



Drone Spraying in Various Crops

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Summary:

- Types of drones
- Test in Soybeans
- Test in Sugarcane
- If we have time:
 - Drift
 - Rules
 - Operation S.A.F.E.

Sprayer Drones Currently Available:

DJI T40:



Hyllo:



XAG P100 Pro:



Soybean Tests:

For Testing to Two Large Spray Drones (10-15 L) were Constructed with Different Spray Systems

- Cover 2 acres per Battery in about 6 to 10 minutes @ 2 GPA
 - 13 to 20 ft. swath width
 - Operate 11 to 18 MPH
- Two different application systems:
 - Standard Fixed Orifice Hydraulic Nozzles:
 - AIXR11002 nozzles:
 - Centrifugal Nozzles:
 - Very hard to use and mount on a drone: need cutoffs and special systems to regulate flow



Other Spray Systems Tested:

Herbi Nozzles:



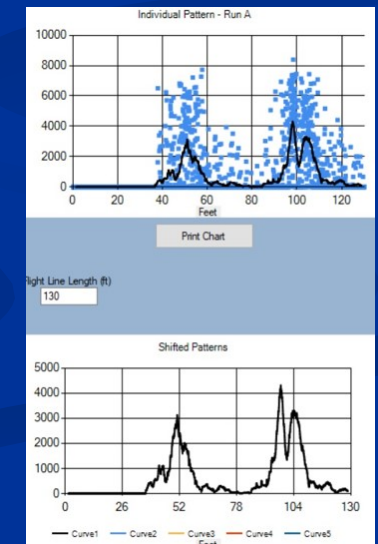
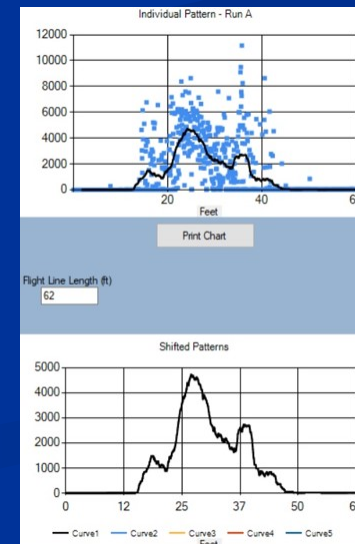
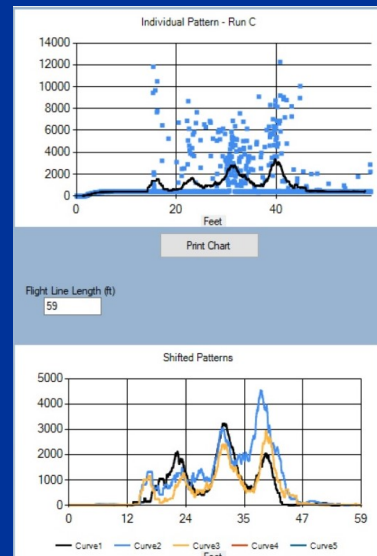
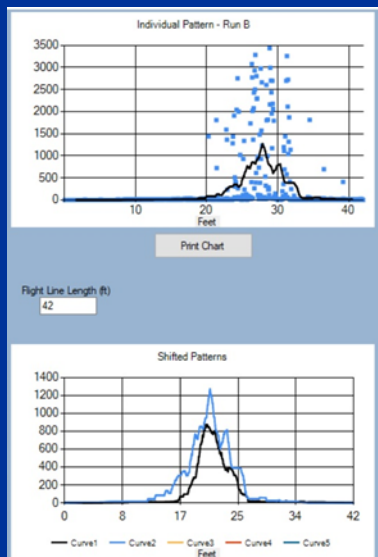
Boomless Pasture Nozzles:



Boomed Hydraulic Orifice Nozzles:



Boom Rotary Nozzles:

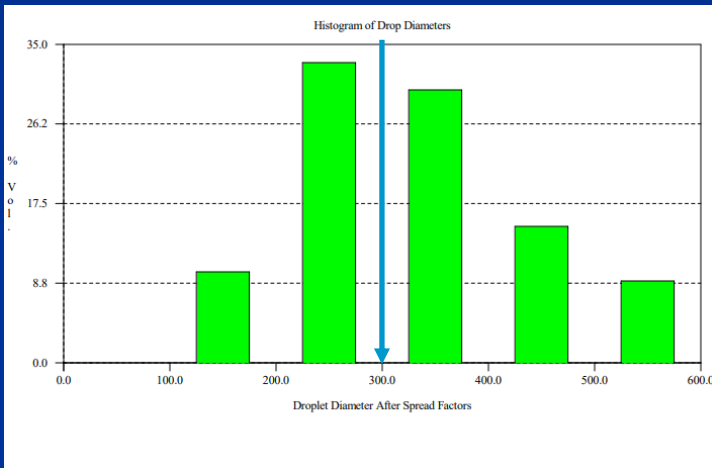


Example Flight:

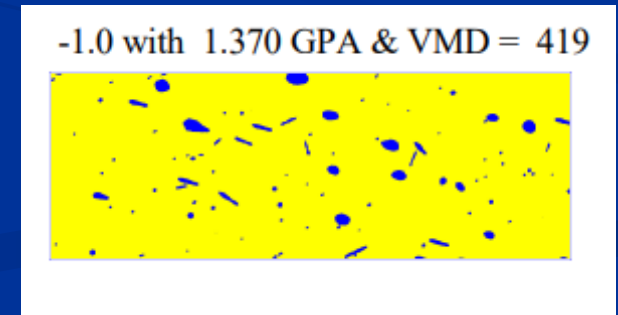
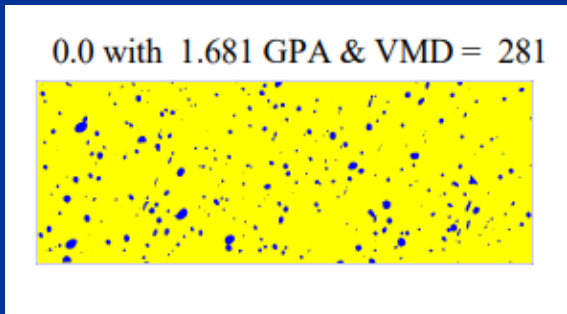
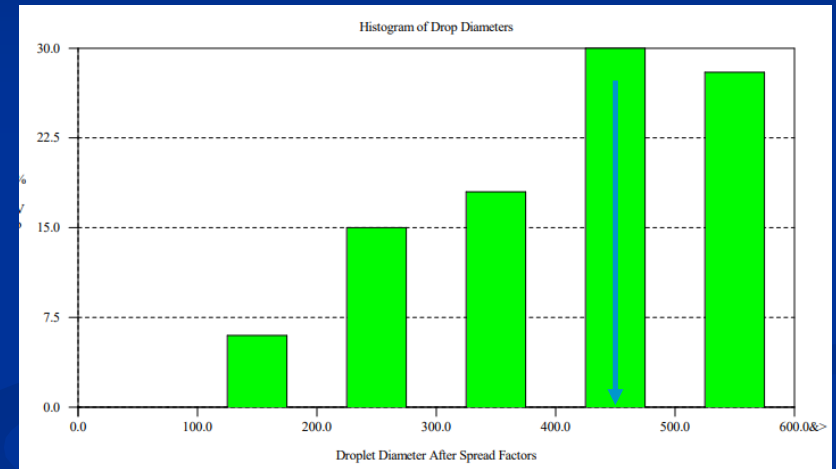


Spray Droplet Spectrum of Each Spray System:

Centrifugal:



AIXR11002 Nozzles:



Canopy Infiltration Test in Soybeans:



Centrifugal
4 ft. alt



Centrifugal
10 ft. alt



Centrifugal
15 ft. alt



AIXR11002
10 ft. alt.



