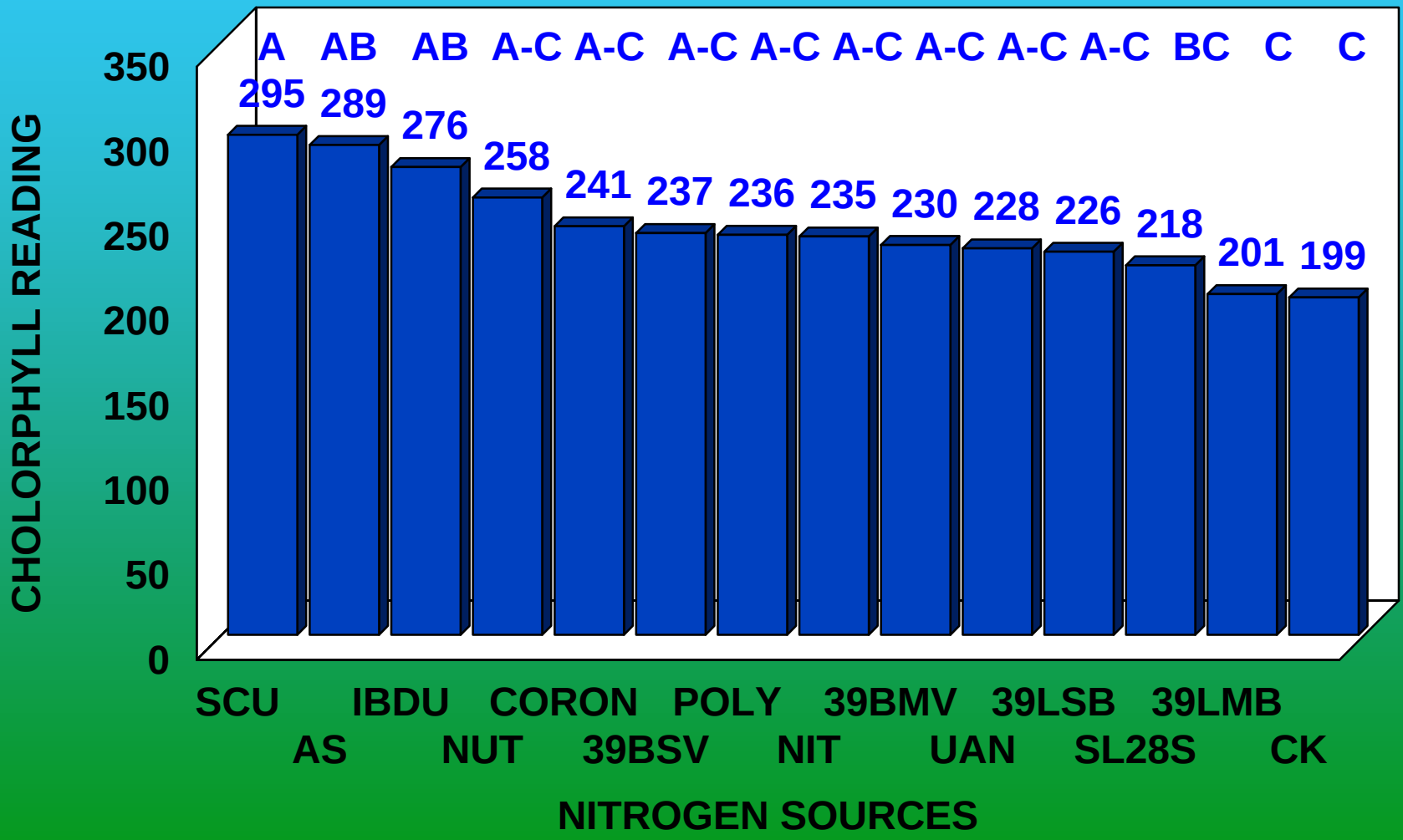


FIG. 12.

