When dealing with distortions in an image set—like salt-and-pepper noise, non-uniform illumination, and blur—we need a systematic pipeline to restore the images effectively. Here's the recommended order and why:

**1. Correct Non-Uniform Illumination**

* **Why first?** Uneven lighting affects the contrast and intensity distribution, which can make later noise and blur removal less effective. Applying histogram equalization, adaptive contrast enhancement, or homomorphic filtering first ensures that noise and edges are more uniformly distributed.
* Correct Non-Uniform Illumination – Since we used different light sources (daylight and artificial light), there may be intensity variations. Applying adaptive histogram equalization or homomorphic filtering will help normalize brightness across frames

**2. Remove Salt-and-Pepper Noise (Impulse Noise)**

* **Why second?** If we apply blur reduction first, the noise can spread and become harder to remove. Salt-and-pepper noise is best handled using a median filter or non-local means filtering before sharpening or deblurring the image.
* **Remove Salt-and-Pepper Noise** – If any small pixel artifacts appear due to sensor noise, a median filter can help clean them up.

**3. Remove Gaussian or Speckle Noise (if present)**

* **Why here?** After impulse noise is gone, remaining Gaussian or speckle noise (often present in low-light conditions or sensor defects) can be removed using techniques like bilateral filtering, wavelet thresholding, or deep-learning-based denoising.
* **Reduce Gaussian Noise (if needed)** – If our alternative light source introduced grainy noise, use a bilateral filter or a deep-learning-based denoiser.

**4.Final Optional Step: Edge Sharpening or Super-Resolution (if needed)**

* **Why last?** This step should be applied only when the image is free of distortions to enhance details without amplifying noise or artifacts.
* **Final Enhancement** – If needed, apply sharpening or super-resolution to enhance plant details.