

**2012 Wyoming State FFA CDE
Agricultural Technology and Mechanical Systems
Environmental and Natural Resources**

You have recently been hired as the Environmental Priority Assessment Specialist at the J. R. Simplot Feedlot in Torrington, Wyoming where you are in charge of waste disposal. It has been determined that one of the main lot facilities is in need of cleaning and disinfection. Your supervisor needs to know how many bucket loads from a New Holland W80B TC loader it will take to clean out the main feeding pen and prepare it for disinfection.

The dimensions of the bucket and the dimensions for the calculation of the pen area are provided and placed in select positions around the skill area table. After you have calculated the amount of buckets needed to clean out the feeding pen you will need to calculate how much Virkon® S you will need to purchase to disinfect the feeding pen. The Virkon® needs to be applied at a dilution rate of 1% in order to be the most effective for this particular situation.

While referencing the material provided at the skill area, calculate answers for the following:

1. How many bucket loads removed by the loader are required to clean out the main feeding pen?
Pen Area = 135 X 90 X .50 = 6075 cu. ft.
Bucket Capacity = 27 cu ft. X 1.25 = 33.75 cu. ft.
6075 cu. ft. / 33.75 cu. ft. = 180 buckets

2. How many gallons of diluted Virkon® will be needed to properly sterilize the feeding pen?
Pen Area = 135 X 90 = 12,150 sq. ft. (For use in chemical application)
12,150 sq. ft. / 135 sq. ft. = 90 gallons of mix

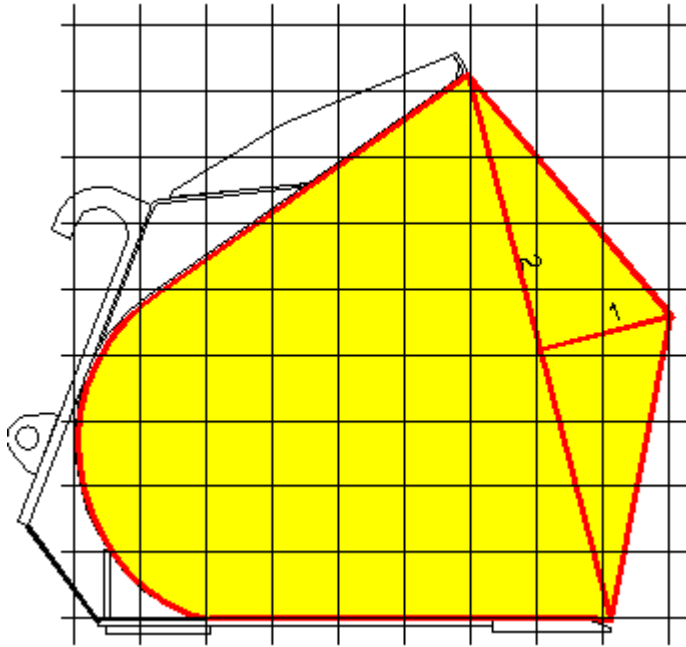
3. How many pounds of Virkon® concentrate will you need to apply to completely sterilize the pen from the label description? (round up to the nearest tenth pound)
90 gallons of mix X 1.3 ounces concentrate = 117 ounces
117 / 16 ounces per pound = 7.3125 pound

4. What is the pH range for Virkon® in-use solution at 25 degrees Celsius? _____ **2.2- 2.6**

5. Is this product effective against Foot and Mouth disease? _____ **Yes**

6. How long could this solution in a mixed state be stored? _____
This solution mixed at 1% will remain stable for 7 days

Criterion	Points possible	Points earned
Questions 1-3	21 (7 points ea.)	
Questions 4-6	6 (2 points ea.)	
Safety	3	



The bucket capacity is 27 **SQ. FT** the bucket can also handle 25% heap.

Length=45 **YDS**

Width= 30 **YDS**



The depth that needs to be taken out is 6 **inches.**

Name _____ School _____ Contestant Number _____

Virkon® S DILUTION CHART

Fill container with desired amount of water and add Virkon® S powder to achieve recommended solution concentration.

Quantity of Water

	0.5% Solution	1% Solution	2% Solution
1 Quart	0.15 ounces	0.3 ounces	0.7 ounces
1 Gallon	0.65 ounces	1.3 ounces	2.7 ounces
10 Gallons	6.7 ounces	13.4 ounces	26.7 ounces
50 Gallons	33.4 ounces	66.8 ounces	133.5 ounces

Measuring cup provided.

Solutions are stable for 7 days. Do not soak metal objects in Virkon® S for long periods - 10 minutes is maximum necessary contact time. One gallon of solution is sufficient to treat 135 sq. ft.