

# In Canopy Application Uniformity Evaluation

Scott Bretthauer

Department of Agricultural and Biological  
Engineering

University of Illinois at Urbana-Champaign

# Uniformity test in corn

- Determine impact various factors have on application uniformity and deposition
  - Aircraft height and swath width
  - Weather
  - Spray solution
- Test in corn – impact of canopy on pattern



# Treatments

- 5 Aircraft flight parameters
  - 5 ft height/70 ft swath width
  - 10 ft height/70 ft swath width
  - 20 ft height/70 ft swath width
  - 10 ft height/60 ft swath width
  - 10 ft height/80 ft swath width
- 2 Times
  - Early morning
  - Mid afternoon
- 2 Spray solutions
  - Headline @ 6 fl oz per acre
  - Headline @ 6 fl oz per acre + 3% COC (morning only)



# Deposition test in corn

- 4 passes per replication – racetrack
- Variable replications per treatment, weather, spray
- Measured deposition on mylar line
  - Coefficient of variation (CV)
  - Deposition in micrograms
- AT502
  - w/4012 @ 8 degree
  - 38 Nozzles
  - 70 ft swath width
  - 150 mph

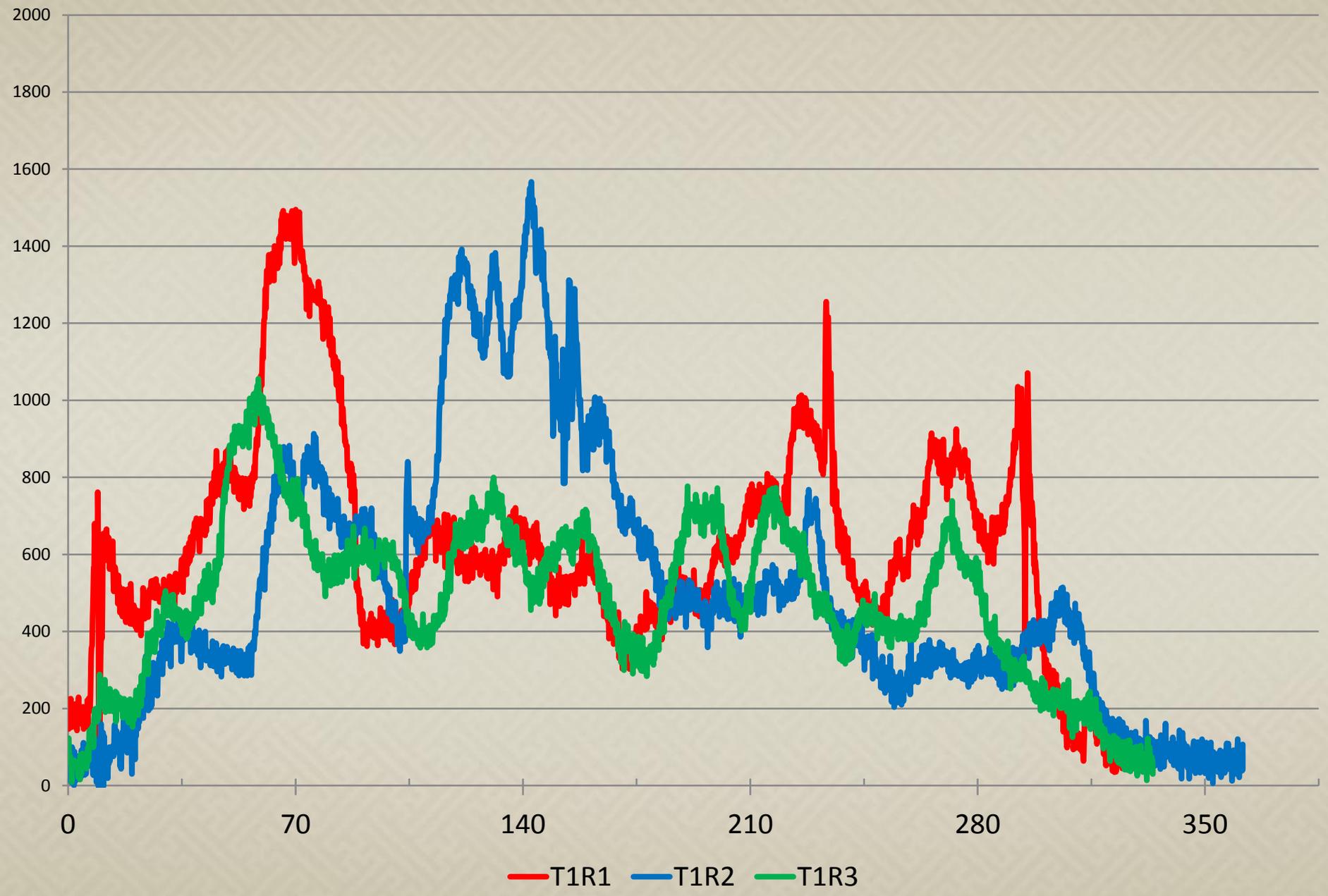


# Weather and replications

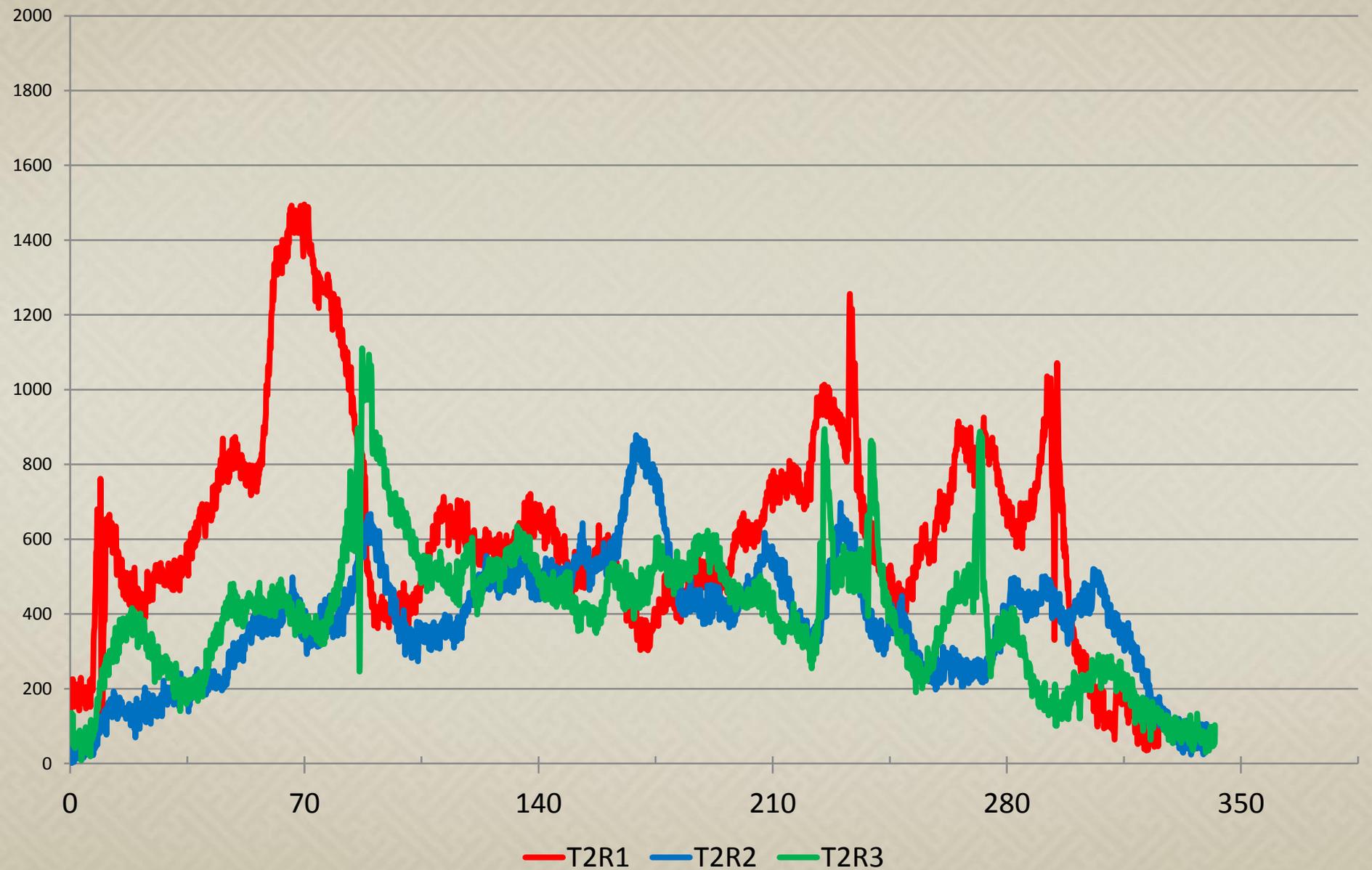
Time	Ave. temp	Ave. RH	Ave. wind	Max. wind	Trts.	Reps
AM	67° F	92%	0 mph	0 mph	1-5	2 (5)
PM	87° F	44%	0.4 mph	3 mph	1-5	3
AM (COC)	57° F	86%	0.4 mph	4 mph	1-3	3