MEAN GROWTH RATE OF TIFSPORT BERMUDAGRASS AS INFLUENCED BY N SOURCE UNDER FIELD CONDITIONS

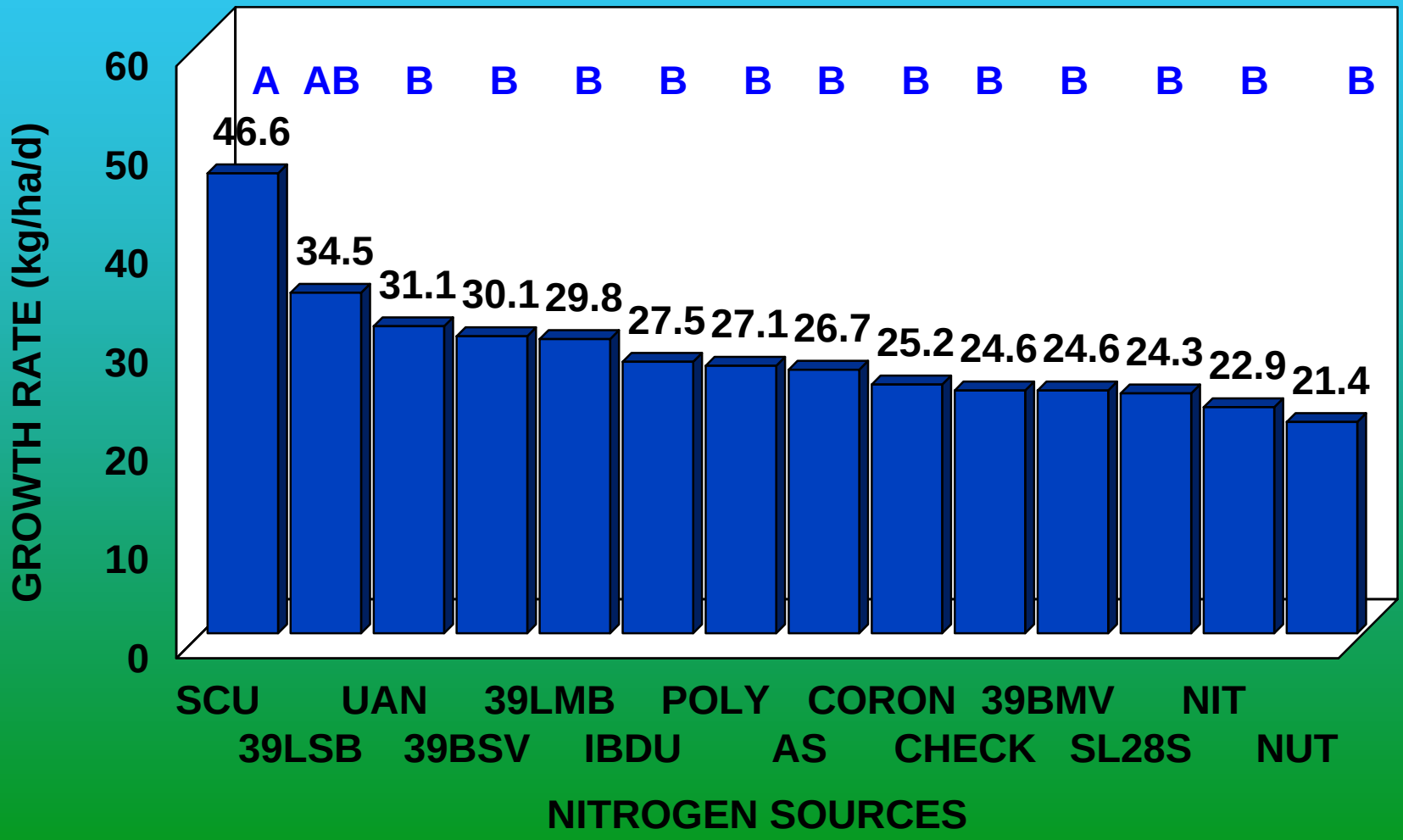


FIG. 13.

