

FAQs on NuDSS

FAQ NuDSS 1: Settings

FAQ NuDSS 2: Fertilizer Calculator

1. In the Mekong Delta, our fields are flooded when the Mekong River overflows bringing with it K-rich sediments. How do I handle the contribution of sediments in calculating fertilizer K rates in NuDSS?
 - *One option is to consider sediments as a fertilizer source in NuDSS. Add sediment as a new organic fertilizer source in Settings/Crop Profile/Organic fertilizer and estimate the amount of nutrients that the sediments carry with it. Then in Fertilizer Calculator, indicate how much of this organic source was “applied” into the field.*
2. Farmers in northern India leave long stubbles and threshed straw in the field after harvest, but they also burn them in situ. How do I relay that that info to NuDSS for calculating P and K rates?
 - *Burning results in 20-25% losses in P and K. To account for this in NuDSS, subtract 20-25% from the amount of straw that you would return to the field in Fertilizer Calculator/Organic sources.*
3. In what situations/scenarios will NuDSS use the a) yield gain approach b) nutrient input/output balance approach c) combined yield gain and nutrient balance approach in calculating fertilizer P and K rates?
 - *NuDSS uses the yield gain approach in the scenario where there is a response to fertilizer (i.e. $GY_{target} > GY_{0P}$) and the soil balance is zero or positive. If there is no response to fertilizer (i.e. $GY_{target} = GY_{0P}$) and the soil balance is negative, the nutrient input/output balance approach is used to calculate maintenance rates. NuDSS uses both the yield gain and nutrient balance approach if there is a response to fertilizer (i.e. $GY_{target} > GY_{0P}$) and the soil balance is negative. In a scenario where $GY_{target} < GY_{0P}$, NuDSS will not recommend application of fertilizer.*

FAQ NuDSS 3: Yield potential model

1. I would like to use weather data from our site in simulating potential yield. However, we have a lot of missing data. How do I handle this in NuDSS?
 - *If you run the yield potential model in the single-season mode and you have missing weather data, NuDSS will give an error message and abort the simulation. It is therefore necessary to check for missing data before running NuDSS. In many cases, however, individual missing cells can be filled by extrapolating a value from surrounding dates. For example, missing solar radiation data of up to three consecutive days can be estimated from the mean of observations from five days before and five days after the period without observations (Centeno et al., 1995). Missing radiation data can also be derived from sunshine hour data (if available) or from a nearby weather station. One or two consecutive days of missing temperature data can be estimated by linear interpolation. Estimation of missing weather data is done more easily in a spreadsheet program such as Excel.*

2. I tried importing weather data into NuDSS but got a message saying “incompatible weather data”. What does this mean?
 - *Although NuDSS does not require the variables to be in any exact order, the program does require that weather data are placed in rows with variable names exactly as shown in the manual. Check whether the variable names are spelled correctly. Also, if you have several worksheets in your Excel file, make sure that the first worksheet contains the weather data.*
3. The manual says there are two ways of running the yield potential model, one is by using long-term averages and the other is using single-season weather data. When should I use one over the other?
 - *Long-term averages are usually used to estimate the long-term yield potential of a crop at a given site. We recommend using as many years as possible for such analyses to ensure that the widest possible range of weather conditions are used in the simulation. Single-season simulation is primarily done to analyze and understand the factors that may have caused yield loss in that season or to estimate the size of the yield gap by comparing the simulated potential yield with actual measured yields.*

FAQ NuDSS 4: Fertilizer Chooser

1. Some of the inorganic fertilizer sources I chose in my country profile’s settings do not appear in the dropdown list in Fertilizer Chooser. What could be wrong?
 - *You may have forgotten to indicate the price of the inorganic fertilizer source in Settings/Country Profile/Inorganic Fertilizer. Only those fertilizer sources with prices will appear in the dropdown menu in Fertilizer Chooser.*

FAQ NuDSS 5: Fertilizer Splitter

FAQ NuDSS 6: Profit Analyzer

1. Why does the page for organic fertilizer in Profit Analyzer remain empty even though I entered values for both FFP and SSNM in the Fertilizer Calculator/Organic sources page? I thought the software would take these values by default.
 - *You would need to indicate prices for each of your organic fertilizer sources in Settings/Country Profile/Organic fertilizer. Only those sources with prices will appear in the cells in Profit Analyzer/Organic fertilizer. NuDSS will then take the amount you have indicated for these sources in Fertilizer Calculator as the default values in Profit Analyzer.*

FAQ NuDSS 7: NuDSS in extension

FAQ NuDSS 8: NuDSS for fertilizer companies

Reference:

Centeno HGS, Aclan AP, Balbarez AD, Pascual ZP, Penning de Vries FWT, Kropff MJ. 1995. The rice-weather database. In Modeling the impact of climate change on rice production in Asia. CAB International. Wallingford, UK. Pages 9-26.