- CV's in this test expected to be higher than when pattern testing
- Corn captures part of spray

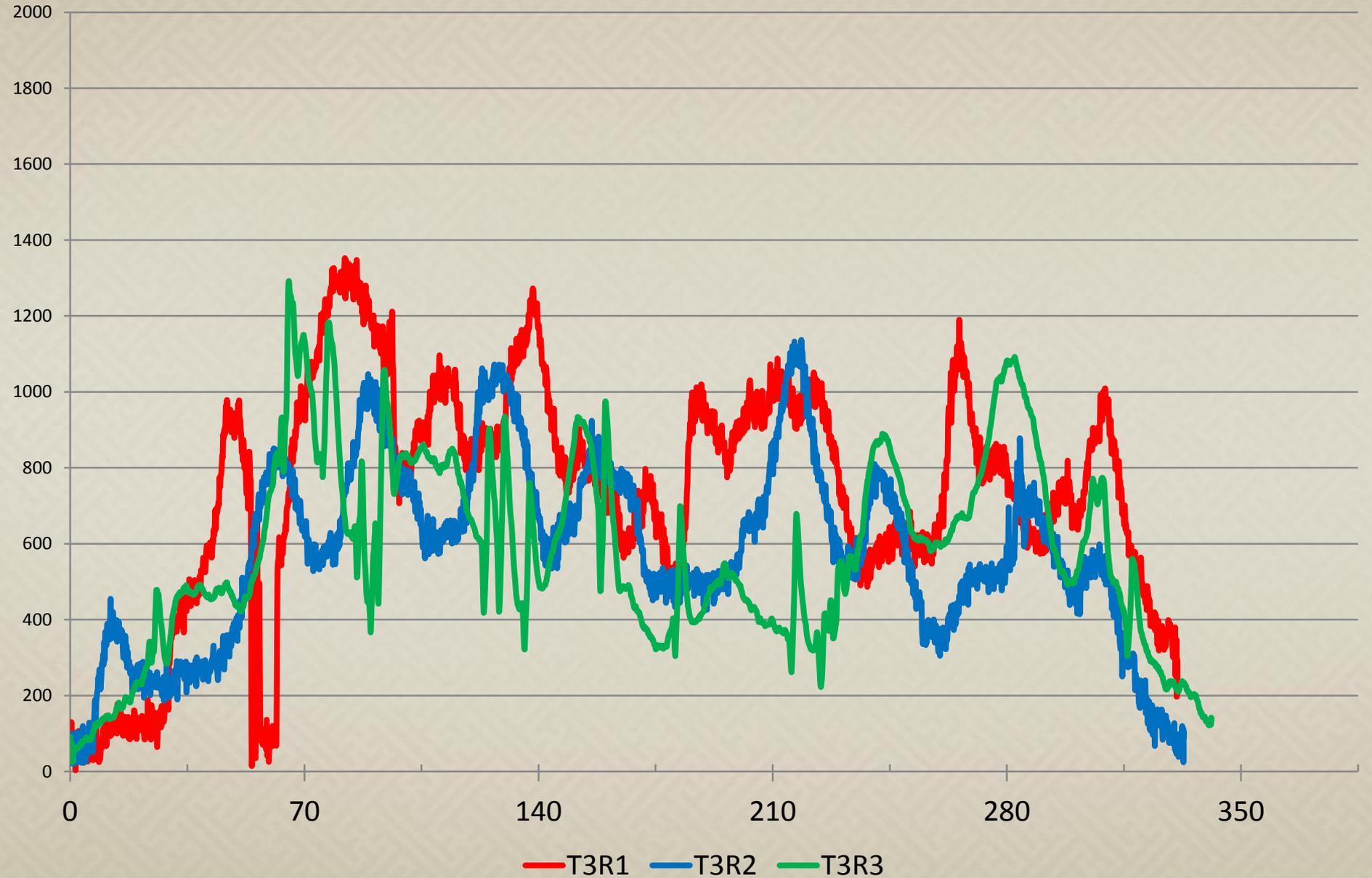
# 5/70/PM- Water



# 10/70/PM- Water



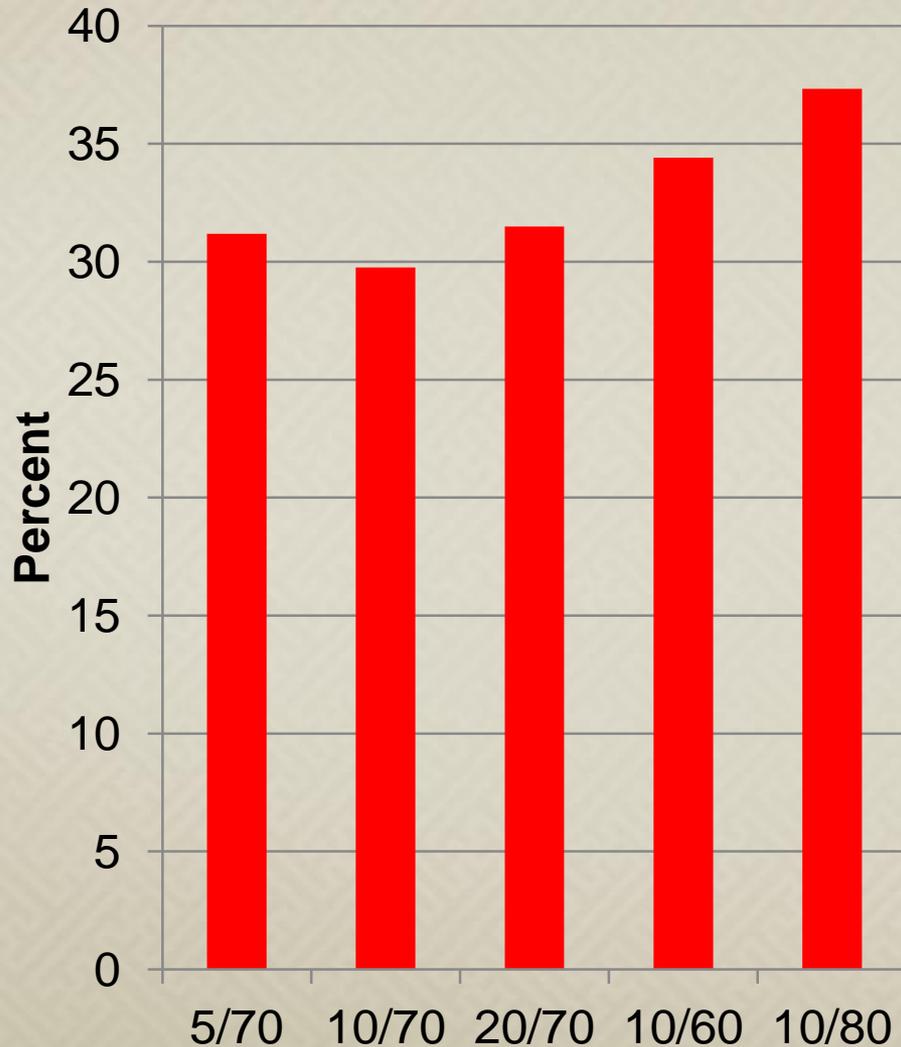
# 20/70/PM- Water



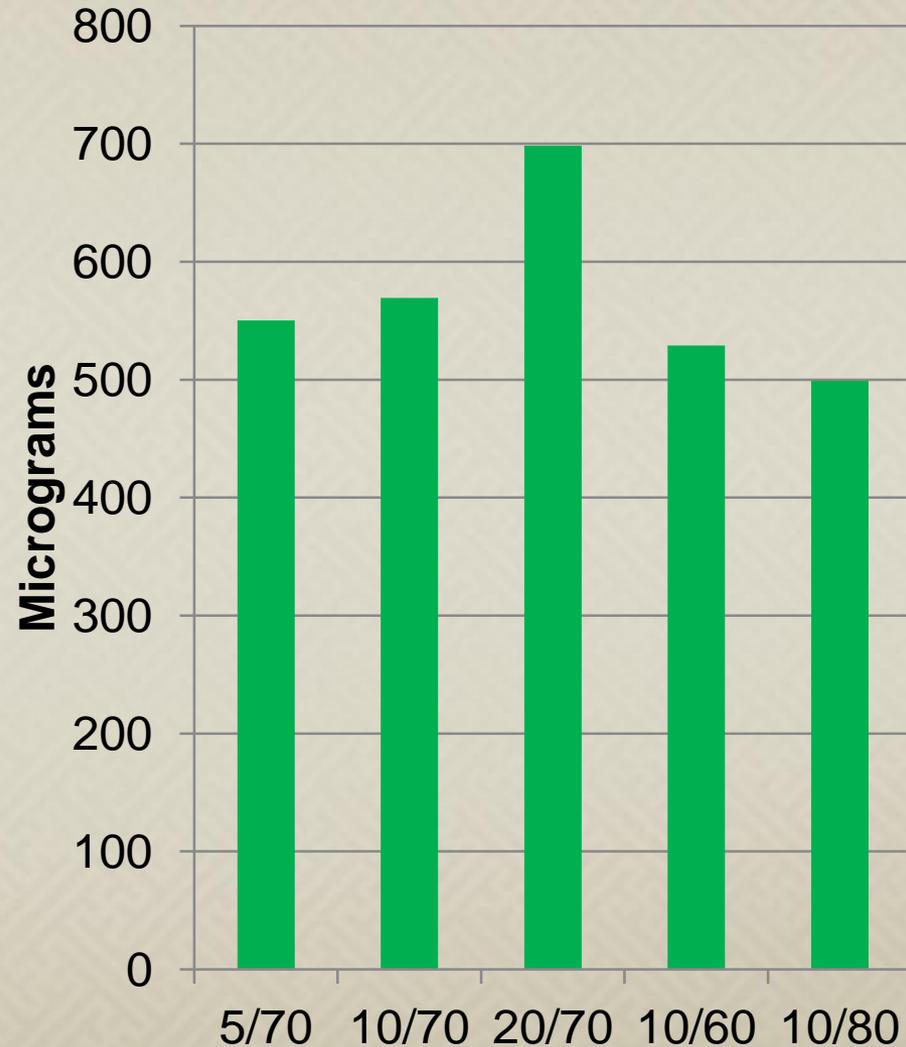
