Effluent Irrigation Work Sheet

Example:  

1. Nutrient needs of crop (lbs/acre)  

Nutrient needs of crop (lbs/acre)  

Example:

Your Number:

\[ \begin{align*}
N &= 180 \\
N &= \\
\end{align*} \]

Recommendations based on soil test results and a realistic yield goal.

\[ \begin{align*}
P_2O_5 &= 95 \\
P_2O_5 &= \\
K_2O &= 40 \\
K_2O &= \\
\end{align*} \]

2. Total nutrient value of effluent (lbs/1000gal)  

Total nutrient value of effluent (lbs/1000gal)  

Example:

Your Number:

\[ \begin{align*}
N &= 5.2 \\
N &= \\
P_2O_5 &= 1.3 \\
P_2O_5 &= \\
K_2O &= 5.9 \\
K_2O &= \\
\end{align*} \]

Based on manure analysis of a representative sample collected close to time of application.

3. Determine available nutrients (lbs/1000gal)  

Determine available nutrients (lbs/1000gal)

Example:

Your Number:

\[ \begin{align*}
N &= 2.6 \\
N &= \\
P_2O_5 &= 1.2 \\
P_2O_5 &= \\
K_2O &= 5.3 \\
K_2O &= \\
\end{align*} \]

Multiply the value from Step 2 by nutrient availability, 50% for N and 90% for P and K.

4a. Calculate application rates to supply N and, P_2O_5 needs. (1000gal/acre)

Calculate application rates to supply N and, P_2O_5 needs. (1000gal/acre)

Example:

Your Number:

\[ \begin{align*}
N &= 69 \\
N &= \\
P_2O_5 &= 79 \\
P_2O_5 &= \\
\end{align*} \]

Divide values from Step 1 by values from Step 3.

4b. Choose between N or P_2O_5 application rate (1000gal/acre)

Choose between N or P_2O_5 application rate (1000gal/acre)

Example:

Your Number:

\[ \begin{align*}
Rate &= 69 \\
Rate &= \\
\end{align*} \]

Select the highest rate calculated in Step 4a for using effluent as a complete fertilizer. Select the lowest rate for maximizing nutrient use.

4c. Determine total depth of irrigation (inch)

Determine total depth of irrigation (inch)

Example:

Your Number:

\[ \begin{align*}
Depth &= 2.6 \\
Depth &= \\
\end{align*} \]

Divide application rate in 1000 gal/acre from Step 4b by 27 to get irrigation depth in inches.

5. Determine numbers of application needed to apply total irrigation depth.

Determine numbers of application needed to apply total irrigation depth.

Example:

Your Number:

\[ \begin{align*}
& \text{5 (based on 1/2 inch per application)} \\
\end{align*} \]

Most soils cannot accept the total irrigation depth in one application. Divide total irrigation depth in 4c by acceptable application depth for average soil conditions.

6a. Determine amount of nutrients applied at chosen rate (lbs/acre)

Determine amount of nutrients applied at chosen rate (lbs/acre)

Example:

Your Number:

\[ \begin{align*}
N &= 180 \\
N &= \\
P_2O_5 &= 83 \\
P_2O_5 &= \\
K_2O &= 366 \\
K_2O &= \\
\end{align*} \]

Multiply the rate chosen in Step 4b, by available nutrients, Step 3.

6b. Determine supplemental nutrients (lbs/acre)

Determine supplemental nutrients (lbs/acre)

Example:

Your Number:

\[ \begin{align*}
N &= 0 \\
N &= \\
P_2O_5 &= 12 \\
P_2O_5 &= \\
K_2O &= 0 \\
K_2O &= \\
\end{align*} \]

Subtract the nutrients applied, Step 4e, from nutrients needed, Step 1. If the difference is negative, enter 0.