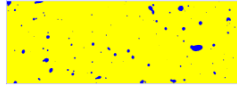
-1.0 with 0.373 GPA & VMD = 300



0.0 with 0.812 GPA & VMD = 626

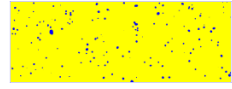


1.0 with 0.912 GPA & VMD = 380



0.643
GPA

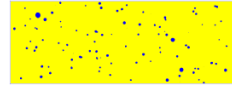
-1.0 with 0.742 GPA & VMD = 235



0.0 with 1.885 GPA & VMD = 273

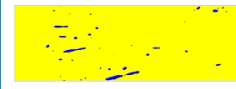


1.0 with 0.776 GPA & VMD = 284

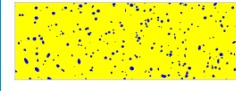


1.13
GPA

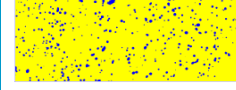
-1.0 with 0.611 GPA & VMD = 472



0.0 with 1.951 GPA & VMD = 293

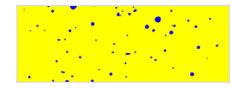


1.0 with 2.256 GPA & VMD = 267

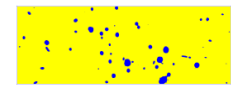


1.61
GPA

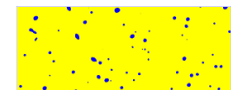
-1.0 with 0.720 GPA & VMD = 329



0.0 with 1.328 GPA & VMD = 419

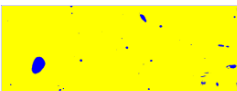


1.0 with 1.016 GPA & VMD = 383

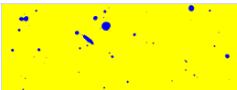


1.02
GPA

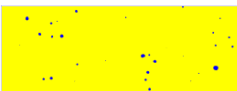
-1.0 with 0.448 GPA & VMD = 482



0.0 with 0.552 GPA & VMD = 481



1.0 with 0.246 GPA & VMD = 299

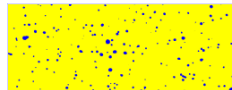


0.347
GPA

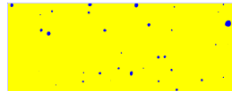
-1.0 with 0.205 GPA & VMD = 264



0.0 with 1.218 GPA & VMD = 269

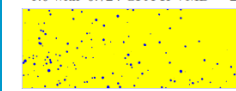


1.0 with 0.329 GPA & VMD = 338

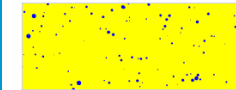


0.584
GPA

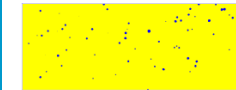
-1.0 with 0.724 GPA & VMD = 246



0.0 with 0.731 GPA & VMD = 289



1.0 with 0.357 GPA & VMD = 249

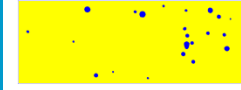


0.604
GPA

-1.0 with 0.262 GPA & VMD = 300



0.0 with 0.654 GPA & VMD = 410



1.0 with 0.024 GPA & VMD = 318



0.313
GPA

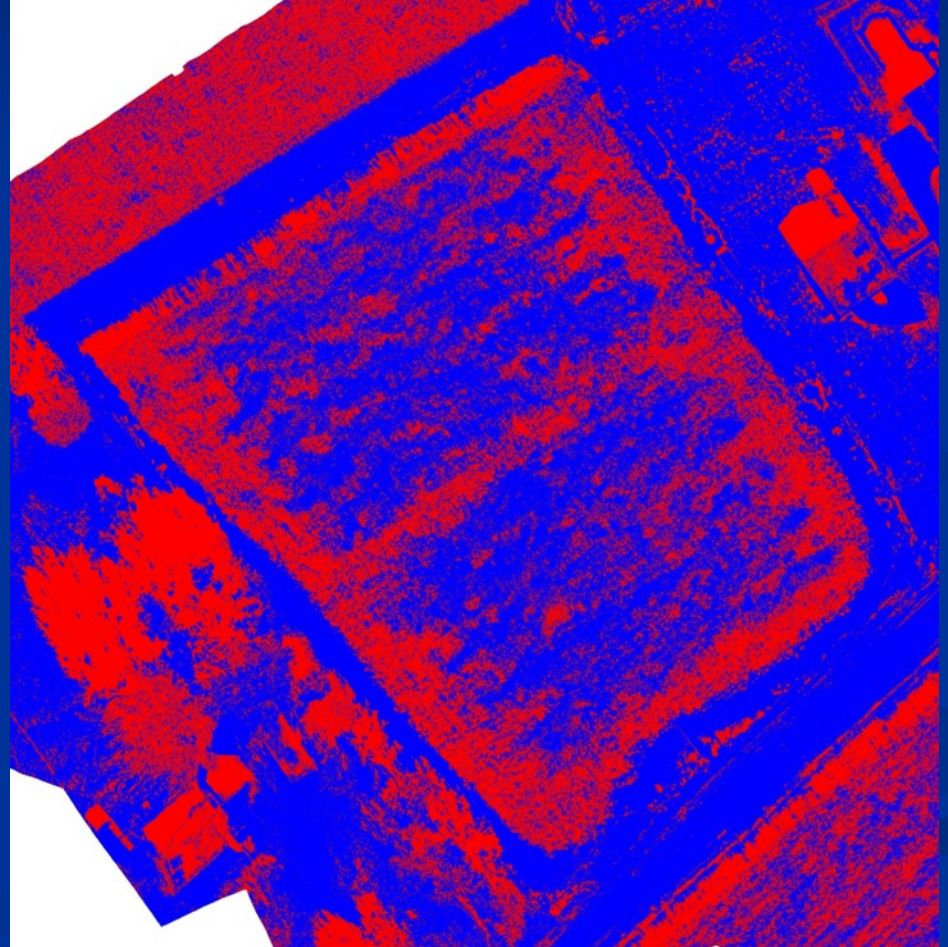
Testing in Sugarcane:

Ripener Coverage Tests:

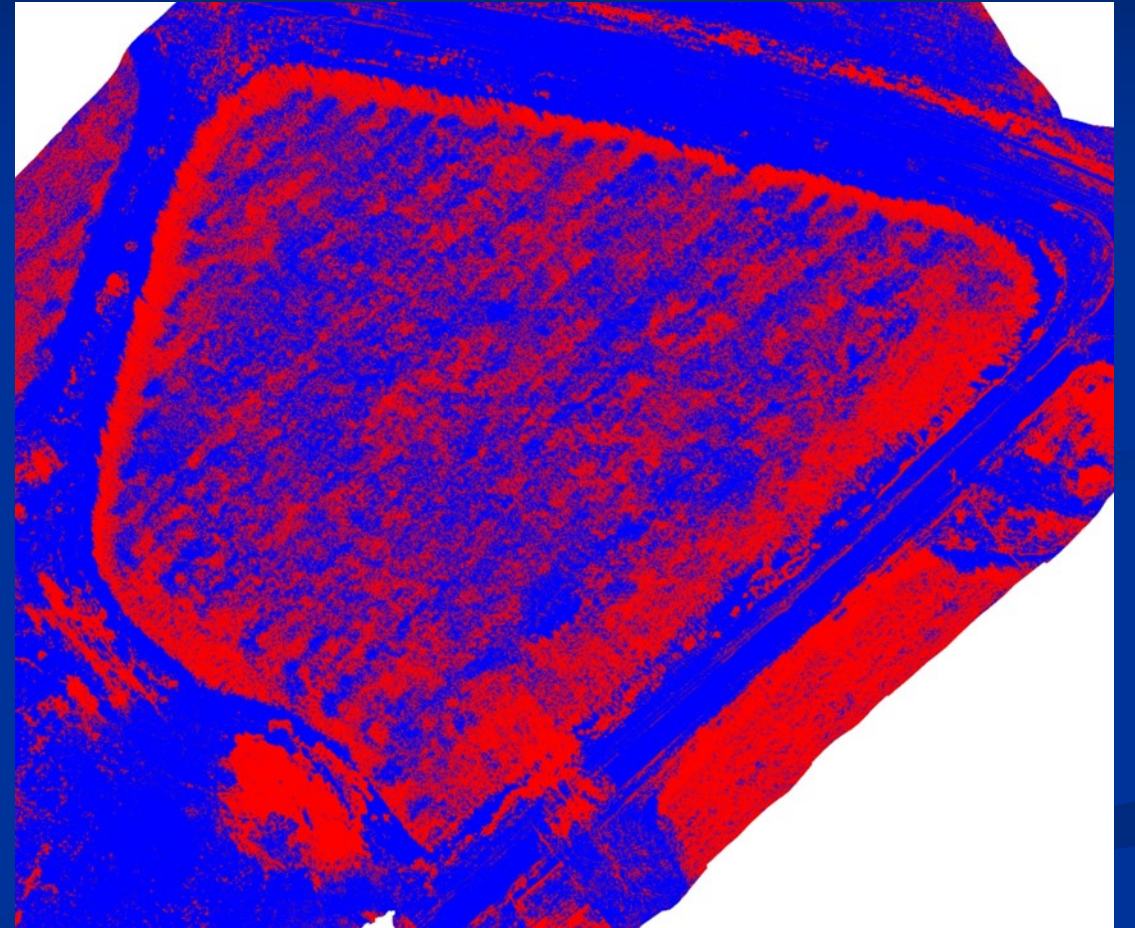
- Three fields sprayed with both AIXR and Centrifugal nozzles to compare application efficiency:
- Looking for several things:
 - Coverage
 - Evenness
 - Border efficiency



Centrifugal Nozzles:

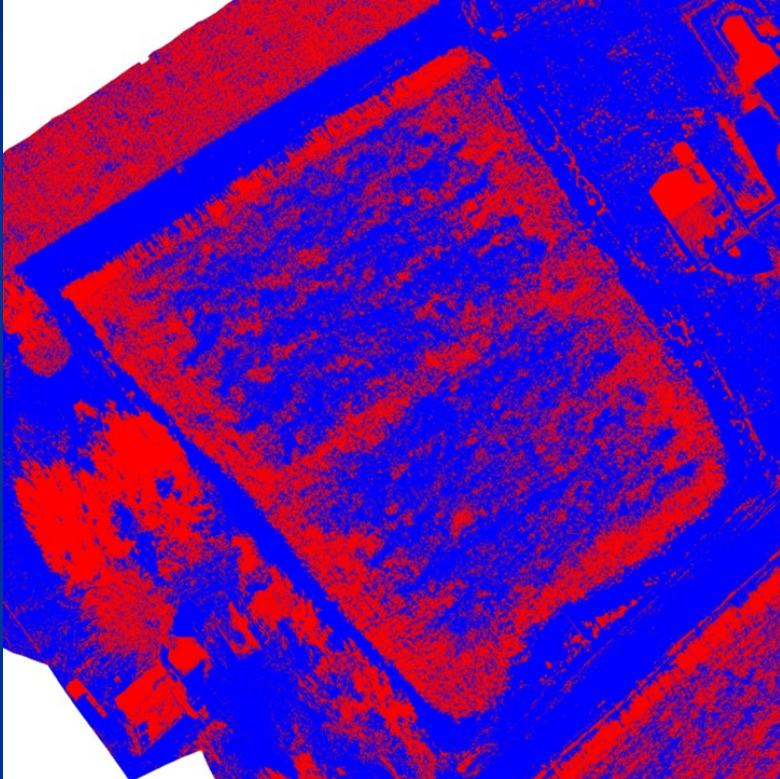


AIXR11002 Nozzles:



Comparison:

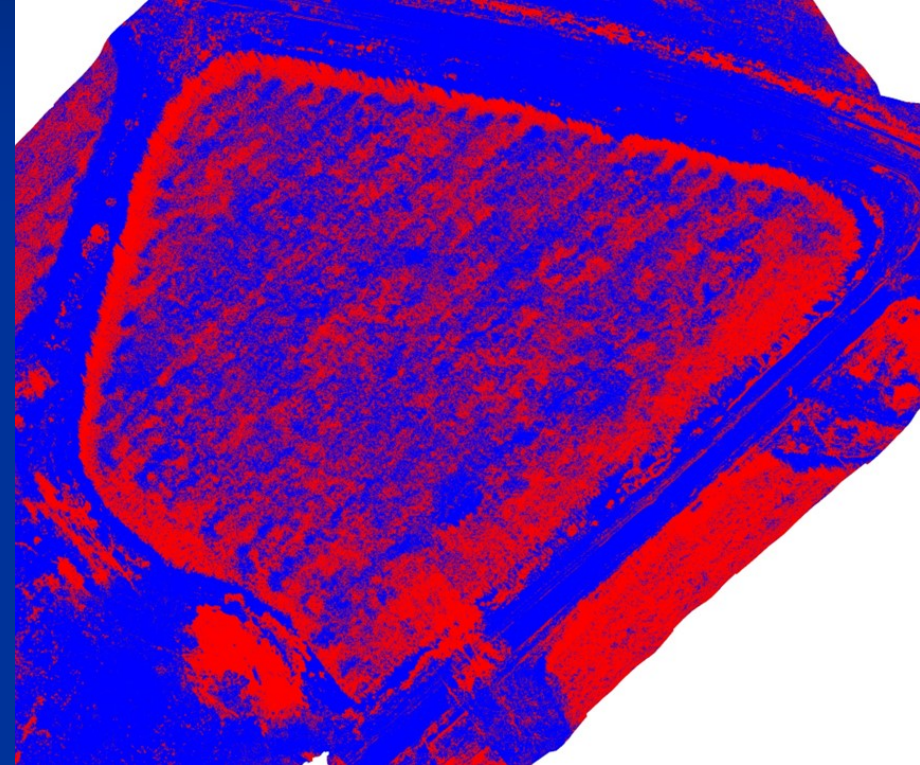
■ Centrifugal:



■ C.V. = 16.1%

■ GR Diff Value = 11.9

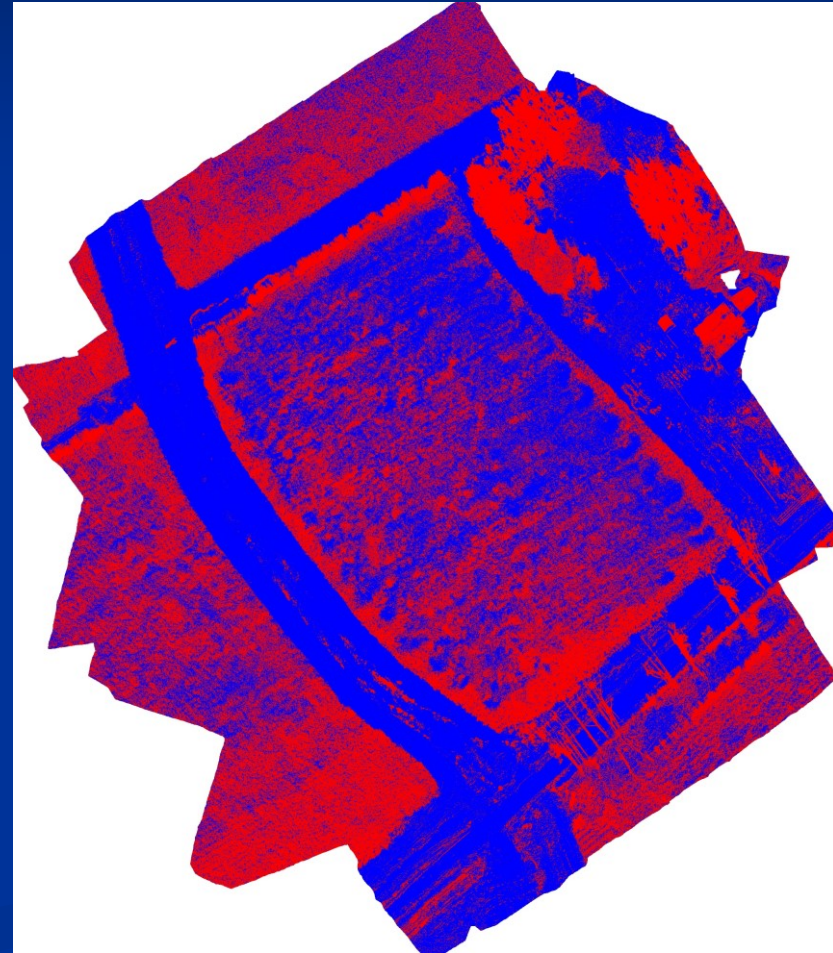
■ AIXR11002:



■ CV = 13.1%

■ GR Diff Value = 12.6

Third Field Sprayed with AIXR11002 (faster speed / less Ripener):



Drift Test:

- Three Drift Poles placed downwind at 20, 50, and 250 ft. with droplet cards.
- 12 Passes Up Wind from Drift Poles in a Stiff 5 to 7 MPH cross-wind at 2 GPA:
- Pasture grass surface
- 2 GPA / 11 MPH



Drift Pole



Drift Pole Test:

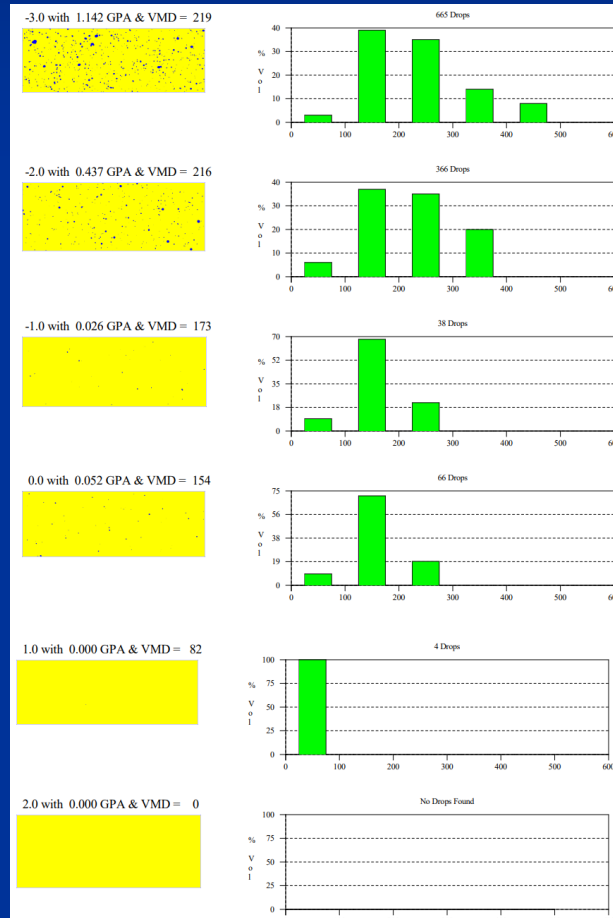
Centrifugal Nozzles:

Pole Distances from Flight Line:

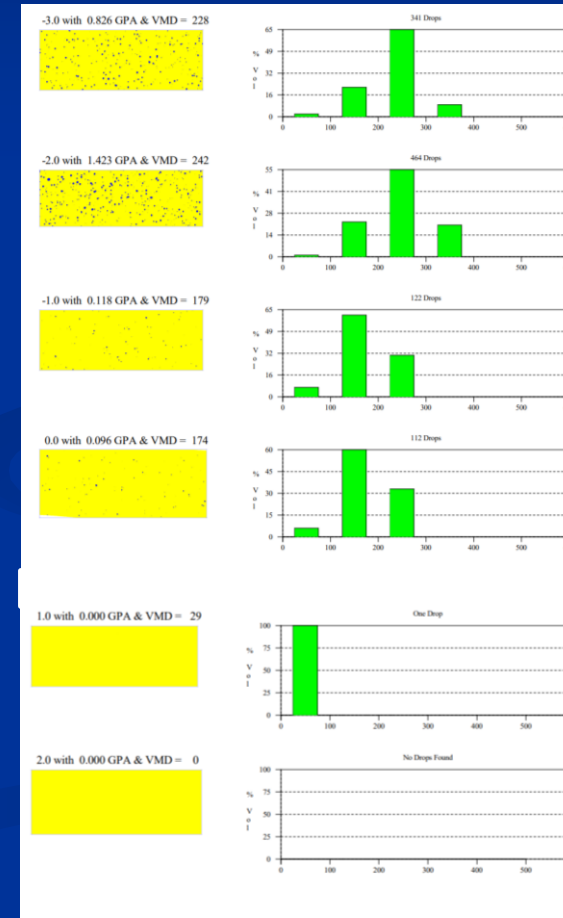
20 ft.

50 ft.

250 ft.



AIXR11002 Nozzles:



Operation S.A.F.E. – Get Your Drone Tested!



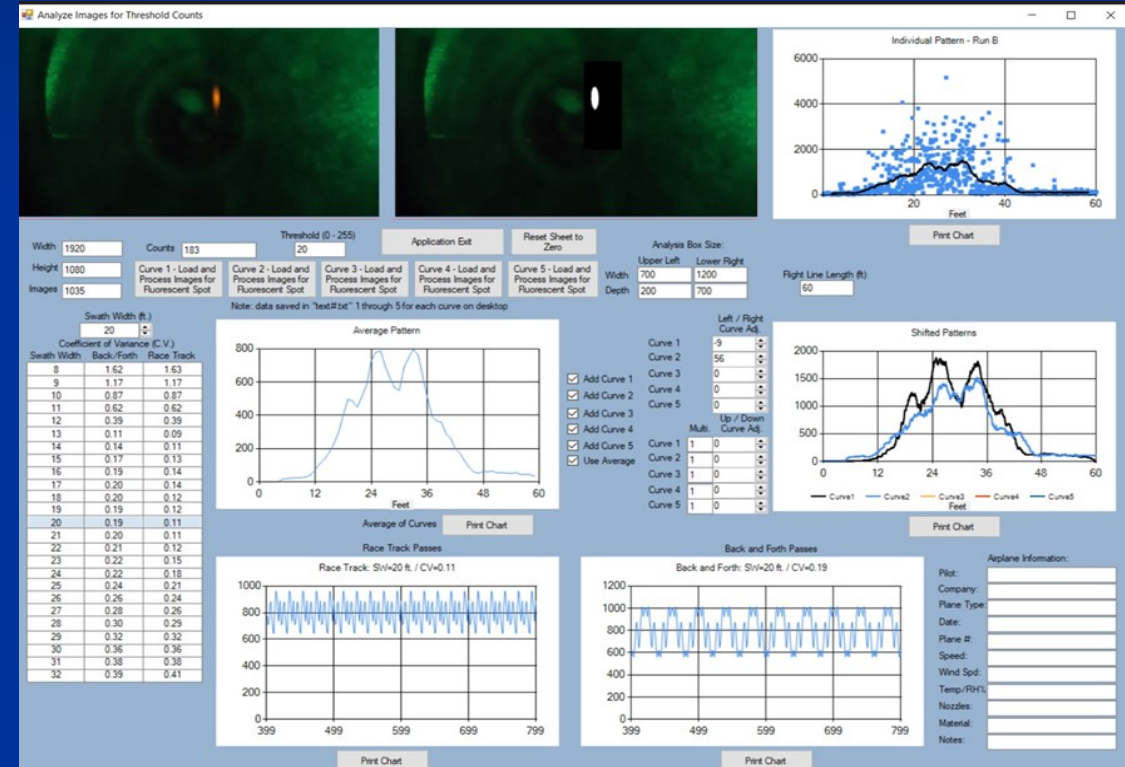
Pattern Testing:

■ Test for two properties:

- Swath width
- Droplet spectrum (size, distribution, etc.)

■ Additional properties:

- Multiple pass C.V.
- Field C.V.



Products Changing Very Quickly in Size and Type:

- XAG V40:
- Only 2 motors:



The End

Questions?

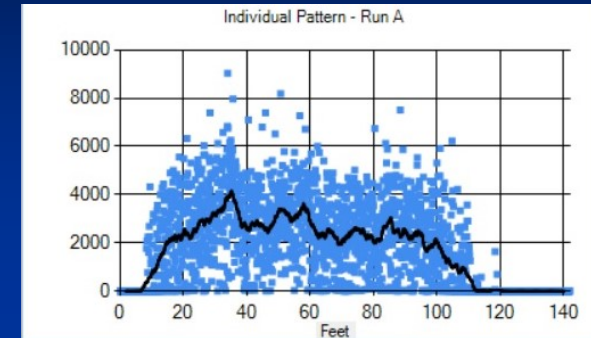
Thanks for Your Support!!!