# Comparison of treatments 1-5

## AM and PM; water only

### Average CV



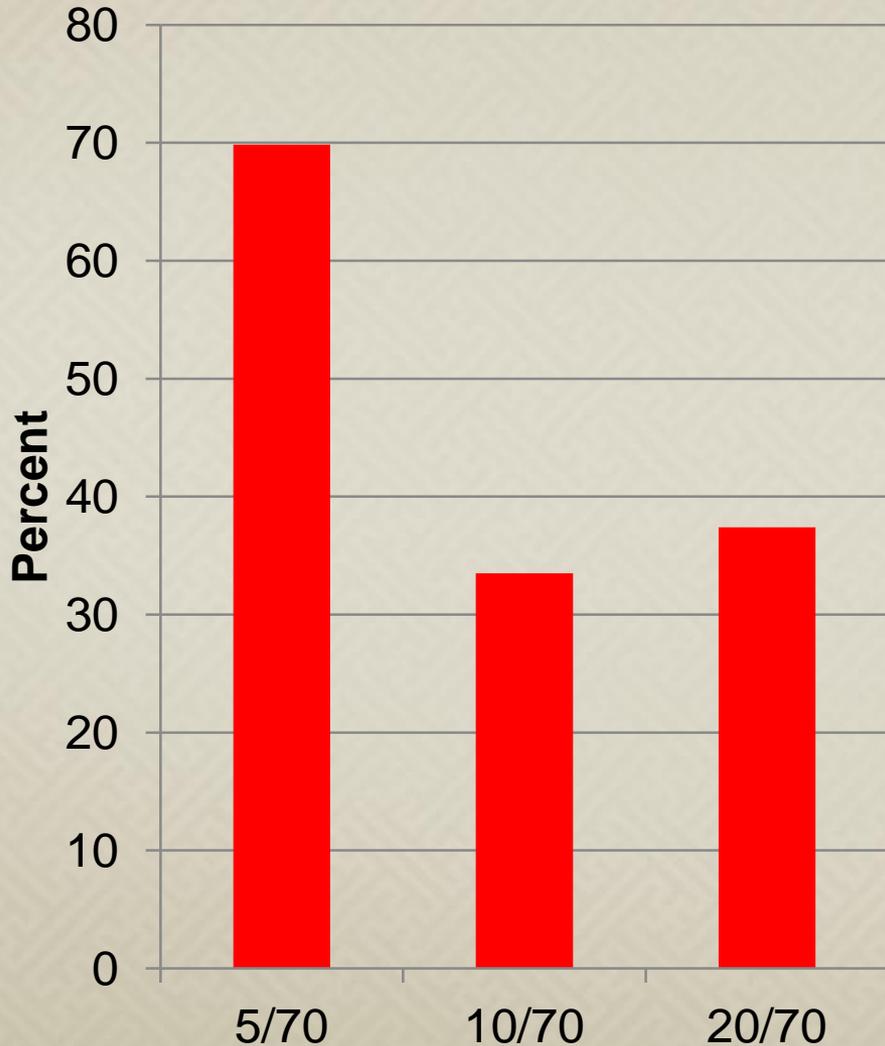
### Average Deposition



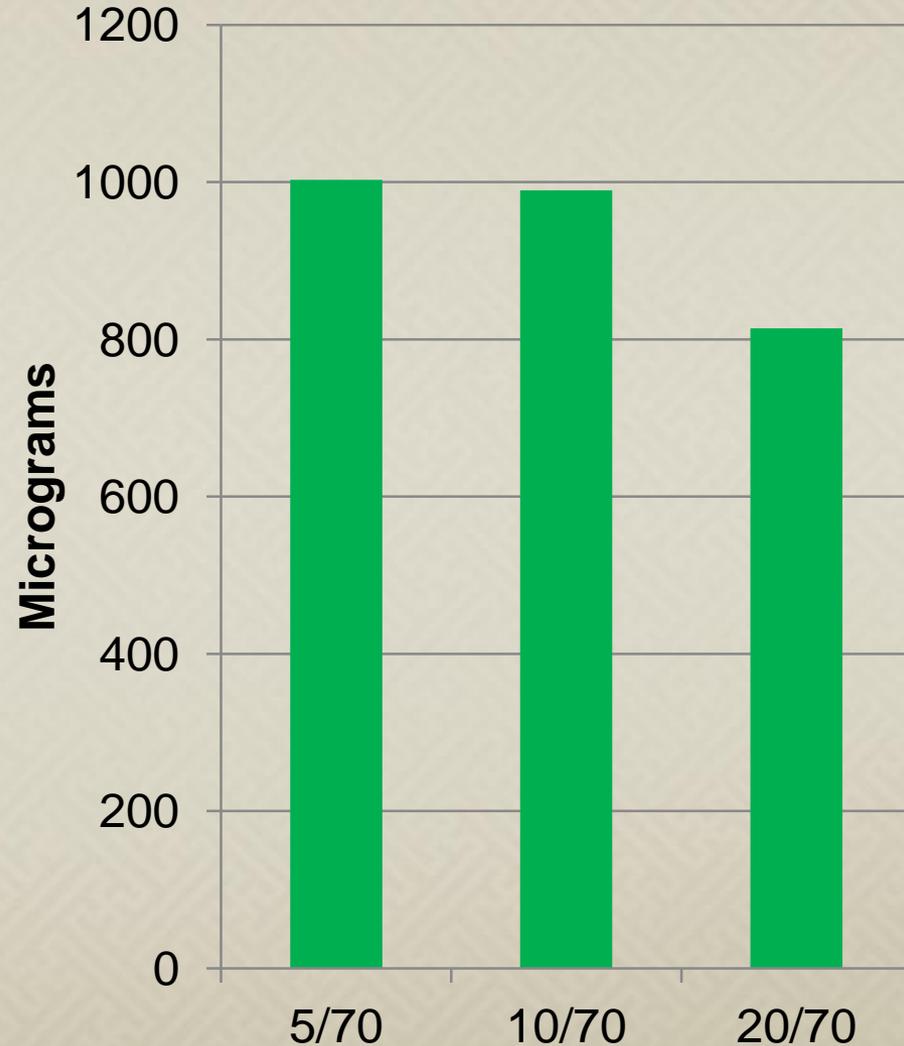
# Comparison of treatments 1-3

## AM only; COC only

### Average CV



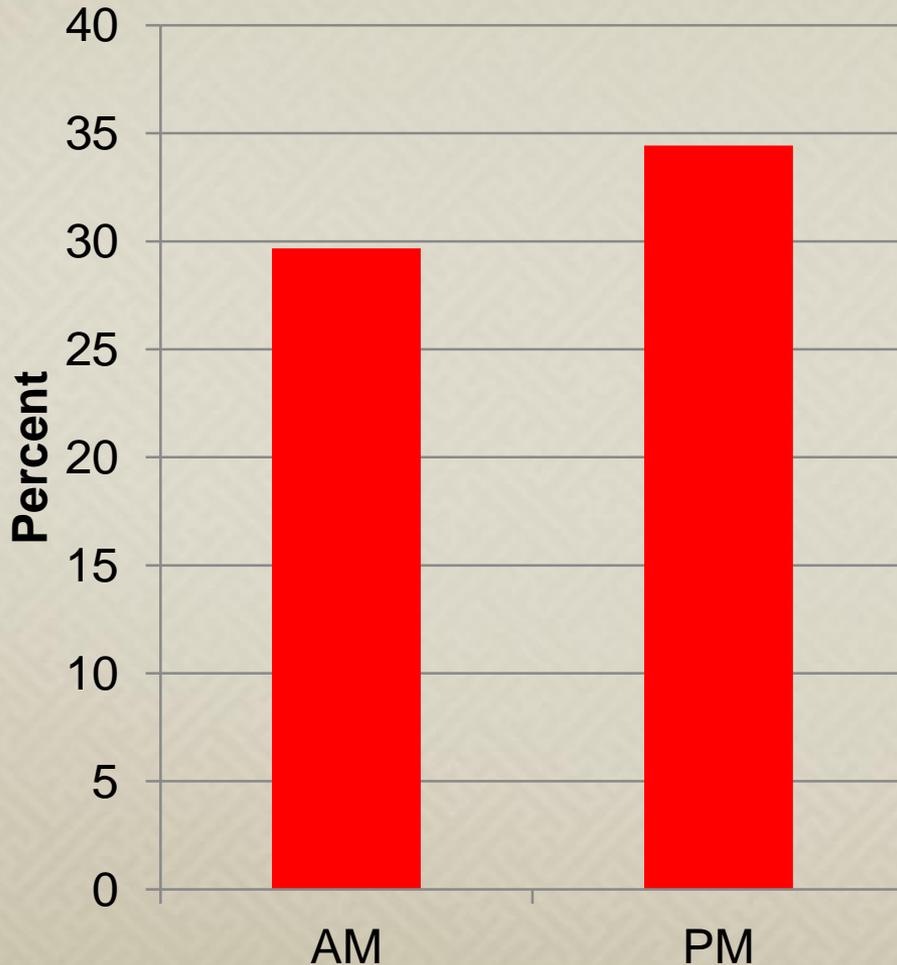
