



## 2022-2023 PERENNIAL RYEGRASS UTRISHA TRIAL

### OVERVIEW

Comparing perennial ryegrass yield response under two management systems; 1) N alone vs. 2) N with the addition of Utrisha N at a rate of 5oz/a applied at the early development stage.

- 78% of air is Nitrogen as N<sub>2</sub>, which is not available to plants
- Nitrogen is the most limiting plant nutrient
- Utrisha N contains a symbiotic bacteria that colonizes the leaf, fixes airborne nitrogen, and converts it to NH<sub>4</sub> which is available for plants
- Applications made 4/15/2022 and 5/11/2023

### SUMMARY

Utrisha N applied at 5oz/a increased yield by an average of 70.4 lbs/a (p-value 0.006). Yield increases are independent of the total N application rate.



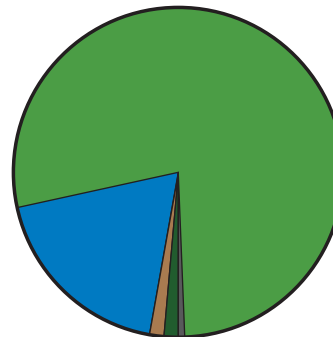
	Total N lb N/a	N Alone --Seed yield (lb/a)--	w/Utrisha N	Increase
---2022---	110	2114	2157	43
	135	1967	2054	87
	160	1989	2000	11
	185	1667	1858	191
---2023---	70	1043	1090	47
	110	1278	1391	113
	150	1381	1434	53
	190	1479	1497	18
		Average	70.4	

### Application

- 5 oz/a
- Apply early in the morning when stomata are open and when spring growth is sufficient to maximize leaf contact

### Nitrogen

- 78% of air is Nitrogen (N<sub>2</sub>)
- Nitrogen the most limiting plant nutrient
- Methylobacterium symbioticum converts atmospheric nitrogen (N<sub>2</sub>) to ammonium



### Composition of Air

- Nitrogen 78%
- Oxygen 20.9%
- Other Gases >0.17%
- Argon >0.90%
- Carbon Dioxide 0.03%