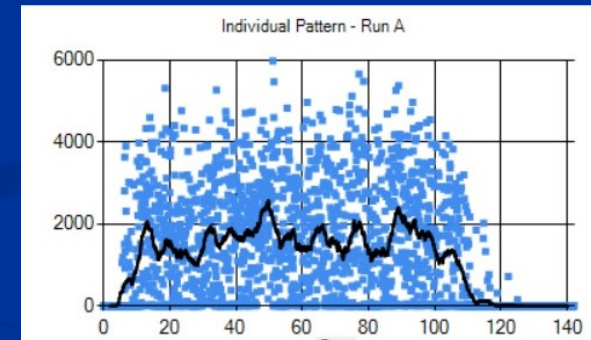
Multi-Pass Tests Example on AIXR11002 Nozzles:

- Tested at 13 ft., 20 ft., and 26 ft. swath widths
- No (low) wind conditions
 - < 3 MPH
- 11 MPH travel speed
 - 2/3 max speed for that drone
- 10 ft. flying height

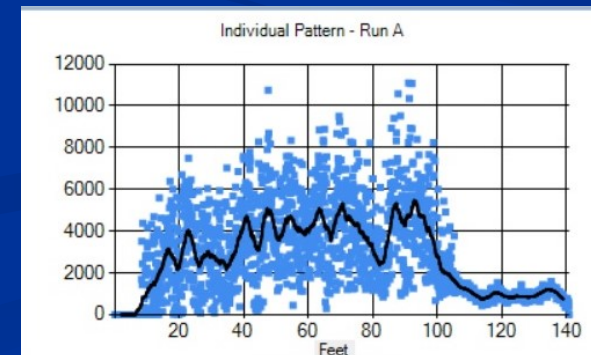
13 ft S.W.
C.V. – 0.17
to 0.22



20 ft S.W.
C.V. – 0.19
to 0.22



26 ft S.W.
C.V. – 0.26
to 0.28

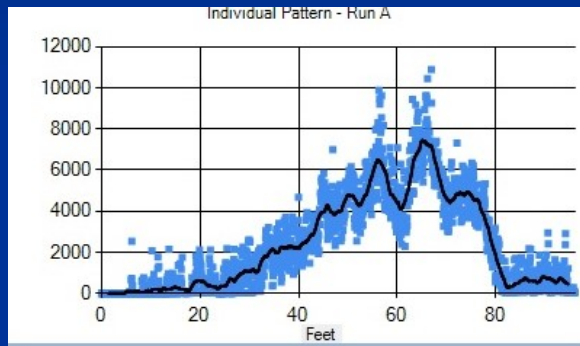


Licenses Needed to Use Sprayer Drones:

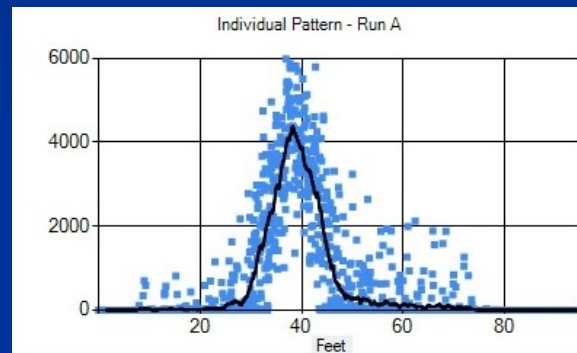
- FAA (Federal):
 - Part 107
 - Part 137
- LDAF (State):
 - Commercial pesticide applicators license
 - Aerial application license
 - drone license
- Business Insurance:
 - In case of drift claim or accident

Operation Differences - Wind Direction Effect - 6 MPH:

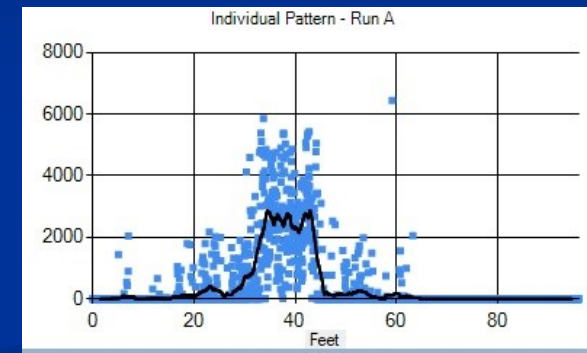
2 GPA Extra Coarse -
Into the Wind (6 MPH)



2 GPA Extra Coarse -
With the Wind (6 MPH)



2 GPA Extra Coarse -
With the Wind (6 MPH)



25

Coefficient of Variance (C.V.)

Swath Width	Back / Forth	Race Track
13	0.68	0.68
14	0.51	0.50
15	0.32	0.29
16	0.14	0.05
17	0.15	0.05
18	0.16	0.10
19	0.16	0.12
20	0.17	0.13
21	0.17	0.14
22	0.18	0.15
23	0.19	0.13
24	0.20	0.12
25	0.22	0.11
26	0.24	0.12
27	0.25	0.14
28	0.26	0.16
29	0.26	0.17
30	0.25	0.17
31	0.23	0.16
32	0.21	0.16
33	0.20	0.16
34	0.20	0.16
35	0.20	0.17
36	0.21	0.18
37	0.21	0.19

Swath Width (ft.)

14

Coefficient of Variance (C.V.)

Swath Width	Back / Forth	Race Track
2	NaN	NaN
3	NaN	NaN
4	5.26	5.24
5	2.01	2.08
6	1.20	1.23
7	0.78	0.80
8	0.44	0.47
9	0.08	0.02
10	0.08	0.03
11	0.09	0.05
12	0.11	0.09
13	0.15	0.14
14	0.21	0.19
15	0.26	0.25
16	0.31	0.30
17	0.35	0.35
18	0.40	0.40
19	0.45	0.45
20	0.49	0.49
21	0.54	0.54
22	0.58	0.58
23	0.64	0.64
24	0.66	0.66
25	0.71	0.71
26	0.75	0.74

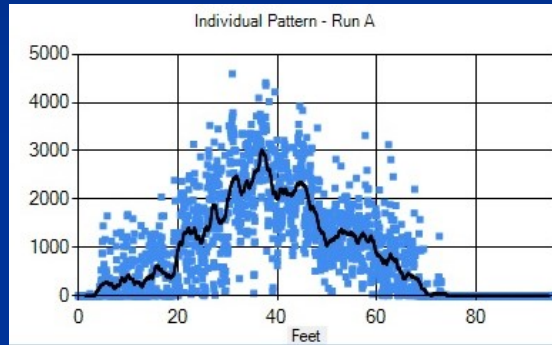
14

Coefficient of Variance (C.V.)

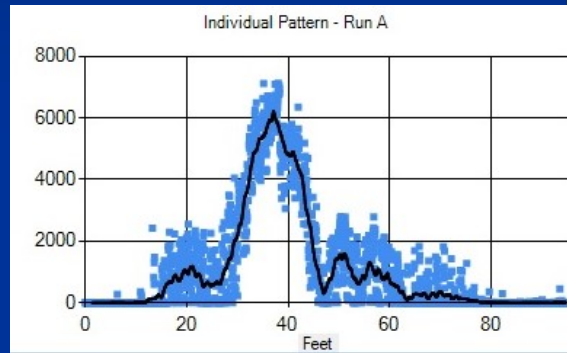
Swath Width	Back / Forth	Race Track
2	NaN	NaN
3	NaN	NaN
4	5.79	7.03
5	2.02	2.11
6	1.20	1.24
7	0.78	0.82
8	0.47	0.50
9	0.23	0.22
10	0.21	0.20
11	0.13	0.12
12	0.10	0.09
13	0.12	0.13
14	0.19	0.19
15	0.27	0.27
16	0.35	0.34
17	0.40	0.40
18	0.47	0.47
19	0.51	0.50
20	0.54	0.53
21	0.56	0.56
22	0.58	0.58
23	0.62	0.62
24	0.63	0.63
25	0.67	0.67
26	0.71	0.71

Operation Differences (cont.) - Wind Direction Effect - 6 MPH:

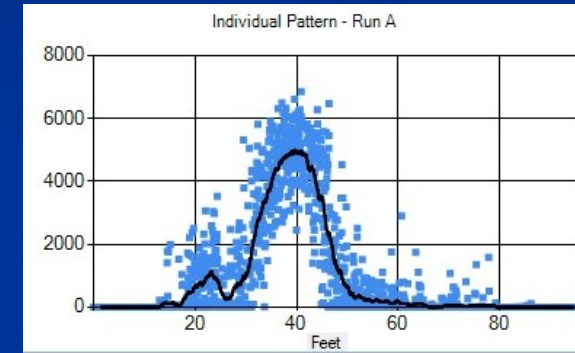
2 GPA Extra Fine -
Into the Wind (6 MPH)



5 GPA Extra Fine -
With the Wind (6 MPH)



5 GPA Extra Coarse -
With the Wind (6 MPH)



Swath Width (ft.) 20

Coefficient of Variance (C.V.)

Swath Width	Back / Forth	Race Track
8	1.43	1.42
9	1.05	1.04
10	0.77	0.77
11	0.54	0.54
12	0.30	0.29
13	0.12	0.05
14	0.11	0.06
15	0.12	0.07
16	0.12	0.09
17	0.10	0.07
18	0.11	0.08
19	0.11	0.06
20	0.09	0.08
21	0.09	0.11
22	0.09	0.12
23	0.12	0.12
24	0.13	0.13
25	0.13	0.14
26	0.13	0.15
27	0.12	0.15
28	0.11	0.15
29	0.12	0.15
30	0.12	0.16
31	0.12	0.17
32	0.12	0.17

Swath Width (ft.) 14

Coefficient of Variance (C.V.)

