



TM

MSIRMAP™

MSIRMAP™ (“multi-spectral infrared map”) combines thermal infrared, near infrared and red visible light into a single image for maximum plant condition differentiation and crop diagnostics. This combination of image bands provides the most comprehensive differentiation and discrimination of plant conditions for early detection of plant diseases, pests, fertility problems, irrigation issues, crop maturity differences, fruit load stress, weed infestations, etc.

Image Display:

The thermal band (TIR), which detects heat (directly proportional to transpiration and therefore plant stress), is displayed as red in the image. The hotter an area is, the more red color component there is in the resulting color on the image.









The near infrared band (NIR), which is reflected by plant leaf cells, is displayed as green in the image. The more plant material and more vigorous the plant growth, the more green color component there is in the resulting color on the image.

The red visible light band (red), which is absorbed by chlorophyll in photosynthesis, is displayed as blue in the image. The more chlorophyll there is to absorb the red light, the less blue component there is in the resulting color on the image.

Image Interpretation:

Colors displayed in the **MSIRMAP™** are a result of the proportions of the brightness of each image band described above. Each band interacts differently with different physical properties, so each resulting color on the image is due to a combination of conditions on the ground. Following are some generalizations to aid you with the image interpretation.

Resulting Color

-  Healthy green plants with low stress (very high NIR, low TIR, low red)
-  Plants with some stress, sometimes weeds (high NIR, low-medium TIR, low red)
-  Plants with lots of stress or advanced maturity (medium-high NIR, medium TIR, low red)
-  Dead, dying or senescent plants (medium NIR, high TIR, low-medium red)
-  Roads, etc. (low NIR, very high TIR, high red)
-  Bare soils, etc. (low NIR, very high TIR, medium red)
-  Muddy brown water (no NIR, very low TIR, high red)
-  Deep clear water (no NIR, very low TIR, very low red)

Use the **MSIRMAP™** to:

- Conduct targeted crop scouting for early problem detection
- Detect disease, pest, weed and fertility stress
- Determine crop fruit load bearing capacity and maturity uniformity
- Identify irrigation scheduling or system distribution uniformity problems