### Average Deposition



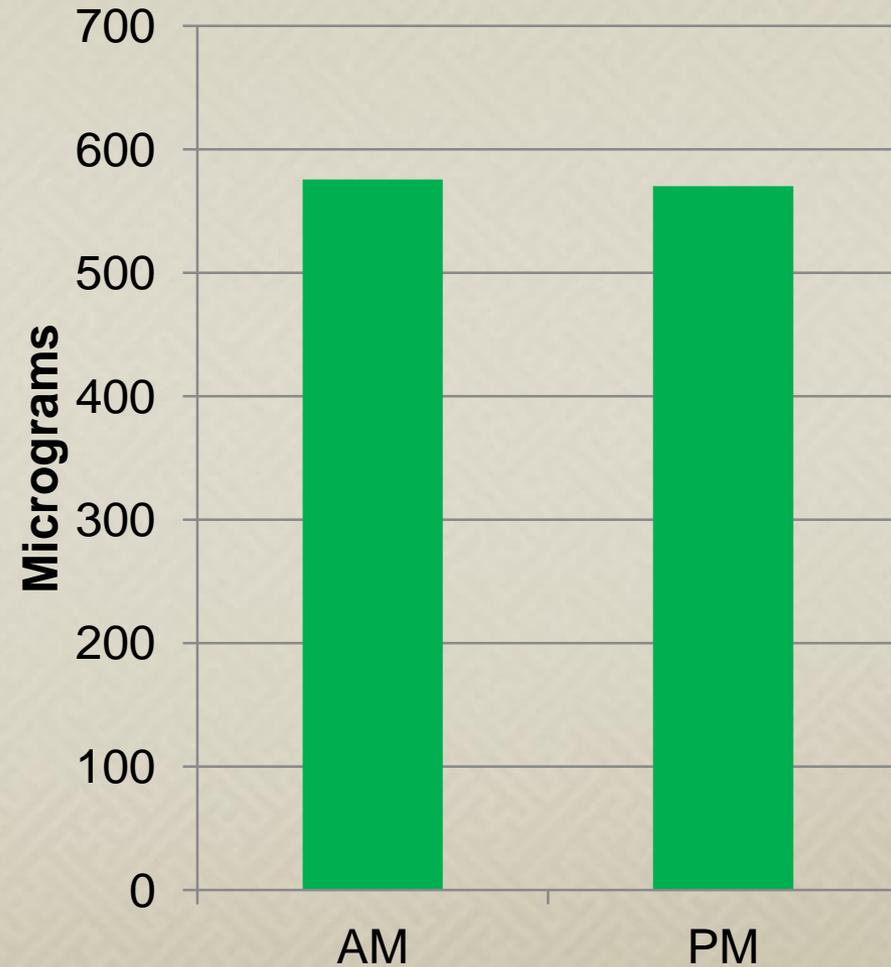
# Comparison of AM vs. PM

Primarily differences in temp and humidity; Treatments 1-5; water only

## Average CV



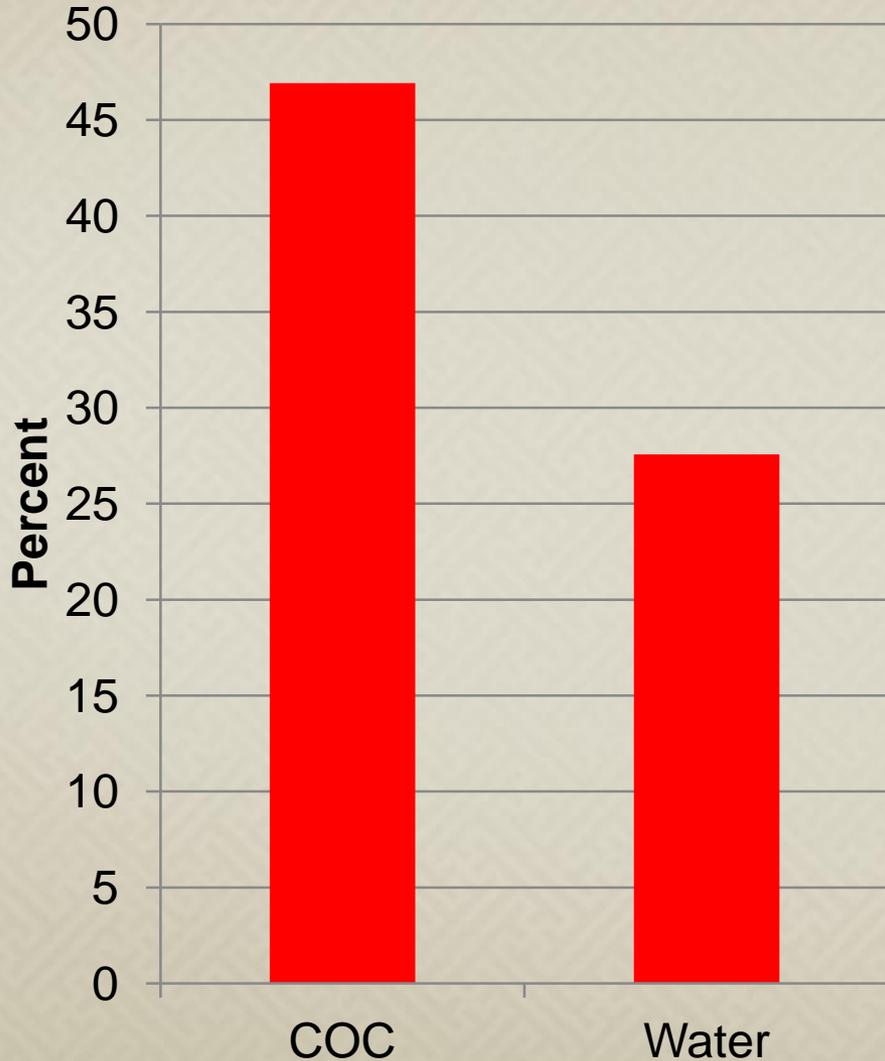
## Average Deposition



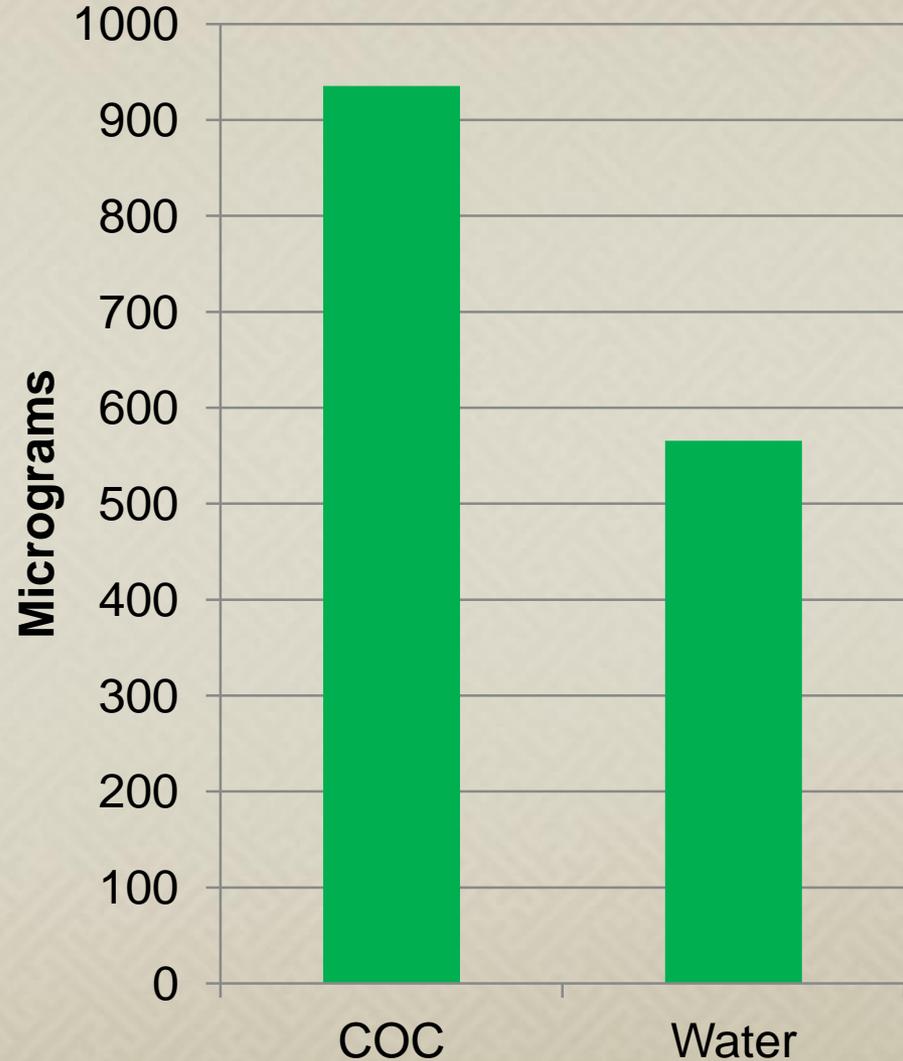
