**K327 Exam 3 Part 1 - The Spraying Calculator**

There are numerous calculations that go into effective farming. Spraying is a critical component to an operation in terms of applying fertilizer and destroying pests, both vegetable and animal. Ineffective spraying can be very costly in terms of reducing the yield of the crop.

Each sprayer has a wet system to apply different chemical through a liquid based solution. The components of a wet system are as follows:

1. Product tank: the tank holds the solution to be applied. The tank capacity can be from 200 to over 1000 gallons;
2. Booms: The boom systems spread out to apply the solution to the crops. The capacity of the booms is horizontal, measured in feet;
3. Nozzles: These attach to the booms and are where the solution comes out and is applied to the crops. Nozzles vary in both the capacity of gallons per minute as well as the spray pattern applied. The nozzles are spaced evenly across the booms; boom spacing is measured in inches. Spacing can be 15, 20 or 30 inches apart;
4. Product pump: there needs to be a motor or pump which moves the solution from the tank through the booms to the nozzles. The capacity of these pumps is measured in gallons per minute.

Study the Sales Operations manual provided. There are numerous calculations and formulas provided to determine the most efficient way to spray. You have been asked to convert these from paper to an Excel based calculation model. These include (note appropriate PDF files):

1. A Main Menu screen;
2. Nozzle Flow Rate Calculator (with macro to clear the model);
3. Low Limit Calculator (with clearing macro);
4. Product Pump Calculator (with clearing macro);
5. Density Conversion calculator;
6. Additional Conversion factors;
7. Nozzle Selection Formula (with clearing macro). Go to…<http://www.teejet.de/english/home/selection-guides/spray-nozzles.aspx> in order to collect the data. Place this model next to the Nozzle Flow rate calculator.

A handful of tables have been provided. This should be a complete user-friendly point-and-click model with no manual intervention required by the user. Develop macros which clear the current work, as well as navigation to/from all of the models to the Main Menu. Check your work not by the PDFs provided but by the formulas themselves.

Each model requires a plan. Provide a written plan for each.

**Note: this is an individual project and the Kelley Honor Code is in effect.**

To upload: Place all folders in a new folder named K327\_Exam3\_yourusername. Select the folder and zip it: Right click=> Send to=> Compressed (Zipped) folder. Upload to Canvas. Note: Automatic 5 point deduction if name is not on the Plans.