TOTAL N UPTAKE BY TIFSPORT BERMUDAGRASS AS INFLUENCED BY N SOURCE UNDER FIELD CONDITIONS

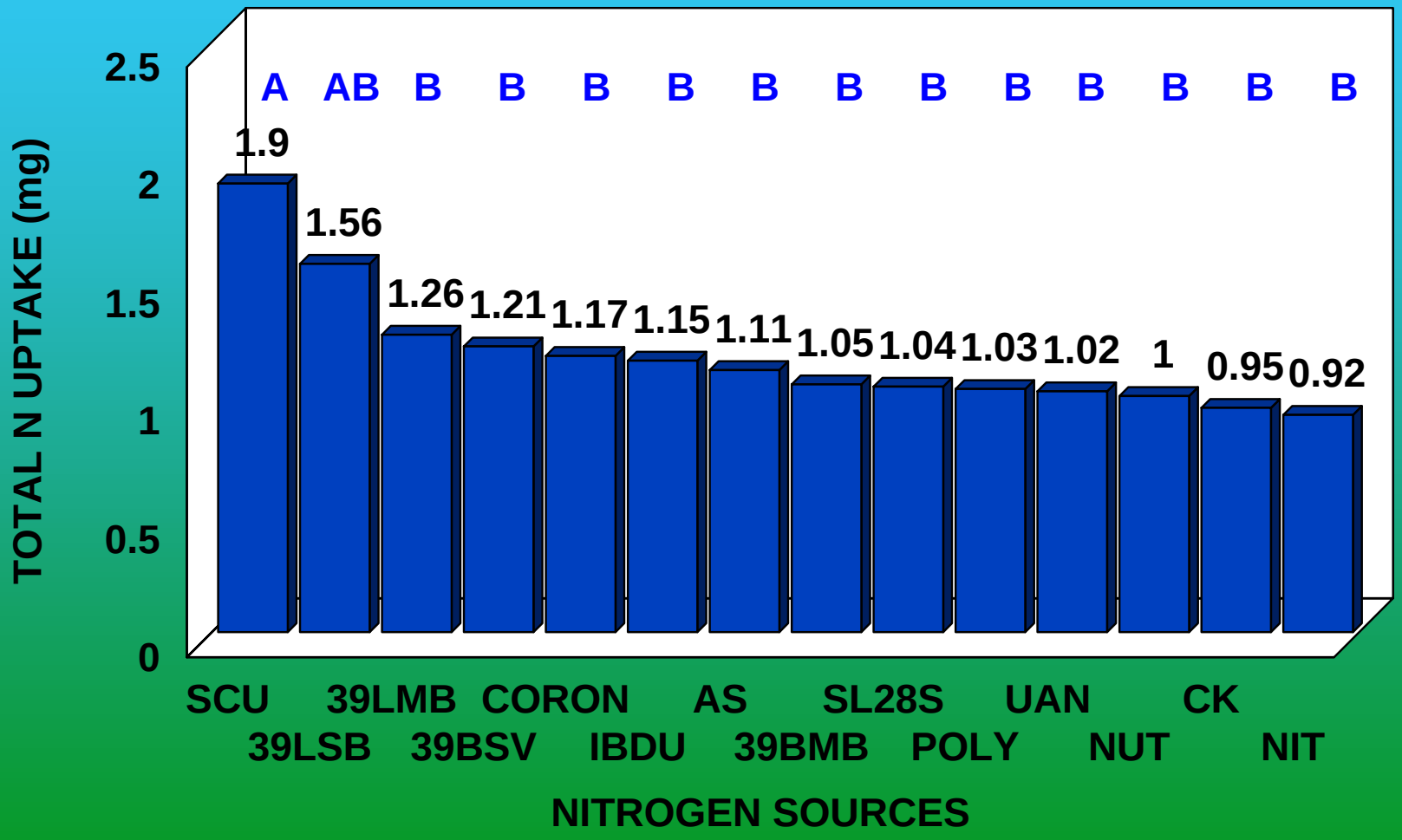
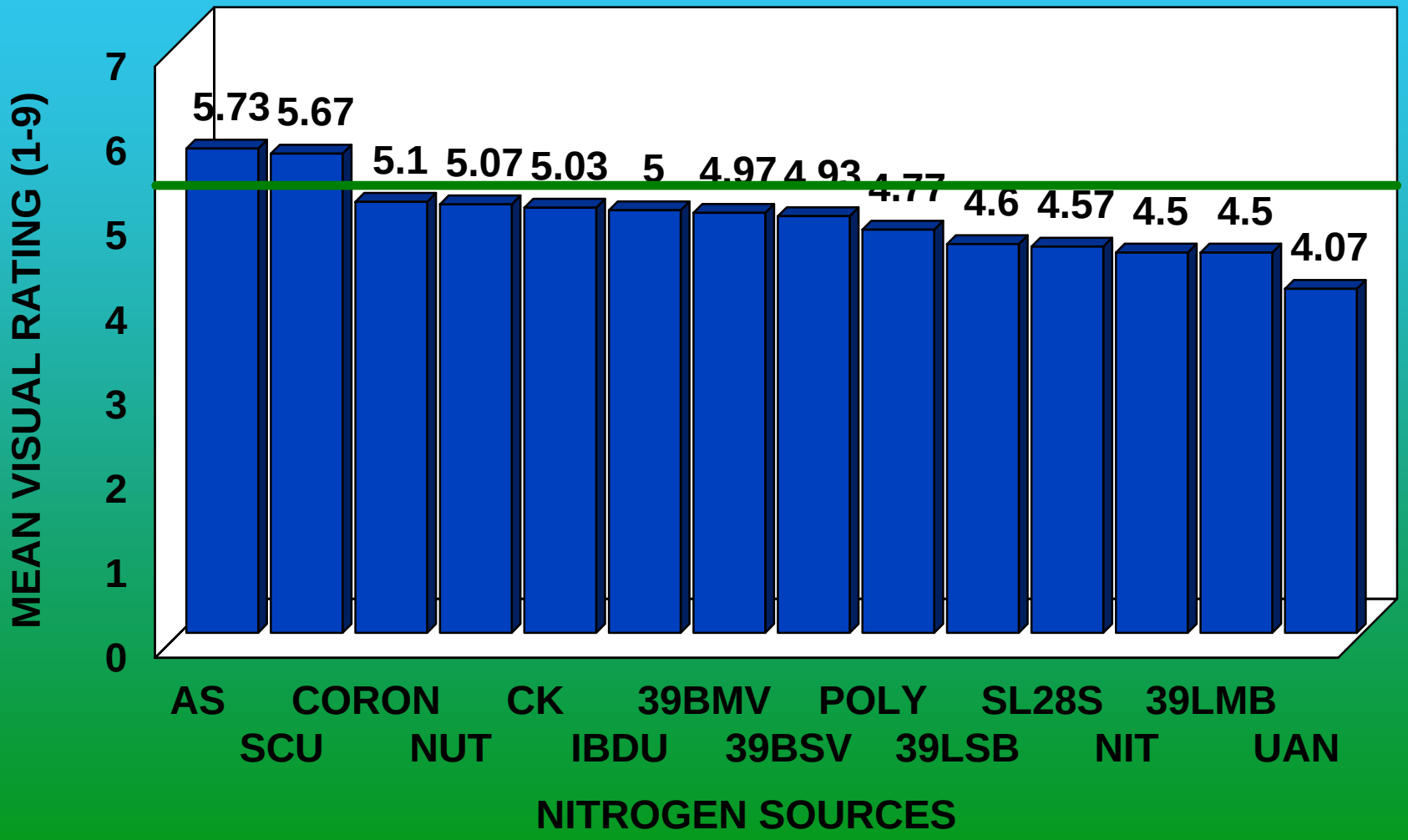


FIG. 14.

MEAN VISUAL RATING OF TIFSPORT BERMUDAGRASS AS INFLUENCED BY N SOURCE UNDER FIELD CONDITIONS



CONCLUSIONS

1. NITROGEN RELEASE RATE FROM METHYLENE UREA IS SLOWED BY COOLWEATHER CONDITIONS.

2. WHEN APPLIED AT THE EQUIVALENT N RATE OF 2 LBS PER 1000 SQ FT PER 90 DAYS METHYLENE UREAS MAY NOT PRODUCE SUFFICIENT GROWTH TO SUSTAIN ACCEPTABLE QUALITY

3. IT DOES APPEAR THAT THE LIQUID METHYLENE UREA SL28S IS CAPABLE FO PRODUCING ADEQUATE GROWTH AND N AVAILABILITY DURING THE FIRST 30 DAYS AFTER APPLICATION, BUT THIS RESPONSE MAY NOT BE SUSTAINED FOR 90 DAYS.

4. IN FUTURE STUDIES, N RATE AND TIMING COULD BE ADJUSTED TO BETTER POSITION THE MU MATERIALS


GO GATORS !!!