# Comparison of water vs. COC

## Treatments 1-3 - AM only

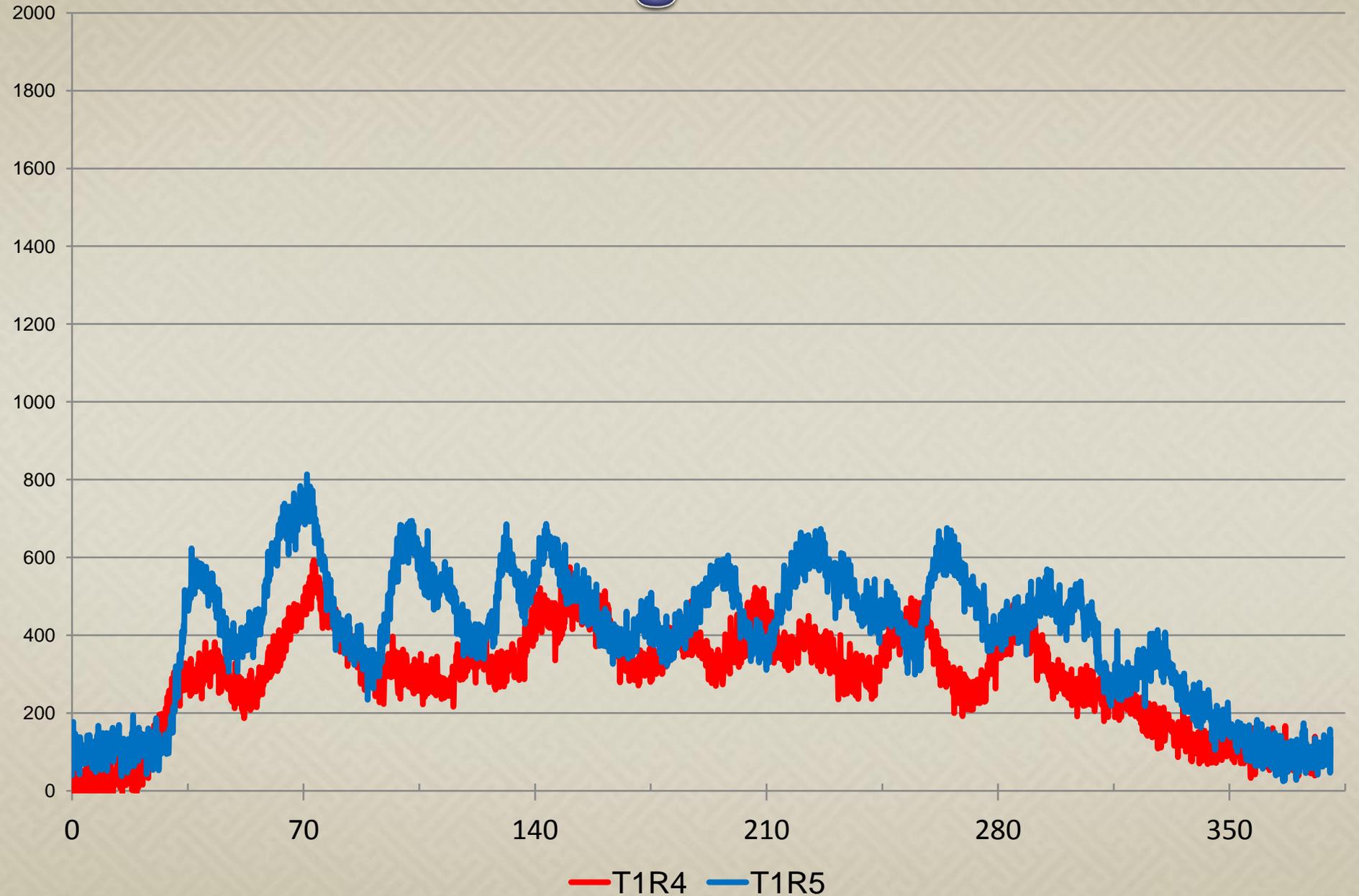
### Average CV



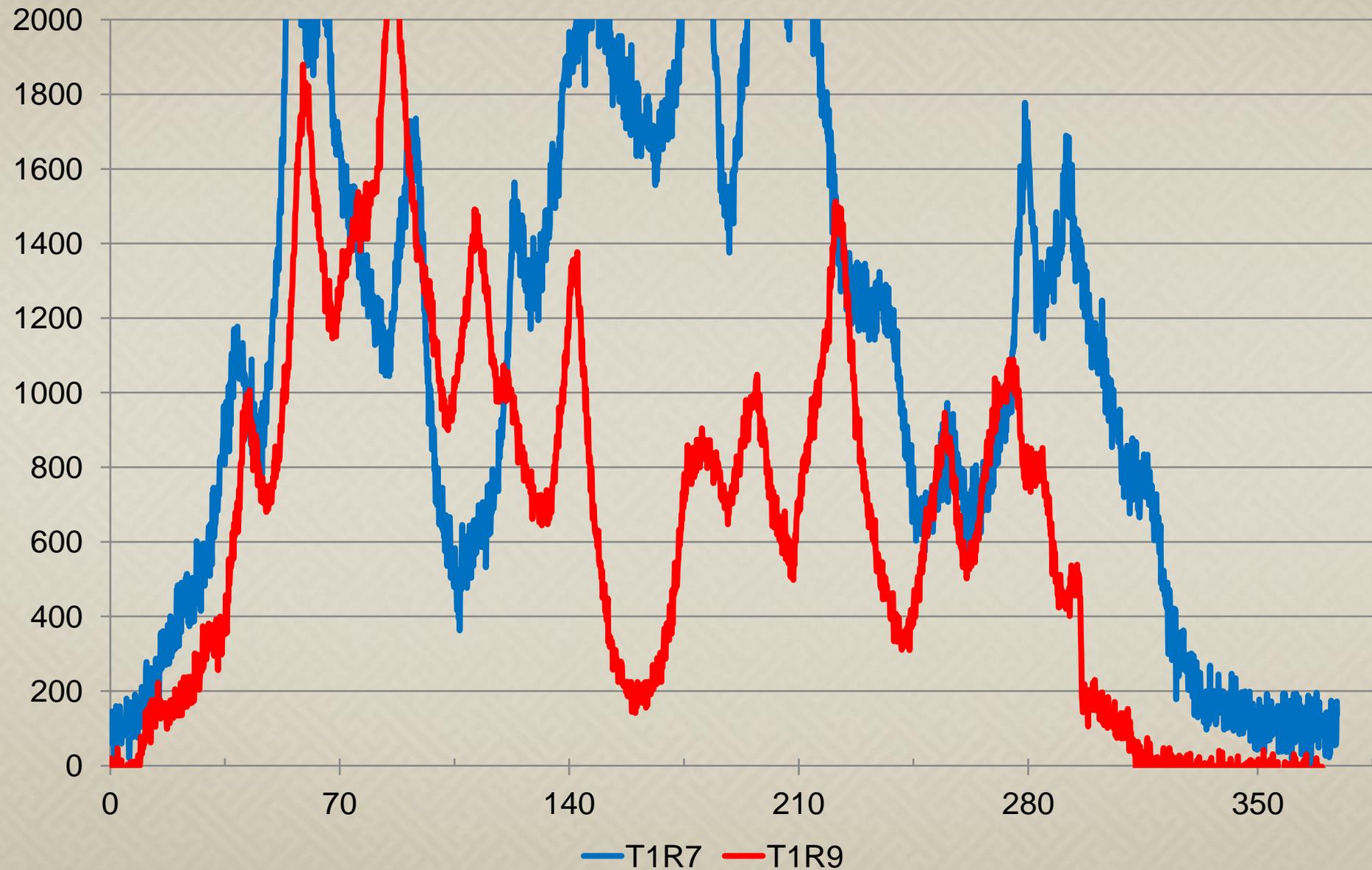
### Average Deposition



# 5/70 – morning - water

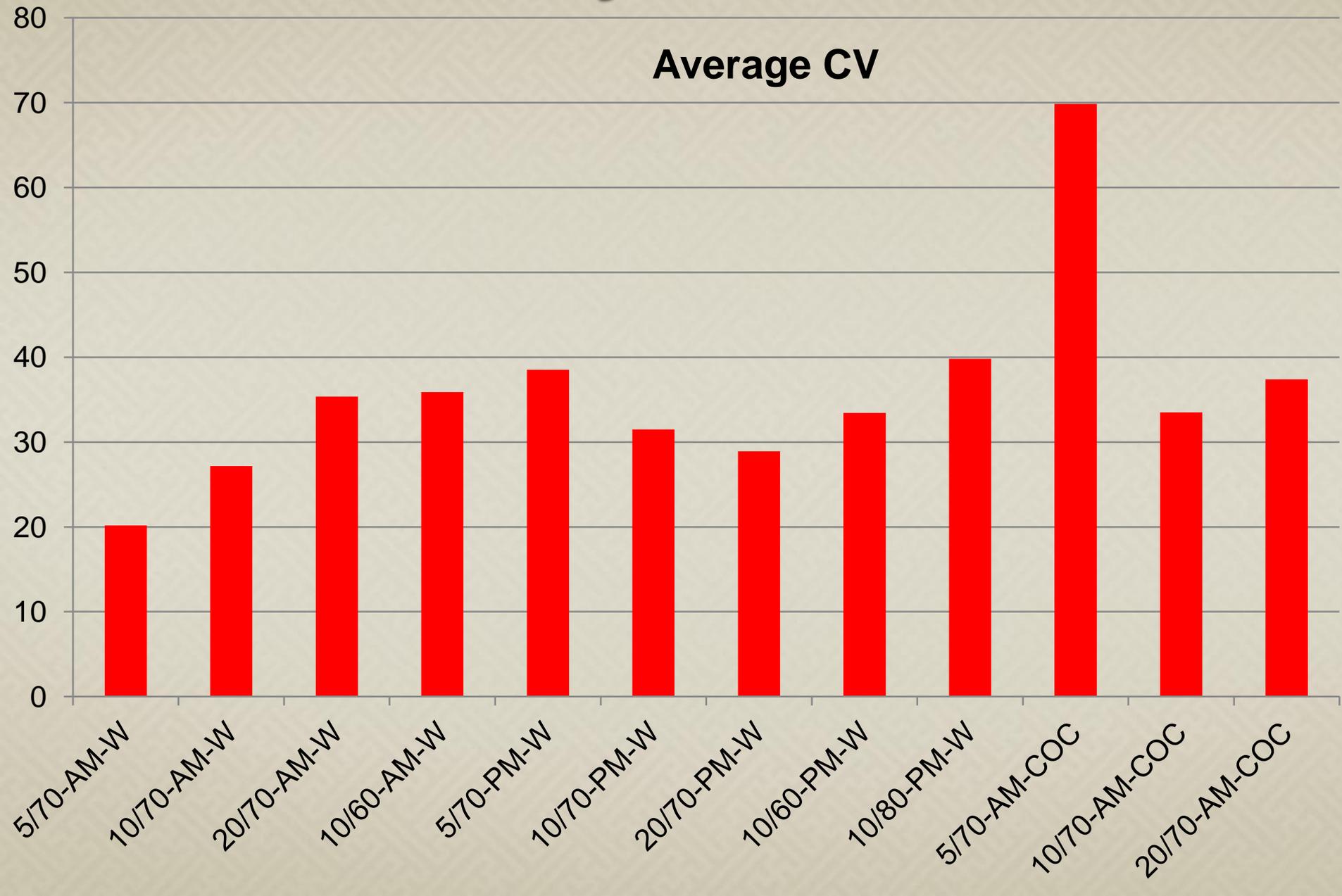


# 5/70 – morning – COC

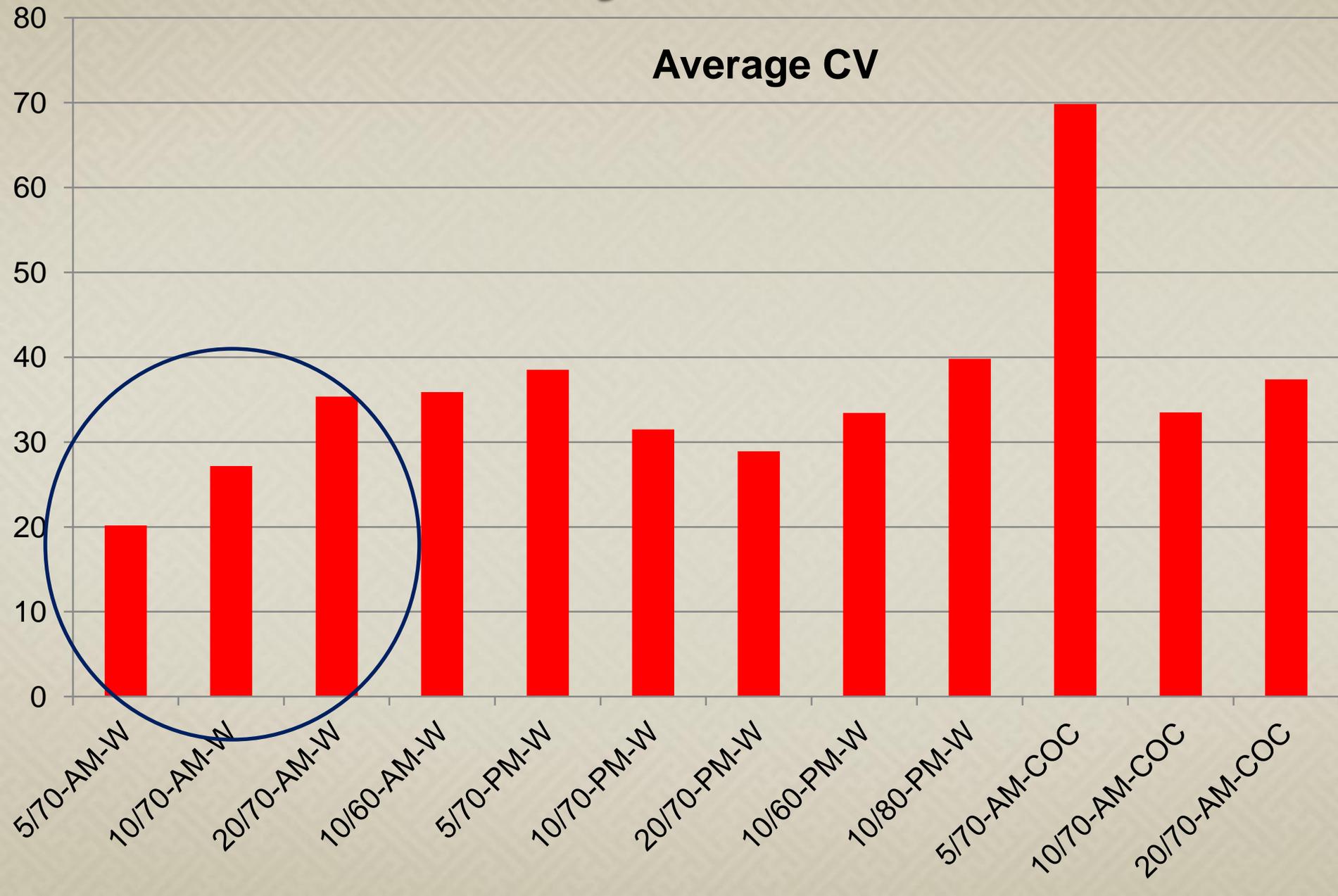