Swath Width	Back / Forth	Race Track
2	NaN	NaN
3	NaN	NaN
4	5.41	5.26
5	1.98	2.03
6	1.18	1.21
7	0.77	0.79
8	0.44	0.46
9	0.10	0.08
10	0.09	0.07
11	0.09	0.05
12	0.08	0.04
13	0.07	0.05
14	0.10	0.10
15	0.17	0.17
16	0.25	0.24
17	0.31	0.30
18	0.36	0.35
19	0.39	0.38
20	0.40	0.40
21	0.41	0.41
22	0.42	0.42
23	0.43	0.44
24	0.43	0.43
25	0.45	0.44
26	0.45	0.45

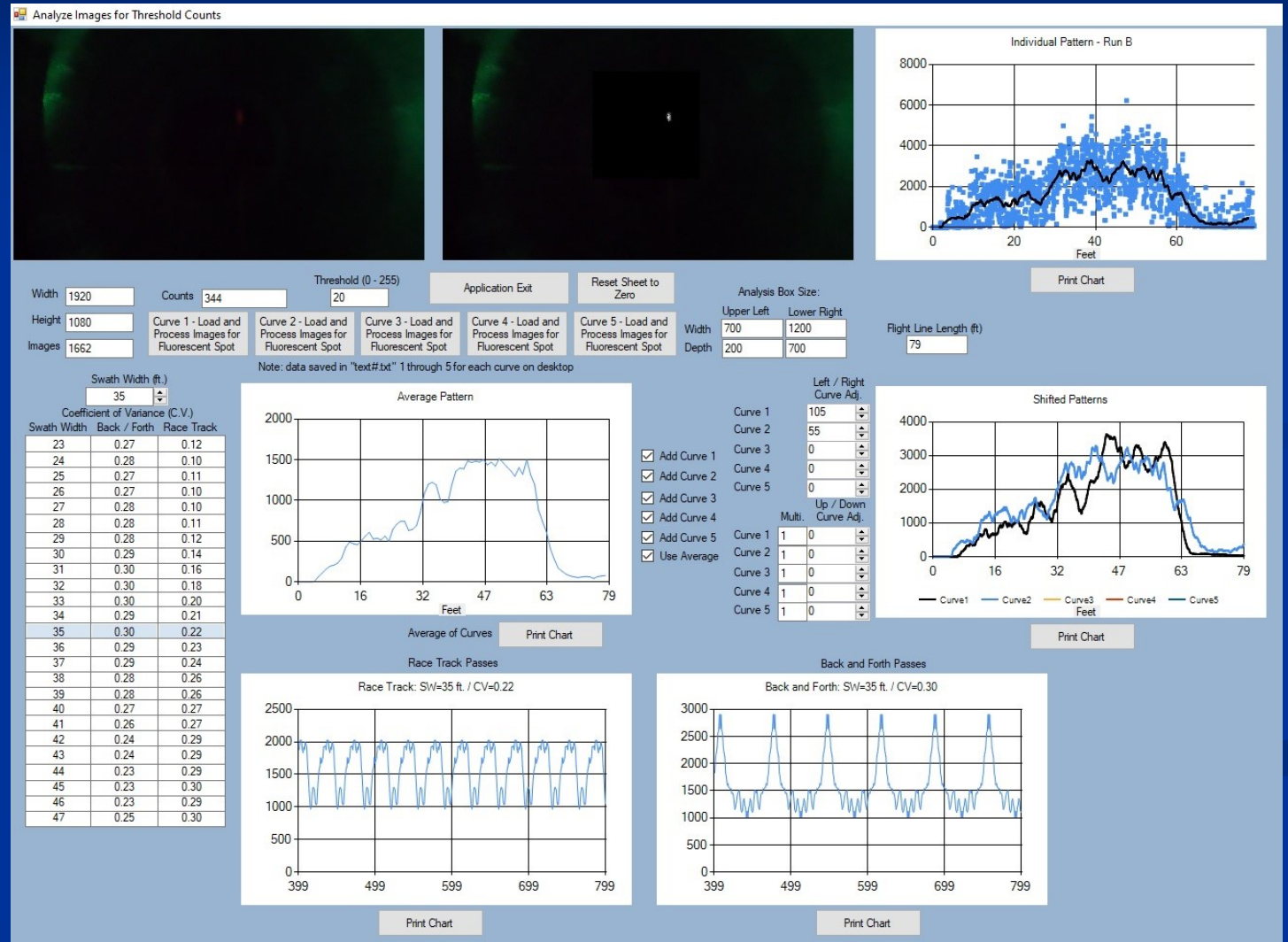
Swath Width (ft.) 15

Coefficient of Variance (C.V.)

Swath Width	Back / Forth	Race Track
3	NaN	NaN
4	NaN	10.00
5	2.63	2.57
6	1.44	1.46
7	0.96	0.96
8	0.62	0.63
9	0.30	0.31
10	0.05	0.07
11	0.07	0.09
12	0.07	0.07
13	0.04	0.05
14	0.06	0.05
15	0.11	0.10
16	0.18	0.17
17	0.23	0.23
18	0.29	0.29
19	0.34	0.33
20	0.38	0.37
21	0.41	0.41
22	0.45	0.43
23	0.48	0.46
24	0.49	0.47
25	0.52	0.50
26	0.54	0.52
27	0.55	0.54

T40 Pattern and Swath Width:

- Very wide pattern
 - 40 ft. total pattern
 - 30 to 35 ft. swath width
- Using extra fine double cutter wheel using extra fine speed setting
- 15 ft. flying height
 - Lower altitude (5 – 6 ft.) was only 25 ft.



Characteristics of Centrifugal versus Standard Nozzle System:

■ Centrifugal/Rotary Nozzles:

- 300 - 350 um maximum droplet size (or smaller) based on rotation speed and disk type.
- Higher flying height needed to increase canopy penetration and create a more uniform application.
- Drift was not more than AIXR11002 nozzles (and may actually be less)
- Slight less swath width than under-the-motor standard AIXR11002 tips.

■ Standard AIXR11002 Nozzles:

- Application height did not affect uniformity as much.
- Slightly wider application width than centrifugal nozzles
 - 25% in this case.
- Not as good for canopy infiltration
 - Larger droplets, less got to the bottom.
- Better C.V. on multi-pass test across wider range of environmental conditions.

Long Distance Drift Pole Test:

- Crosswind drift pole placed 300 ft. downwind from flying path
- Cards Placed at 4, 8, 12, and 16 ft. heights
- Three Reps and one calibration (no spray for at least 10 minutes time)



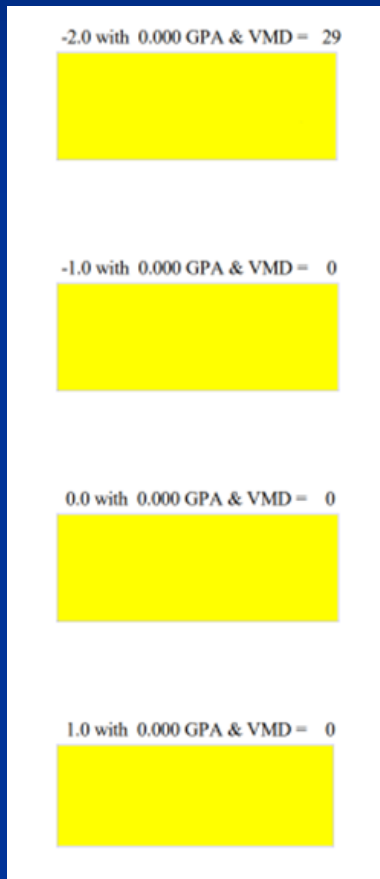
USDA Leading Edge Drone:

Spray Properties:

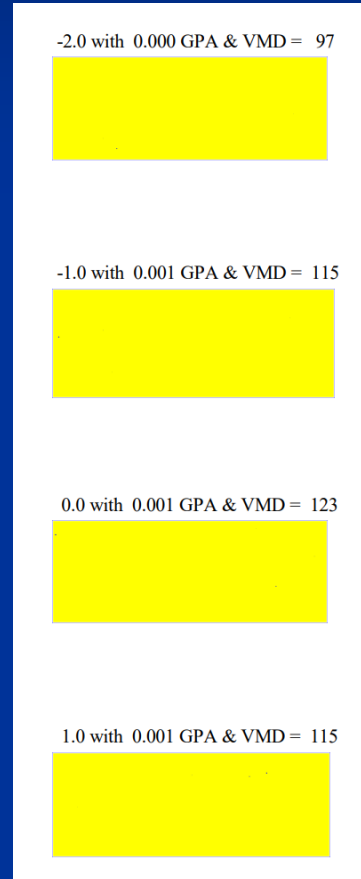
- 2 GPA / TT11001
- 20 ft. Swath
- 12 Passes
- 74F / 74%RH
- Water Only
- Analyze with Droplet Scan®

Long Distance Drift Results – Test Cards and GPA:

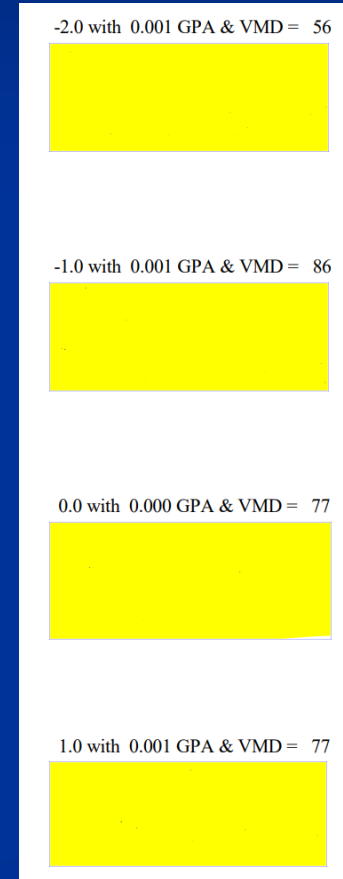
Calibration



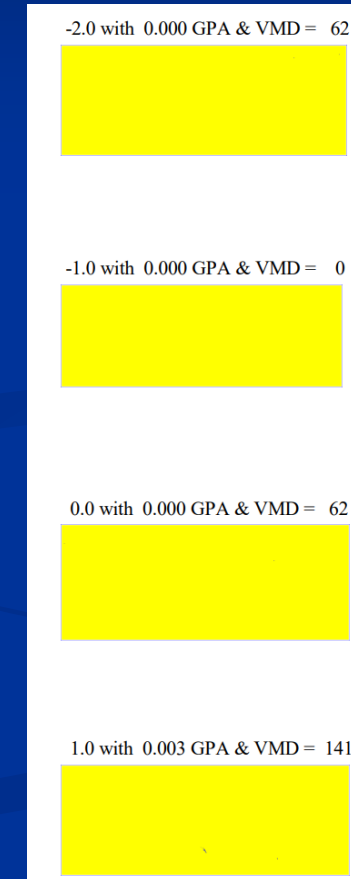
Rep 1



Rep 2



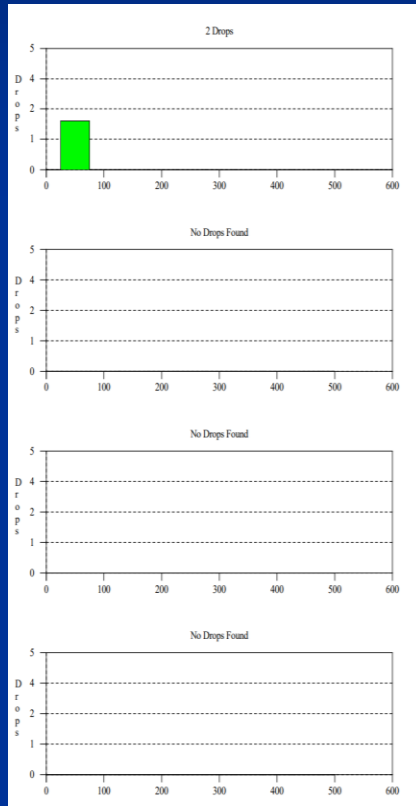
Rep 3



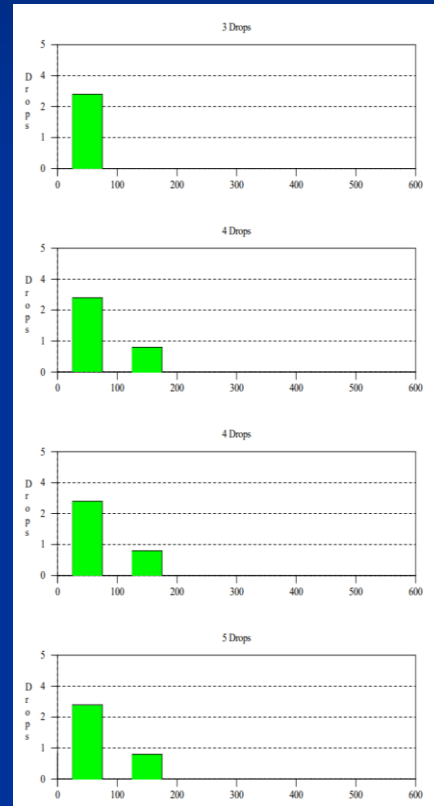
Average GPA Drift @ 300 ft.: 0.00075 GPA (< 0.001 GPA)

