

Tim Dixon

Ben Burgess (John Deere) customer



Crown Point Estate Farms near Norwich is using six METOS stations and moisture probes over its 1,300ha to help plan activities and monitor weather events. They are also looking at longer-term trends in soil moisture and crop water use, to help plan for a future with more volatile weather. The family-owned business, which is run as five individually-managed farms, grows irrigated potatoes, along with combinable cereals, oilseed rape, sugar beet, and mint. Tim Dixon, Farms Manager, says that having six stations enables them to cover more of the farmed area, which extends up to eight miles from the farm office. The farm's stations, purchased from Ben Burgess, include three **iMETOS IMT 300** stations measuring rainfall, air temperature, humidity, wind speed and direction, dew point and delta point, and three **iMETOS ECO D3** Clima 180 stations measuring rainfall, air temperature and humidity temperature. Three of the stations were recently funded via round two of the Government's Countryside Productivity Small Grant Scheme. One station is fitted with an additional leaf wetness sensor which enables Tim to use the METOS disease model for potatoes, providing live information on blight risk. All of the stations are paired with a soil probe to monitor soil moisture and temperature.

"The disease model is useful," says Tim. "We're on a tight schedule to get around to all the fields so we tend to stick to a seven-day spray interval for blight, but we will use the disease model data to fine-tune our fungicide choice depending on risk level. The delta point information is helpful for spray timing. Although we can usually tell from the office how windy or not it is, the delta point gives us more detail on when is the best or worst time to spray."

Tim explains that like the blight spray schedule, once they start irrigating they have to keep going. However, with METOS stations spread widely across the five farms, the varying rainfall measurements and soil moisture deficit readings help inform how much water to apply.

"On some of our marginal land we have to be careful not to over-irrigate. We use the stations here to limit the amount of water applied, and build up a bit of a water deficit from mid-August onwards. This gives the soil the ability to soak up any rain and prevent flooding," says Tim.

Over the next year or two Tim may add extra stations to help build a better picture of water use by crop, across the farms. Three of the current stations are in non-irrigated winter wheat, sugar beet and vining peas and he hopes they will remain in these fields to give him more information on soil moisture with different crops.

"By September or October we will have the data and the water balance profile for these stations. Over the next three to four years we'll monitor the soil moisture levels at different depths to see the impact of rainfall events against each crop's water requirement. It will be interesting to see if, for example, sugar beet influences soil moisture levels at different depths compared to other crops. We expect that climate change will continue to influence our weather patterns, with increased periods of hot and dry, followed by wet weather. In the future we may need to change our cropping to suit that change in conditions, and the data from the METOS sensors will be helpful in considering what might work best," says Tim.



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