

KLINKENBORG AERIAL SPRAYING AND SEEDING PARKERSBURG, IOWA



WHY COVER CROPS WERE ADDED TO OUR OPERATION

- ▶ Extended flying season
- ▶ High demand
- ▶ Had proper equipment necessary for the jobs
- ▶ Pilots with experience



SOME OF THE KLINKENBORG AIRCRAFT USED FOR LIQUID AND DRY APPLICATIONS

OH-58 WITH ISOLAIR BUCKET



Flying over corn nearing “physiological” maturity or black layer



OCT 8, 2014



Keeping a good height distance from the corn canopy; Know your seed!



Calibrate to ensure the seed disperses in a correct pattern



CHANGES MADE TO MAKE COVER CROPS EASIER AND FASTER

- ▶ Bulk is better
- ▶ Streamlined seed blends
- ▶ Wingman Hopper System



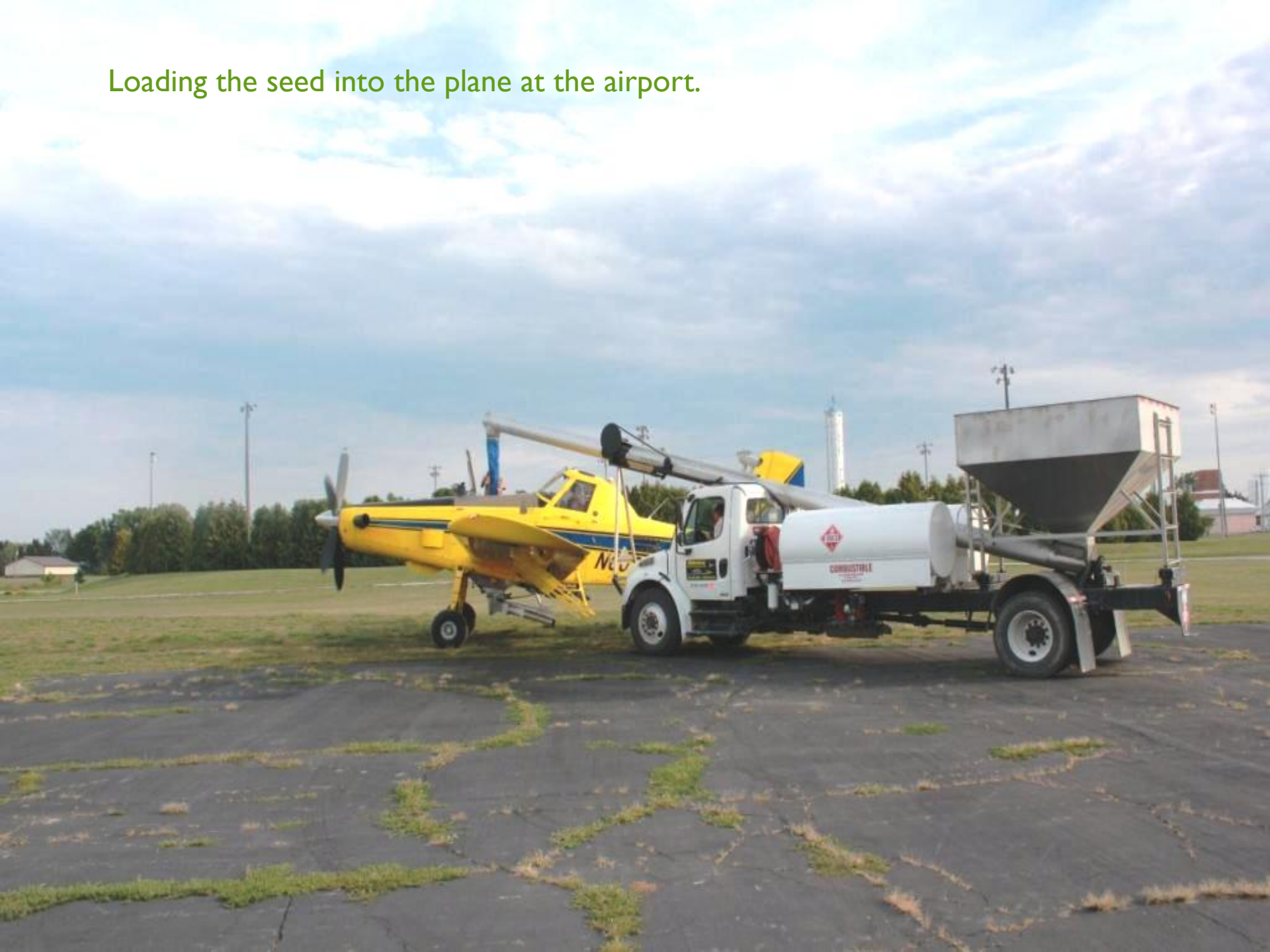
Bulk is best



STREAMLINED SEED BLENDS

- ▶ Economy Mix: 50# Cereal Rye
- ▶ Forage Mix: 100# Cereal Rye
- ▶ Winter Kill Mix: 32# Oats 3# Radish 2# Turnips
- ▶ Nutrient Scavenging Mix: 45# Cereal Rye 4# Radish
- ▶ Soil Health Mix: 40# Cereal Rye 3# Hairy Vetch 3# Red Clover 1# Turnips

Loading the seed into the plane at the airport.