Test Cards Results – Number of Droplets:

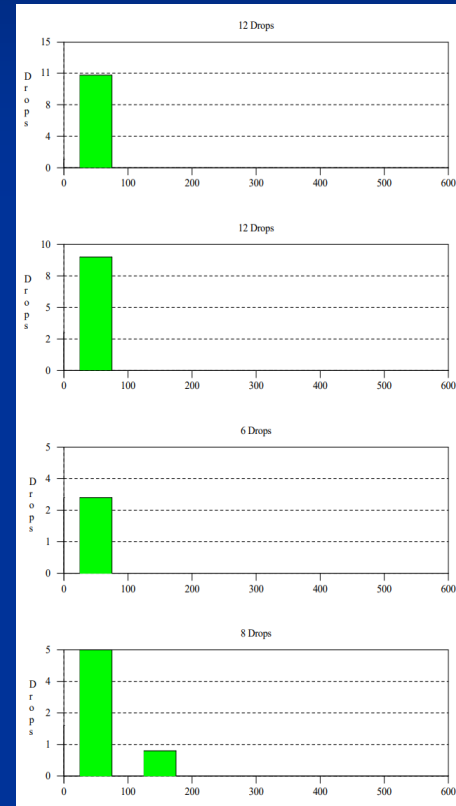
Calibration



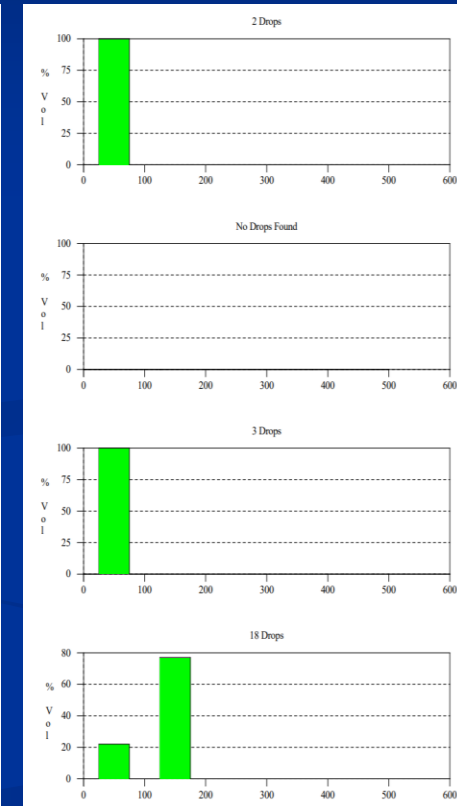
Rep 1



Rep 2



Rep 3



Total Droplets:

2

16

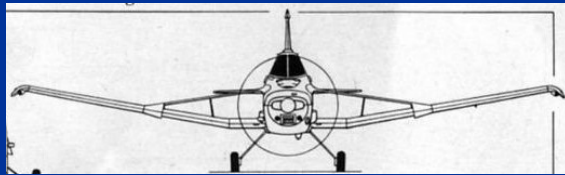
38

23

Average: 2 droplets per card

■ Drift Pole:

- Airplane: Turbine Thrush
- Release Height: 15 – 20 ft.
- Winds: 7 to 9 MPH (max for spraying)
- Drift Pole: 300 ft. downwind
- Four passes back and forth
- 2 GPA / 40 psi

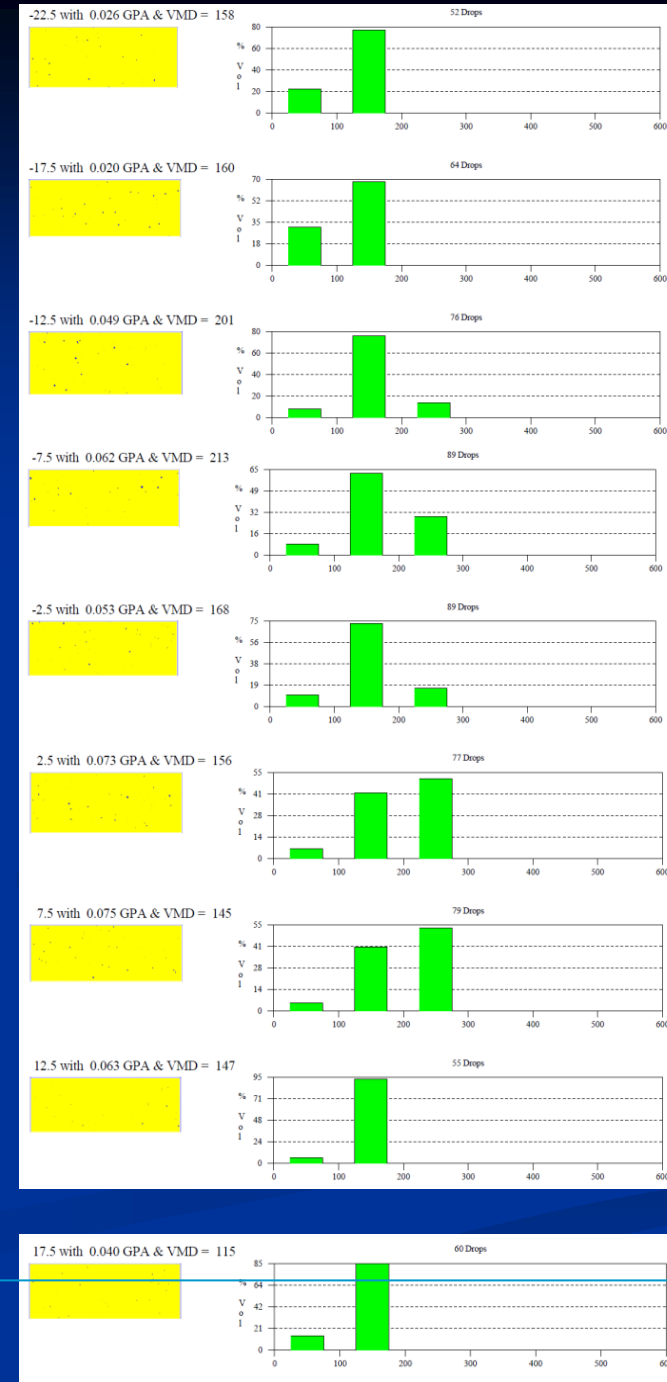


← 300 ft. →

↑ 15 – 20 ft. ↓

Ground Level – Card Every 5 ft.

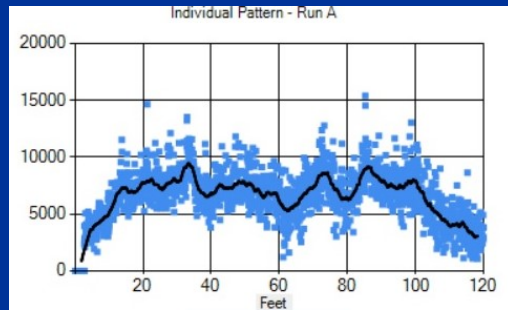
45 ft.



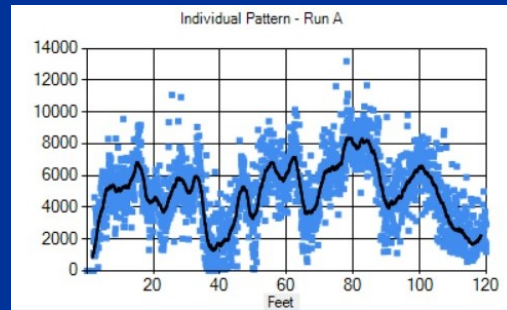
Effect of Flying Height on Centrifugal Nozzles for Multi-Pass Consistency:

- Centrifugal drone flown at two different heights in multi-pass test:
 - Swath width - 4 m
 - 2 Nozzles / 0.35 GPM per nozzle / 11 MPH / 2.25 GPA / Regular GPS

■ Results:



Higher Altitude –
15 to 20 ft.



Lower Altitude –
4 to 6 ft.