# Overall summary

## Average CV

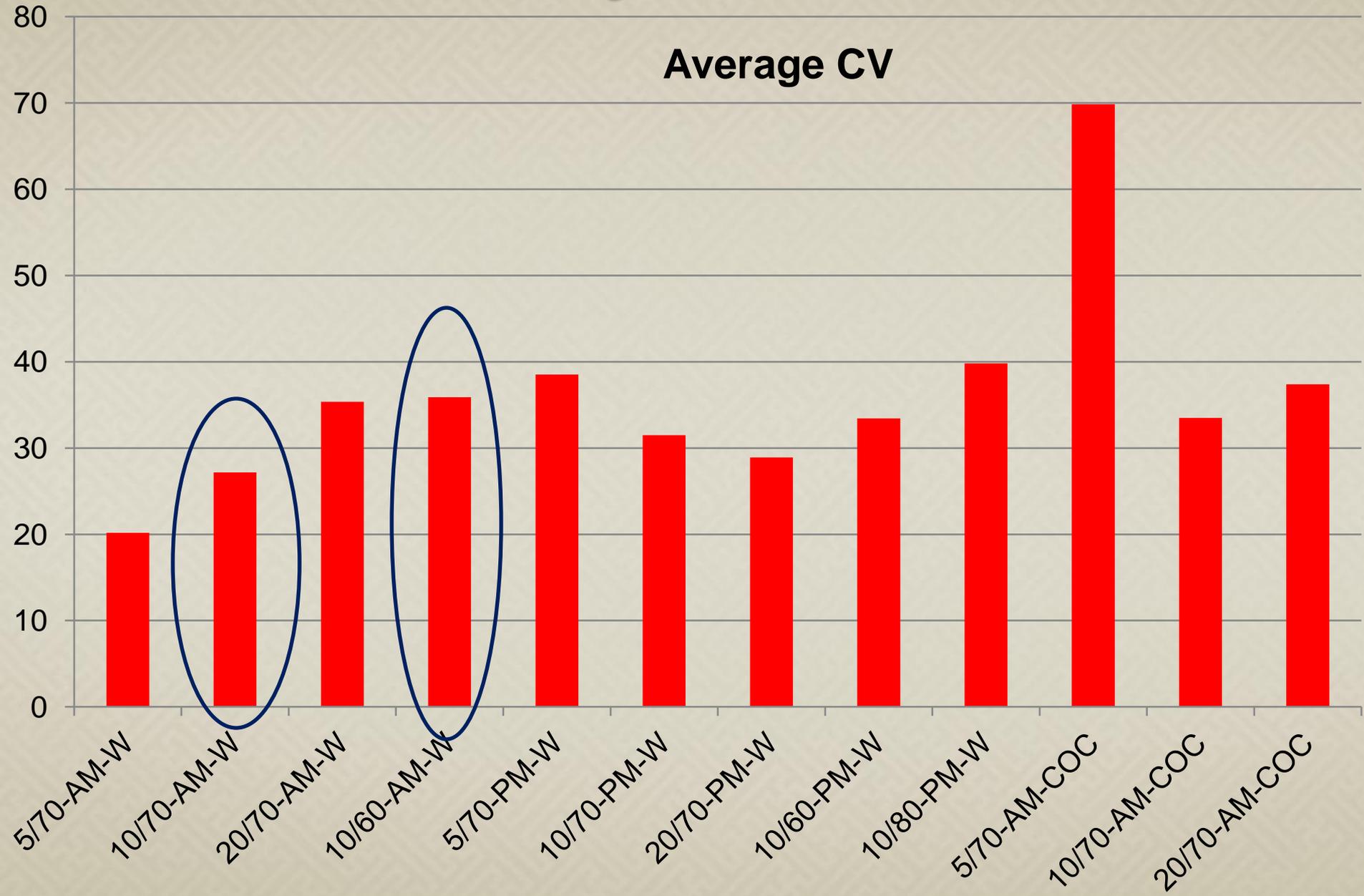


# Overall summary



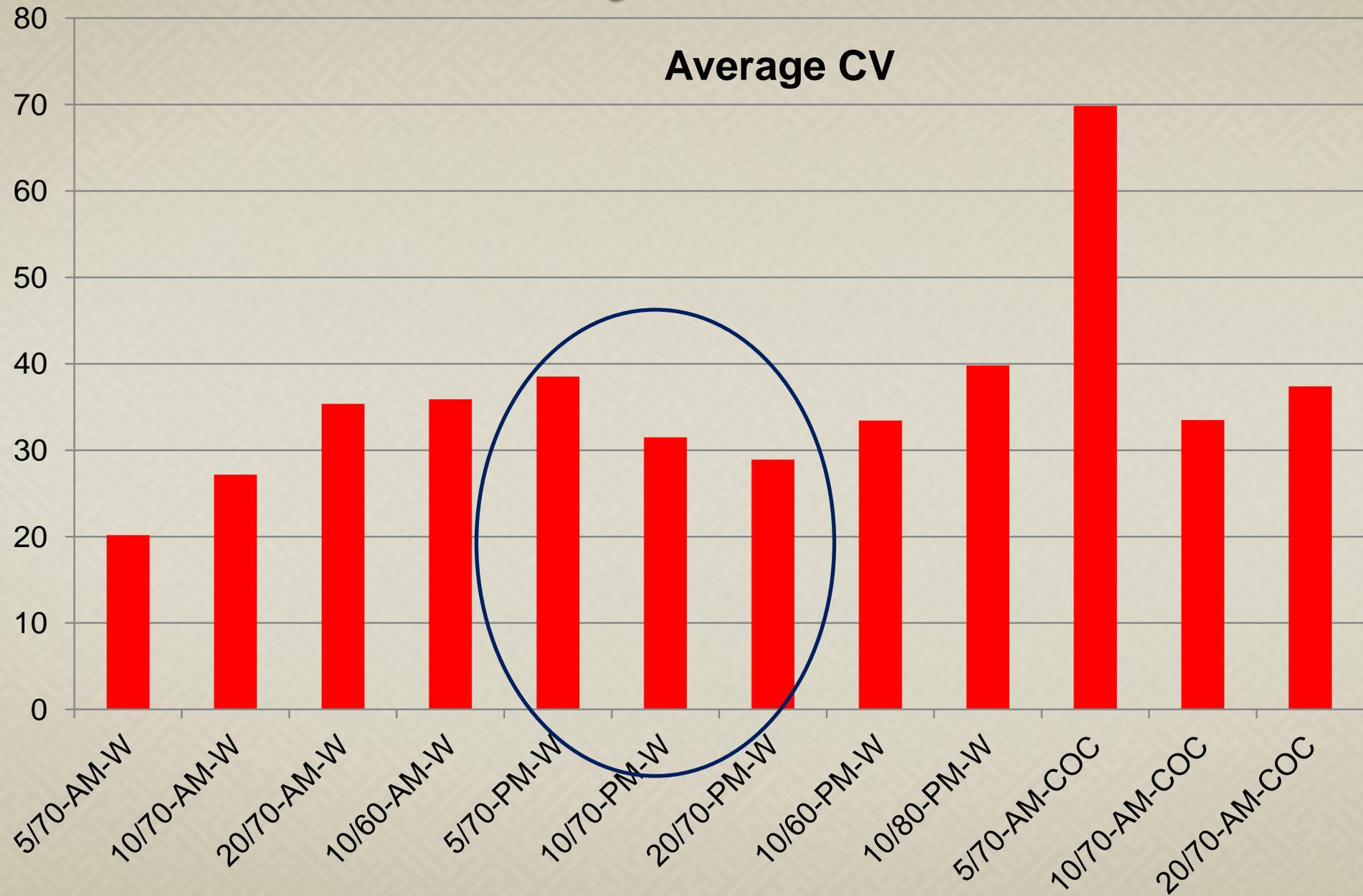
# Overall summary

## Average CV

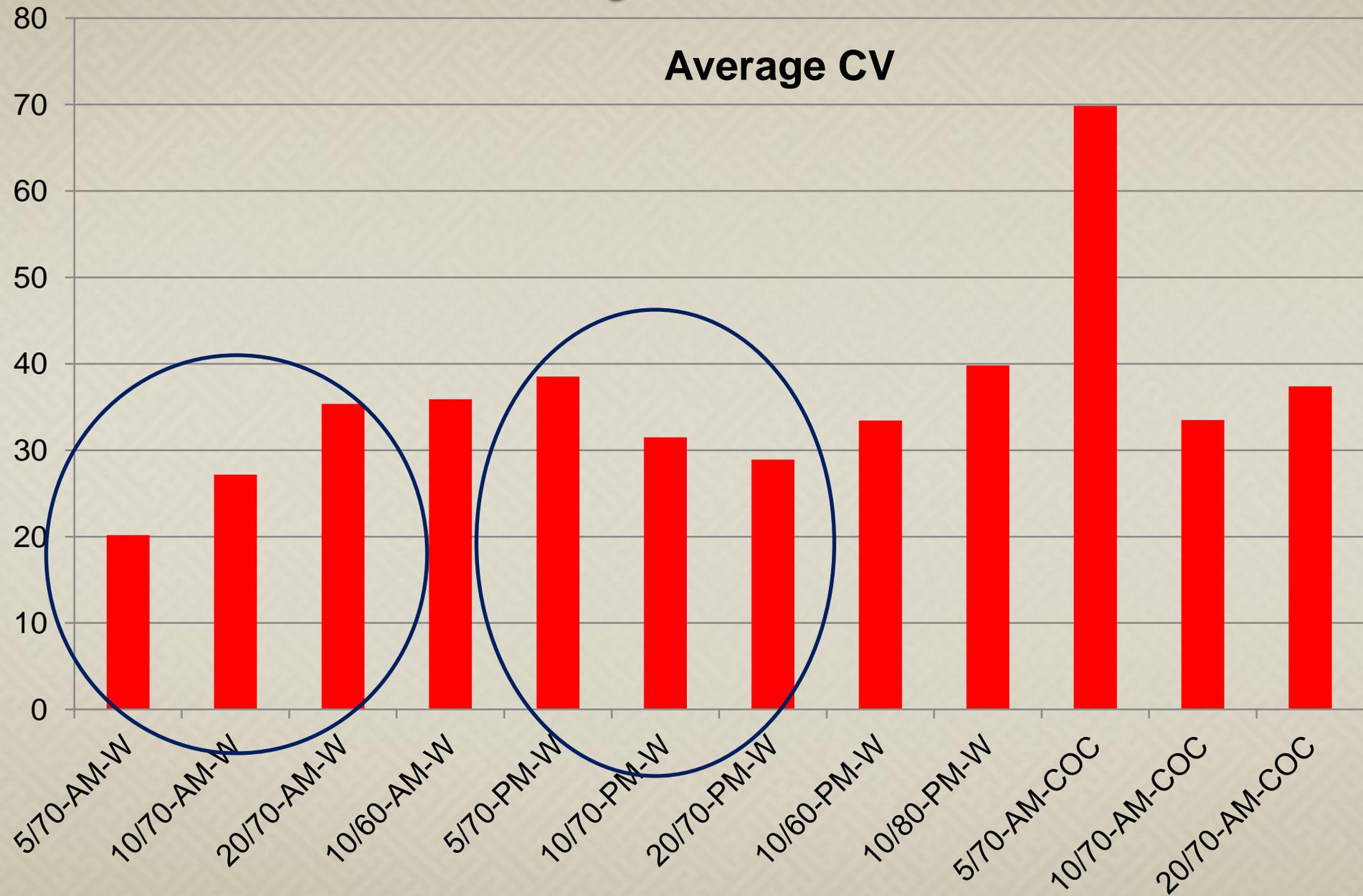


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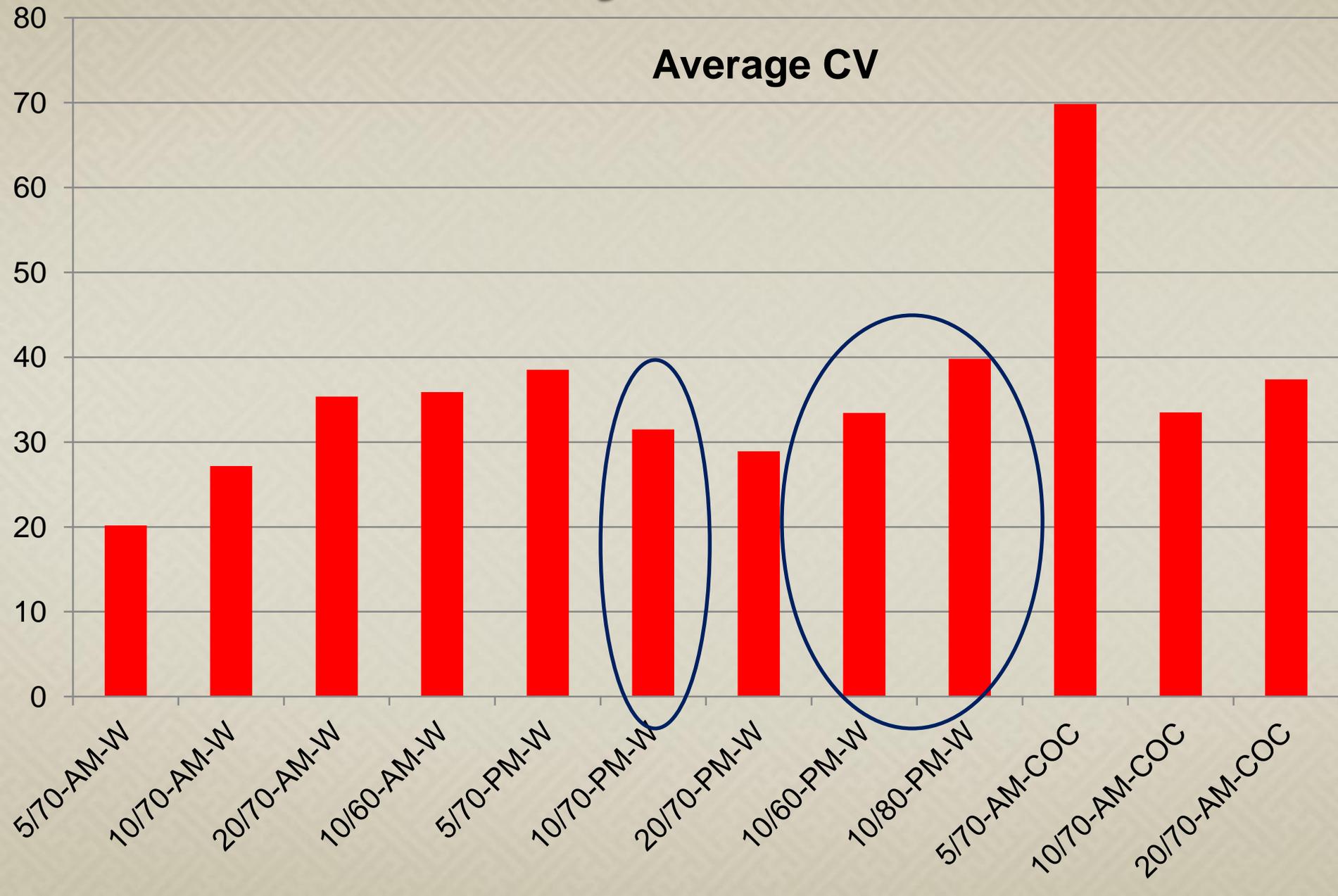
## Average CV



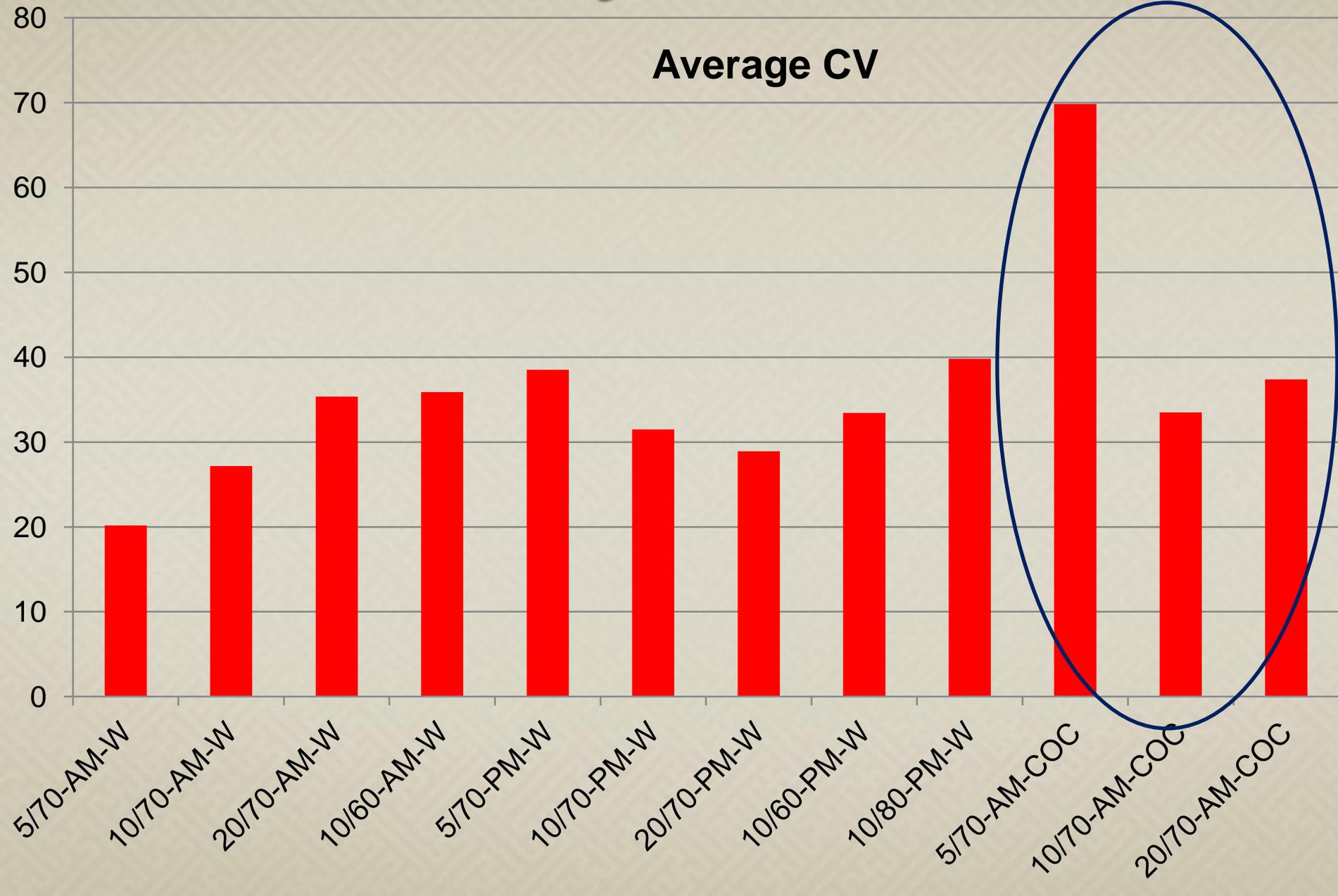
# Overall summary



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# Summary

- Narrowing or widening swath decreased application uniformity
- Application height between 5 and 20 feet did not appear to have a significant impact on application uniformity with water
- Application height of 5 feet decreased application uniformity with COC
- For AM applications, COC increased deposition and decreased application uniformity

# QUESTION?

Scott Bretthauer

[sbrettha@illinois.edu](mailto:sbrettha@illinois.edu)

(217) 722-2212