What QA’s and Study Directors need to know about Crops

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THE ANSWER TO THE QUESTION?

- Not Much--- Next Speaker!!!
The challenge is that there is too much to know. It is impossible for one person to know everything about every crop everywhere.
KNOW YOUR PEANUTS

ARACHIS HYPOGAEA

PACKING PEANUTS

MARSHMALLOWS

CIRCUS PEANUTS

CHARLIE BROWN
KNOWING

- Probably the most important thing is to recognize the extent of your knowledge

- You Don’t Know What you Don’t Know...
HARVEST MATURE TOMATOES!

- Fresh Market tomatoes are picked green
- Hot House fruit are red, and usually in clusters
- Processing tomatoes are high solids and overripe with some rotting
- Cherry and Pear types are picked at full color
- “Vine Ripe” are picked as early breakers
There is no shame to not knowing all this.

I am a field guy, and I don’t know the difference between a Mass Spec and an Erlenmeyer flask.
HERE IS A MASS WHICH IS IN SPEC
AND MR. MYER WITH HIS FLASK
TWO QUESTIONS

+ How much knowledge is a QA/ Study Director / Project Coordinator expected to have?
+ Where can this information be found?
QUESTION 1

What should a QA/ Study Director / Project Coordinator know about the Test System and the task at hand?

+ Enough to be competent to describe or evaluate the job at hand
+ Enough to know when to ASK for more information
COMPETENT IN THIS CASE MEANS??

- It means you should understand:
  - The terminology of the crop
    - breaker, pinhead square, layby, bagging and so on
  - The general life cycle of the crop
    - Seed germination, cotyledon, V-2, tiller, early flower, heading, “milky stage”, quarter sized florets, anthesis, 6 oz. tubers, etc.
  - The general cultural practices for the crop and fields.
    - Disk, plow, rip, list, mow, border, float, laser, inject tape, flush lines, microjet sprinklers, drag lines, thin, weed, cultivate, combine, pick, strip, plow down. Etc
And at the very least, you need to understand the physiology, terminology and the morphology of the crop or system you are going to look at and the procedures needed to accomplish the task at hand.
FIRST AND MOST IMPORTANT

❖ What are you going to see or do?
  • A crop?
  • Open dirt?
  • A commodity?
  • An animal?
  • A procedure?
THE KEY

❖ The key is to have an understanding of what you are going to see.

+ And if you don’t understand what you are seeing?

× ASK!!!
WHERE DO I GET INFORMATION?

+ Wikipedia is generally pretty good
+ YouTube is typically helpful
+ The commodity association web page
+ University websites
+ The CRO’s website
+ BBCH codes?
  - They suck.
THE CYCLE OF A TYPICAL FIELD CROP

- Land Prep
  - Most cultivated crops start with a disc or plow of some flavor
    - This knocks down current vegetation and opens up the soil
  - Deep Tillage
    - In Many areas, things are deep tilled periodically
    - This opens up the soil for better drainage, breaks up hard pans
  - Often fields are moldboard ploughed
    - This turns the top soil down under 8-12 inches
    - It kills weeds and aerates the soil
  - We typically disk it again
    - Knocks down clods
    - Often with a ring roller
  - If we are planting on the flat, we are ready
  - If we are planting on rows, now is the time to list them up
  - If we are planting a vegetable crop, we will shape the beds
  - If we are putting in drip tape, now is the time
LAND PREP—RIP, DISK, LASER AND LIST
UNLESS

- the field is no till, in which case, none of that happens
All flavors of planters
- Big wheat Drills
- Small hand planters
- Research planters
- Potato planters
- Here a planter there a planter everywhere a planter....
MORE PLANTERS
IN SEASON

- The Crop Emerges and grows in a predictable manner
- Most commonly they go through a vegetative stage for the first half of the season and then
- Go through a reproductive stage where they
  - Flower
  - Mature
  - Get harvested
SOME EARLY STAGE CROPS
MIDLIFE—CRISIS?
MORE MIDLIFE
SAMPLING
REPRODUCTIVE
20-30-80 PERCENT OPEN BOLLS
COMMERCIAL QUALITY
HARVEST MATURITY
SEEDLING WATERMELON
In Conclusion

- It is really difficult to know what you need to know
- BBCH codes are about the last place you ever need to go to figure out how a crop grows.
- Just ask the people you are working with, they are qualified and full of information!
THANK YOU!