High Altitude Passes

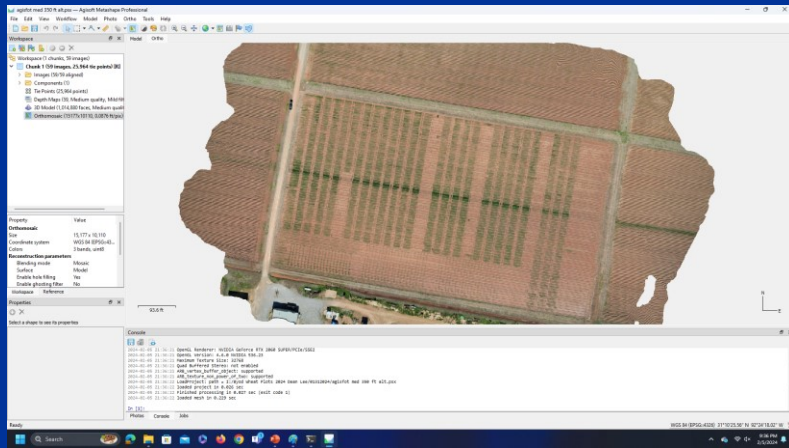


Low Altitude Passes

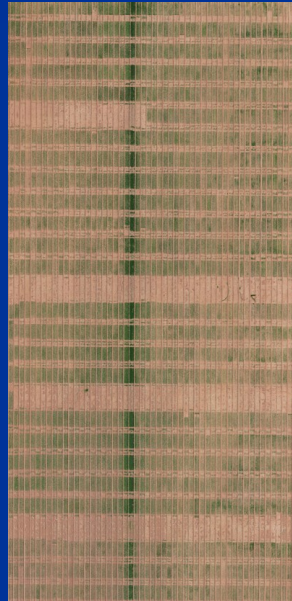


Getting Plot Data Out of Images:

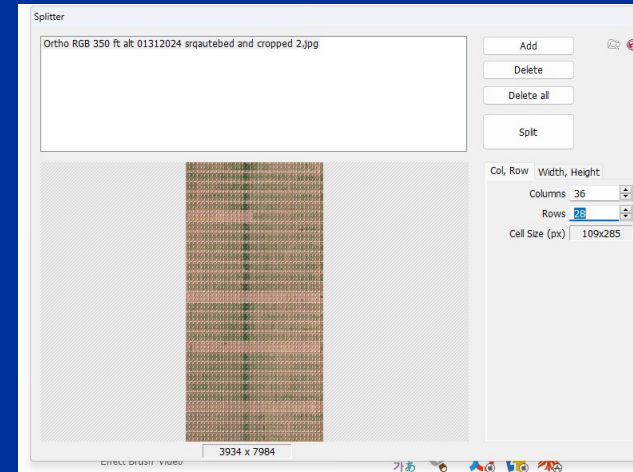
Georectification
and Assembly
Program - Agisoft



Straighten and
Crop: Microsoft
Image Comp.



Splitter Program:
PhotoScape



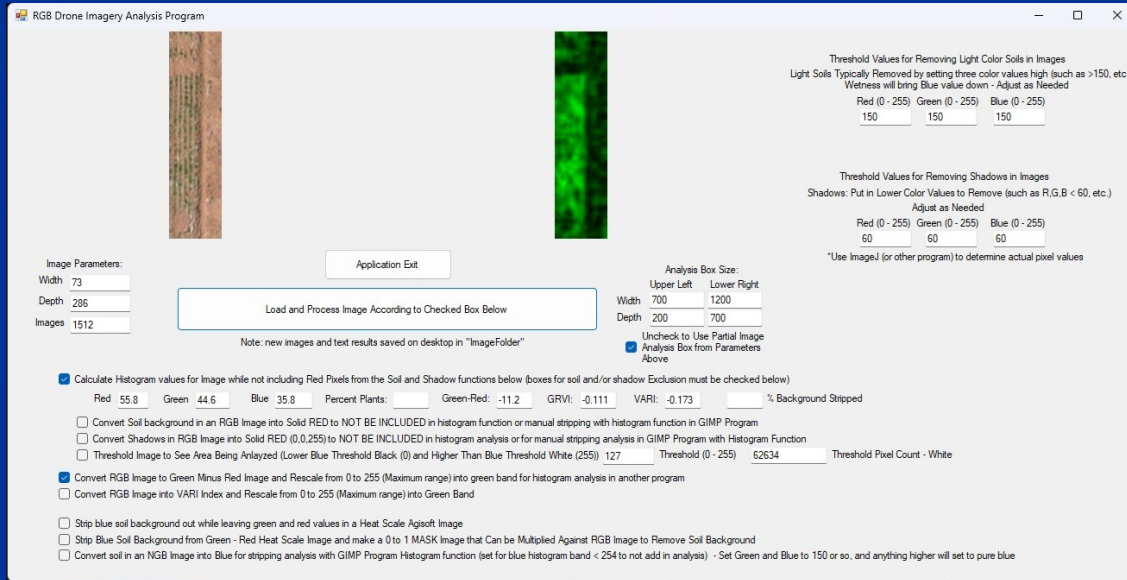
1512 Individual
Plot Images



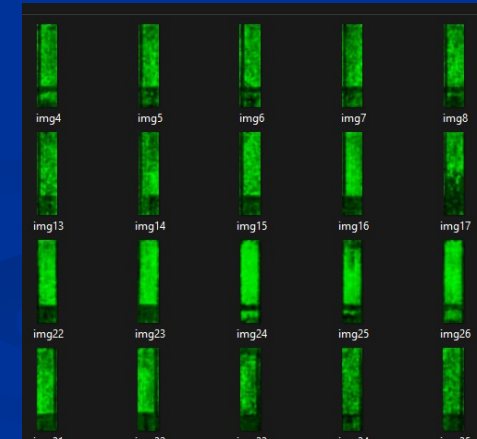
Page 2:

Output and Resultant Images:

Drone Conversion Program:



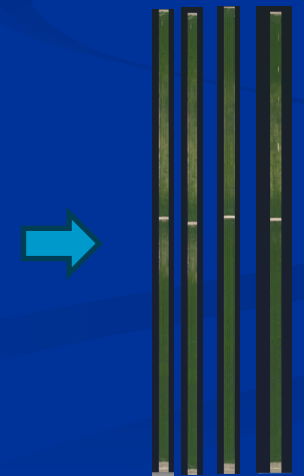
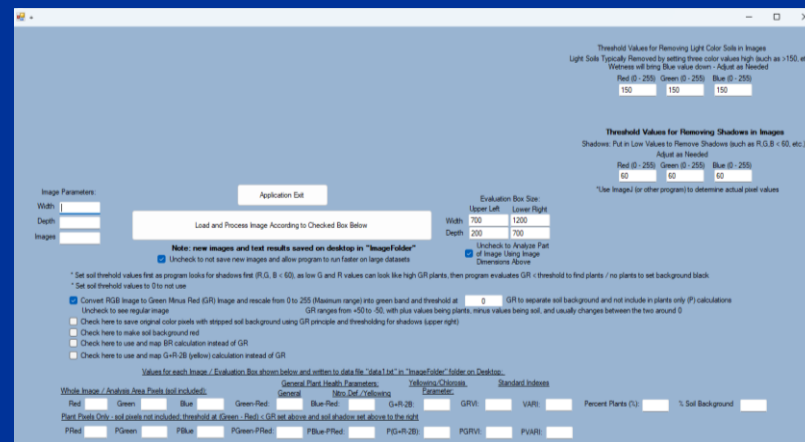
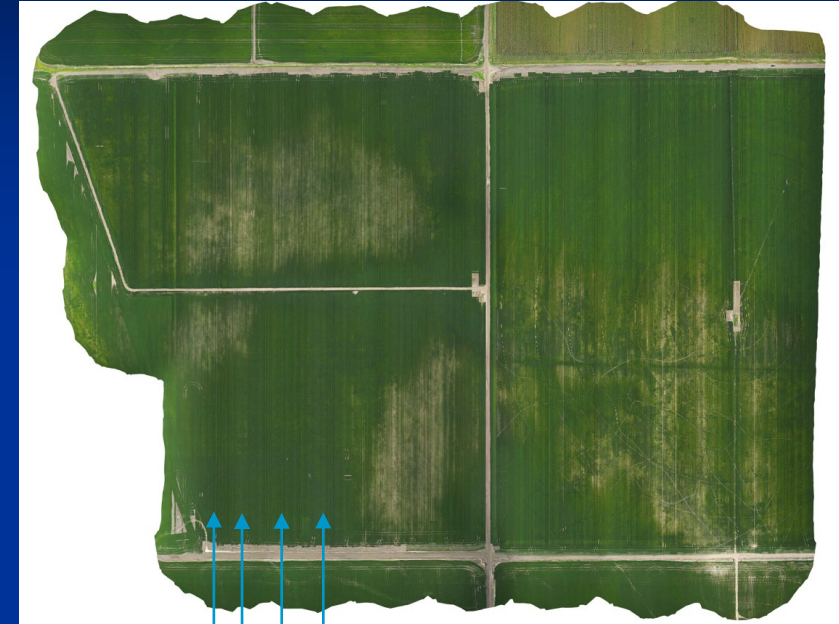
```
Red Green Blue GR-RD GRVI VARI %Plants %Background
46.4 40.2 29.4 -6.2 -0.07 -0.11 150.00 0.00
45.3 40.0 29.0 -5.3 -0.06 -0.09 150.00 0.00
45.8 40.2 29.2 -5.5 -0.06 -0.10 150.00 0.00
50.9 42.5 31.8 -8.4 -0.09 -0.14 150.00 0.00
54.7 44.7 34.0 -10.0 -0.10 -0.15 150.00 0.00
54.4 44.3 33.6 -10.1 -0.10 -0.15 150.00 0.00
52.5 43.2 33.1 -9.2 -0.10 -0.15 150.00 0.00
51.7 43.1 32.9 -8.6 -0.09 -0.14 150.00 0.00
52.2 43.9 33.1 -8.3 -0.09 -0.13 150.00 0.00
53.3 44.8 33.8 -8.5 -0.09 -0.13 150.00 0.00
54.4 45.3 34.7 -9.1 -0.09 -0.14 150.00 0.00
54.7 45.0 34.9 -9.6 -0.10 -0.15 150.00 0.00
55.4 46.0 36.0 -9.4 -0.09 -0.14 150.00 0.00
53.4 44.8 35.1 -8.6 -0.09 -0.14 150.00 0.00
50.1 43.1 32.5 -7.0 -0.08 -0.12 150.00 0.00
47.4 42.0 31.4 -5.5 -0.06 -0.09 150.00 0.00
55.2 45.7 35.9 -9.5 -0.09 -0.15 150.00 0.00
43.2 39.8 28.6 -3.4 -0.04 -0.06 150.00 0.00
45.3 41.4 29.7 -3.9 -0.05 -0.07 150.00 0.00
45.4 41.3 29.6 -4.1 -0.05 -0.07 150.00 0.00
45.8 41.9 29.7 -4.0 -0.05 -0.07 150.00 0.00
43.8 40.8 29.5 -3.0 -0.04 -0.05 150.00 0.00
37.8 36.7 25.7 -1.2 -0.02 -0.02 150.00 0.00
27.6 30.2 19.5 2.5 0.04 0.07 149.99 0.00
39.2 37.3 26.4 -1.9 -0.02 -0.04 150.00 0.00
37.5 37.2 25.6 -0.4 0.00 -0.01 150.00 0.00
43.6 41.0 29.5 -2.6 -0.03 -0.05 150.00 0.00
47.3 42.9 31.7 -4.5 -0.05 -0.08 149.97 0.00
51.9 45.4 35.0 -6.6 -0.07 -0.11 150.00 0.00
52.3 45.7 35.7 -6.6 -0.07 -0.11 150.00 0.00
51.2 44.5 34.1 -6.7 -0.07 -0.11 150.00 0.00
50.3 43.7 33.4 -6.6 -0.07 -0.11 150.00 0.00
55.7 46.1 36.5 -9.6 -0.09 -0.15 150.00 0.00
55.2 46.1 36.1 -9.1 -0.09 -0.14 150.00 0.00
```