CALIBRATING FOR DIFFERENT SEED SIZES

- ▶ Weighed out small loads
- ▶ Timed material flow rates
- ▶ Knowing density of material
- ▶ Determine swath width based on lightest seed in blend
- ▶ Make notes of gate settings

APPLICATION RATE (LB/ACRE)

15

DISPERSAL CALCULATOR

SIDE 2

AREA COVERED (ACRES/MIN)	MATERIAL FLOW RATE (LB/MIN)
2.0	30.00
2.5	37.50
3.0	45.00
3.5	52.50
4.0	60.00
4.5	67.50
5.0	75.00
6.0	90.00
8.0	120.0
10.0	150.0
12.5	187.5
15.0	225.0
17.5	262.5
20.0	300.0
22.5	337.5
25.0	375.0
27.5	412.5
30.0	450.0
35.0	525.0
40.0	600.0

MATERIAL FLOW RATE (LB/MIN)



Texas Transland, LLC
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Website: www.translandllc.com

REQUIRED MAT'L FLOW RATE (LB/MIN) = APPLICATION RATE (LB/ACRE) x AREA COVERED (ACRES/MIN)

GROUND SPEED (MPH)

95

CONVERSION FACTORS

SIDE 1

SWATH WIDTH (FT)

15	2.88
20	3.84
25	4.80
30	5.76
35	6.72
40	7.68
45	8.64
50	9.60
55	10.6
60	11.5
65	12.5
70	13.4
75	14.4
80	15.4
85	16.3
90	17.3
95	18.2
100	19.2
125	24.0
150	28.8

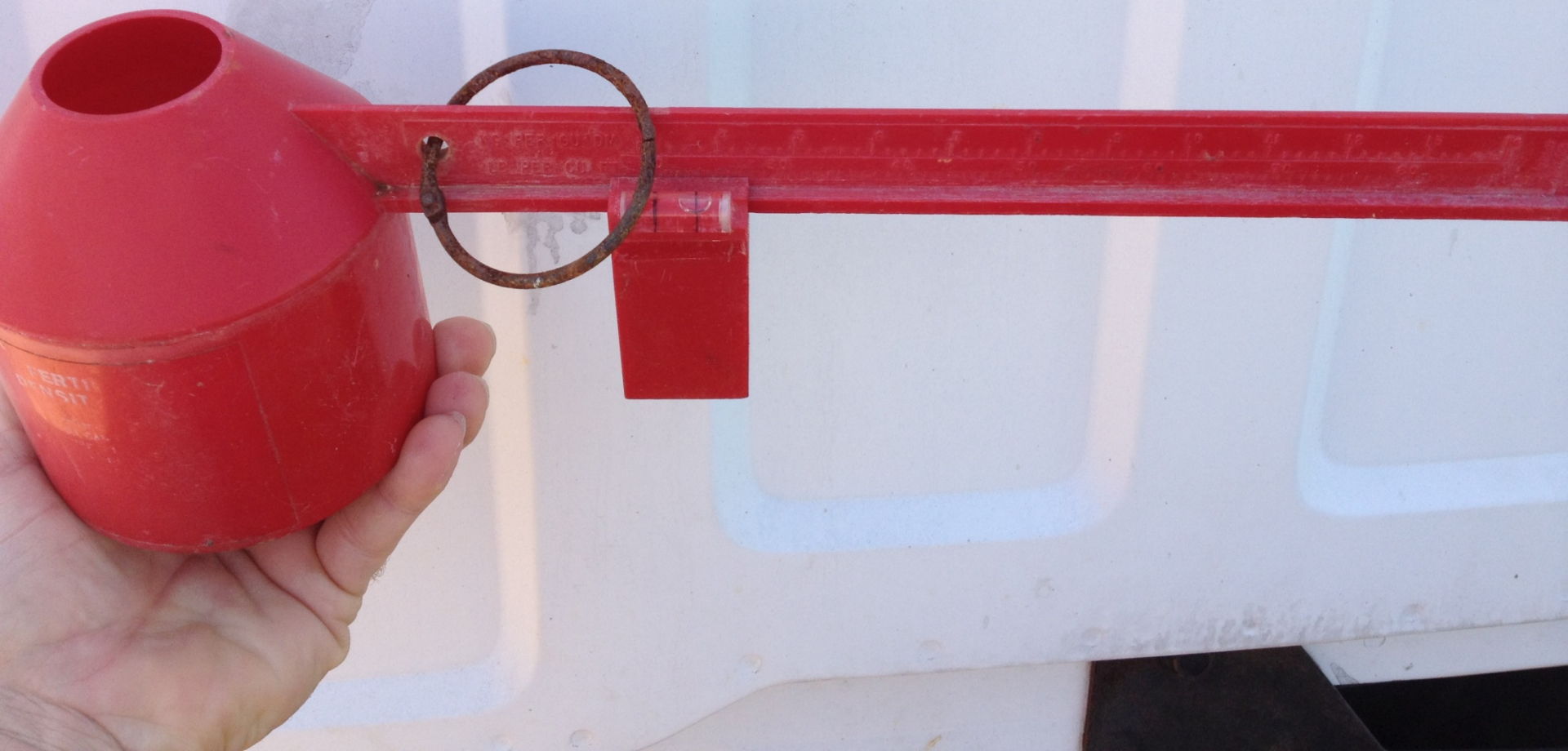
AREA COVERED (ACRES/MIN)

1 m = 3.28 ft
1 km = 0.621 miles
1 ha = 2.47 acres
1 kg = 2.20 lb
1 kg/ha = 0.892 lb/acre
1 L = 0.264 US Gal
1 L = 33.8 US fl oz


1 US Gal = 128 US fl oz
1 mile = 5280 ft
1 acre = 43560 sq ft
1 ha = 10000 m²
1 m² = 10.8 sq ft
1°F = 1°C x 1.8 + 32)
sales@translandllc.com

AREA COVERED (ACRES/MIN) = 0.00202 x GROUND SPEED (MPH) x SWATH WIDTH (FT)

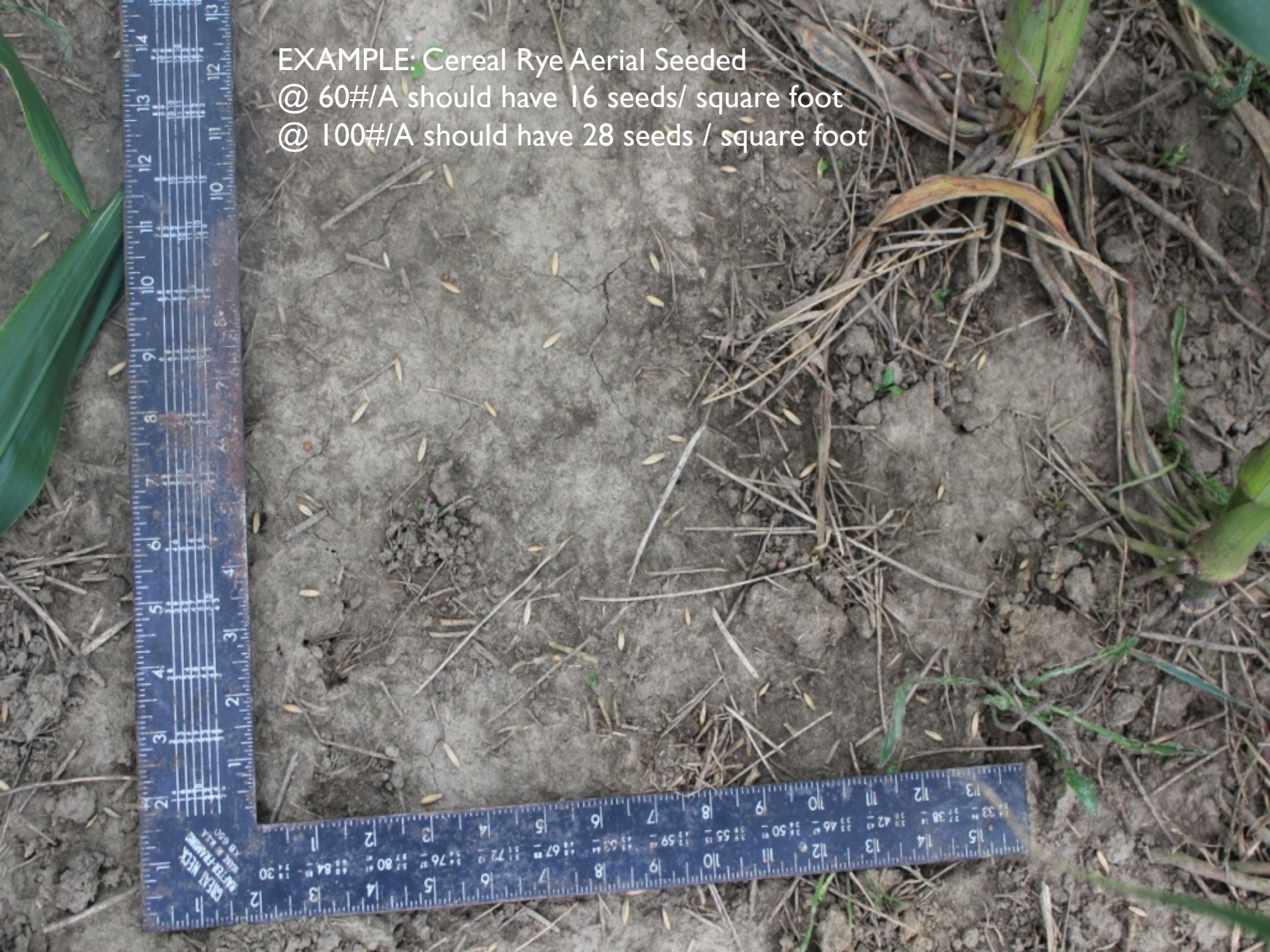
DENSITY CUP



KEYS TO IMPROVING COVER CROP ESTABLISHMENT

- ▶ Available for timing of cover crop to be planted
 - ▶ Aerial offers an earlier planting opportunity
 - ▶ Mindful of seeding across field boundaries
 - ▶ Need heavier rates for aerial applied seed
- 

EXAMPLE: Cereal Rye Aerial Seeded
@ 60#/A should have 16 seeds/ square foot
@ 100#/A should have 28 seeds / square foot



WIND AND RAIN WILL CAUSE MOST OF SEEDS ON THE LEAVES TO FALL TO THE GROUND





EXAMPLE: Radish Aerial Seeded
@ 4#/A should have 3 plants / square foot







Left a buffer for neighboring field considerations



Cereal Rye fall of 2013



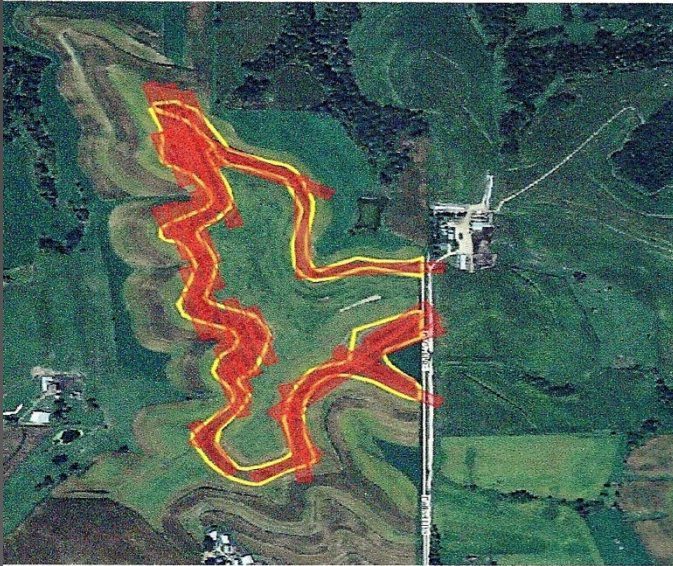
CEREAL RYE FALL 2013 – 80 LBS/AC



CONTOURS

Application Report

Klinkenborg Aviation - 31442 Keystone Ave, PO Box 548 - Parkersburg, IA 50665



A large, empty cyan-colored rectangular area with horizontal lines, intended for handwritten notes or additional information.

Product(s) Provided by Customer:

	Company	Restricted Use?	EPA Reg #	Rate per Acre	Acres	Total Volume Used
Disc Oats		No	Exempt	64.0 pounds	24	1536.0 pounds











