

How the fluoropen measures photosynthetic capacity of leaves using the QY (quantum yield) setting

The higher the QY value, the less fluorescence there is at saturating light and therefore the higher capacity for photosynthesis.....

Good leaves have a high QY
Stressed or sick leaves have a low QY

quantity of fluorescent light is then re-computed as the photosynthetic capacity of the leaf (= quantum yield, QY)

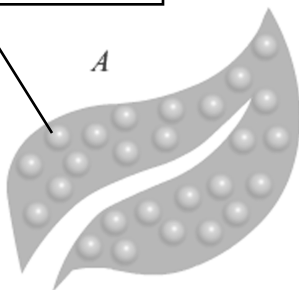
fluoropen then measures re-emitted fluorescent light

re-emitted fluorescent light

press fluoropen button:

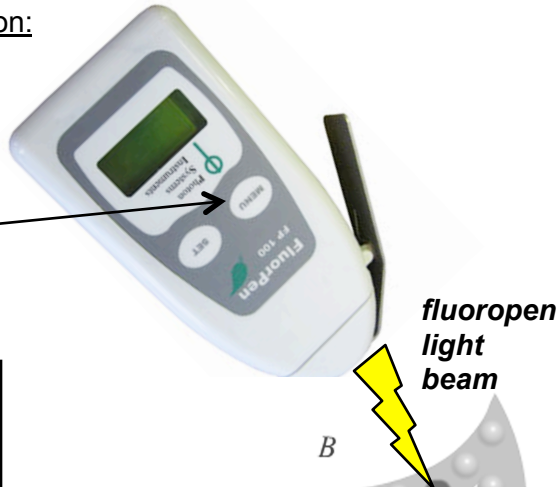
beams bright light on the leaf area within the plant pen clamp

chloroplast photosystem complex



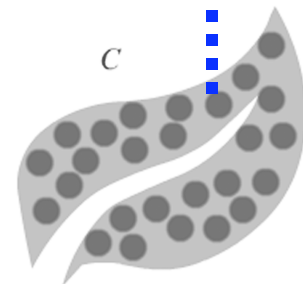
Dark adapted state:

all the photosystems in the chloroplasts are oxidized (open for light absorbing)



Initial illumination state:

the photosystems in the chloroplasts begin absorbing light (via chlorophyll molecules in the antennae group of chlorophylls)



Fully illuminated state:

the photosystems are running at their capacity for absorbing light....additional light that is absorbed by chlorophyll but cannot be used by the photosystem is re-emitted as fluorescent light

Start measuring

1 millisecond

End measuring