- Process took about 60 minutes to perform (first time)

Remote Sensing Activities:

- Weekly Assessment of Soybean fields for Chlorosis effects using remote sensing drones:
 - Flew two large production fields every two weeks (9 dates) during the growing season to record high chlorosis effects from manganese
 - 200 acres
 - Evaluate for quantitative change



Red	Green	Blue	GR	BR	GR2B	GRVI	VARI	%Plants	%Background	pRed	pGreen	pBlue	pGR	pBR	pGR2B	pGRVI	pVARI
78.0	90.9	57.3	22.1	-19.5	61.1	0.126	0.186	67.48	32.5252	0.65	0.42	1.13	-0.8	34.5	0.118	0.179	78.0
73.1	94.1	54.2	21.0	-18.9	58.8	0.125	0.186	64.18	35.8255	0.67	0.43	1.13	-0.5	36.0	0.106	0.163	73.1
69.4	89.9	52.1	20.4	-17.3	55.1	0.128	0.191	61.85	38.1555	0.68	0.44	1.13	-1.3	36.0	0.108	0.168	69.4
68.2	88.2	51.0	20.0	-17.2	54.3	0.128	0.198	61.90	38.1053	0.66	0.42	1.12	-1.4	35.6	0.107	0.165	68.2
67.5	88.5	49.2	21.0	-18.4	57.7	0.135	0.196	64.69	35.3152	0.64	0.40	1.12	-1.9	36.4	0.108	0.165	67.5
74.4	94.4	54.5	20.0	-19.9	59.8	0.118	0.175	64.68	35.3243	0.53	0.34	0.99	-0.1	28.1	0.102	0.158	74.4
78.2	98.6	56.6	20.5	-21.5	63.9	0.116	0.170	65.88	34.1251	0.62	0.39	1.13	-1.5	34.3	0.099	0.153	78.2
75.7	95.3	55.8	19.6	-19.9	59.5	0.115	0.178	62.28	37.7256	0.69	0.41	1.12	-0.8	37.4	0.102	0.158	75.7
64.1	87.7	48.1	23.6	-16.0	55.6	0.155	0.227	66.27	33.7349	0.63	0.39	1.13	-0.9	33.5	0.121	0.188	64.1
65.3	89.5	48.7	24.2	-16.5	57.3	0.157	0.229	68.88	31.1246	0.59	0.37	1.12	-0.5	32.2	0.124	0.191	65.3
69.7	92.0	51.1	22.4	-18.6	59.6	0.138	0.202	65.53	34.4744	0.55	0.35	1.10	-0.8	29.0	0.111	0.171	69.7
66.4	89.5	51.4	23.1	-15.0	53.2	0.148	0.221	66.18	33.8247	0.66	0.39	1.12	-0.8	29.5	0.118	0.186	66.4
65.5	88.6	49.9	23.0	-15.6	54.3	0.149	0.221	64.79	35.2149	0.62	0.40	1.13	-0.4	31.9	0.117	0.182	65.5
64.2	87.1	49.0	22.9	-15.2	53.4	0.152	0.224	64.85	35.1550	0.64	0.41	1.12	-0.5	32.7	0.118	0.184	64.2
65.5	88.6	48.6	23.1	-16.9	56.8	0.158	0.219	67.32	32.6848	0.61	0.38	1.12	-1.0	33.3	0.116	0.178	65.5
68.9	90.7	52.7	21.8	-16.2	54.2	0.136	0.204	68.65	31.3543	0.54	0.31	1.07	-0.7	25.7	0.110	0.174	68.9
69.0	91.2	52.4	22.2	-16.5	55.3	0.139	0.207	68.35	31.6549	0.61	0.40	1.12	-0.8	29.9	0.110	0.174	69.0
67.9	90.0	50.5	22.1	-17.4	57.0	0.140	0.206	65.93	34.0733	0.66	0.42	1.13	-1.0	34.6	0.111	0.172	67.9
62.5	85.3	48.2	22.8	-14.3	51.4	0.154	0.229	66.14	33.8649	0.63	0.41	1.13	-0.6	31.1	0.120	0.189	62.5
64.3	87.9	47.8	23.6	-16.5	56.7	0.155	0.226	67.41	32.5948	0.61	0.38	1.13	-0.9	33.0	0.123	0.189	64.3
65.3	89.4	47.7	23.7	-17.6	58.9	0.154	0.222	69.18	30.8243	0.55	0.34	1.12	-0.9	30.3	0.122	0.187	65.3
68.6	91.6	48.2	23.1	-20.3	63.7	0.144	0.206	68.78	31.2240	0.67	0.41	1.13	-0.8	27.0	0.103	0.159	68.6
72.5	94.9	50.9	23.4	-21.6	65.6	0.134	0.193	64.95	35.0549	0.61	0.37	1.11	-1.1	34.9	0.107	0.162	72.5
67.8	91.5	50.0	23.7	-17.8	59.3	0.149	0.217	66.41	33.5949	0.62	0.39	1.13	-1.0	33.0	0.117	0.180	67.8
73.8	94.1	52.3	20.2	-21.6	63.4	0.121	0.175	61.22	38.7856	0.69	0.42	1.12	-1.3	41.6	0.103	0.154	73.8
73.2	92.0	51.4	18.8	-21.8	62.4	0.114	0.165	59.16	40.0456	0.68	0.41	1.12	-1.4	42.3	0.100	0.150	73.2
80.0	98.0	56.5	18.0	-23.4	64.9	0.101	0.148	60.87	39.1351	0.61	0.37	1.07	-1.3	42.4	0.095	0.142	80.0
82.3	98.5	59.1	16.2	-23.2	62.6	0.090	0.133	57.45	42.5554	0.62	0.40	1.11	-1.3	37.8	0.093	0.142	82.3
74.6	93.7	55.4	19.1	-19.3	57.6	0.113	0.169	63.24	36.7654	0.66	0.42	1.13	-1.2	36.4	0.101	0.156	74.6
71.6	90.3	52.9	18.7	-18.8	56.2	0.115	0.171	61.83	38.1756	0.69	0.43	1.12	-1.2	38.3	0.101	0.155	71.6
70.6	89.3	52.8	18.7	-17.8	54.3	0.117	0.174	61.66	38.3458	0.72	0.45	1.13	-1.1	39.7	0.103	0.158	70.6
72.1	90.2	52.3	18.0	-19.7	57.5	0.111	0.164	61.25	38.7554	0.66	0.41	1.11	-1.3	38.3	0.099	0.151	72.1
75.1	98.0	64.3	17.7	-18.0	55.4	0.108	0.162	61.05	38.0530	0.68	0.41	1.11	-0.8	37.2	0.101	0.157	75.1

Drone Demonstration at Multiple Field and Youth Career Days:

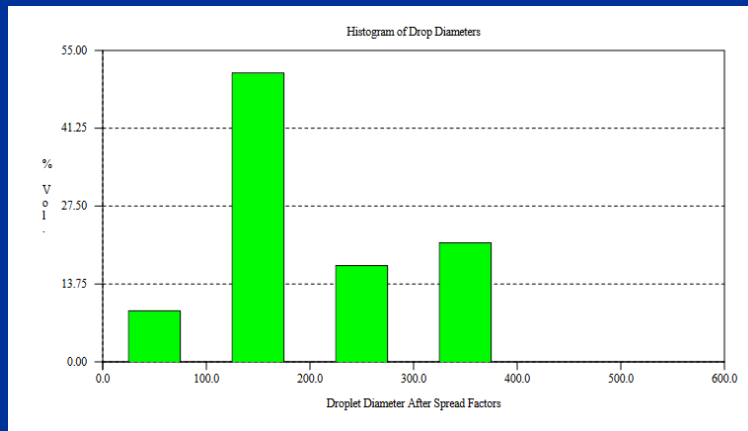
- 4 4-H and FAA Career Days:
 - Students allowed to fly drones
- 1 Field Day:
 - Dean Lee: Sprayer drone presentation and flight of centrifugal nozzles
- Multiple Farm Visits:
 - Sprayer drone demonstration flights



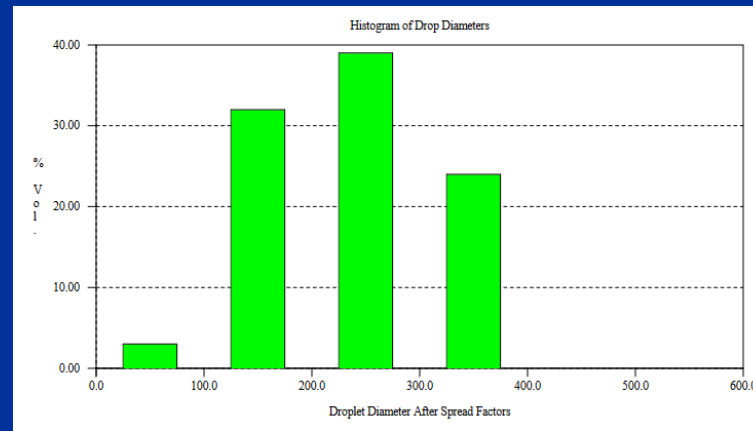
Droplet Spectrum of T40 @ 2 GPA:

- Largest mean droplet was 300 um:

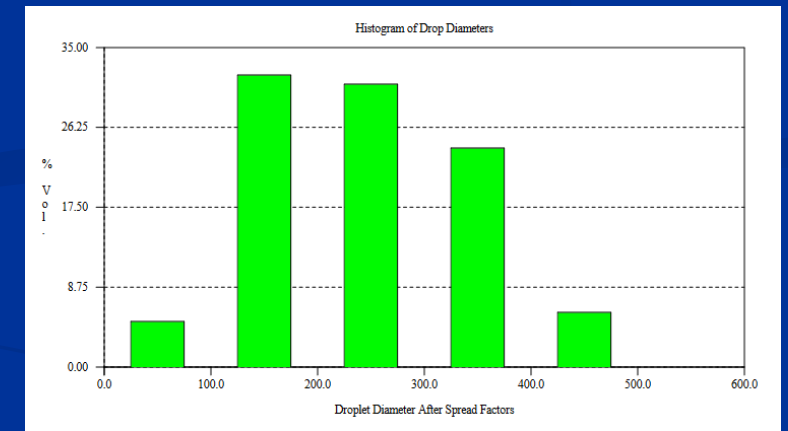
Extra fine wheel / Extra fine setting:



Extra fine wheel / Course setting:



Course wheel / Course setting:



DJI T40:

- T40 – rotary / centrifugal
 - Rotary / centrifugal nozzles:
 - Liquid disk spreaders that operate at different rotational speeds and have different disk; double cutter, coarse, etc.
- T30 – regular hydraulic orifice nozzles (XR, etc.)
 - AIXR11001 or TT11002 are best
 - Some cut off in the middle but depends upon flight speed

DJI T40:



DJI T30:

