



# Agricultural Meteorology Seminar – Survey Results

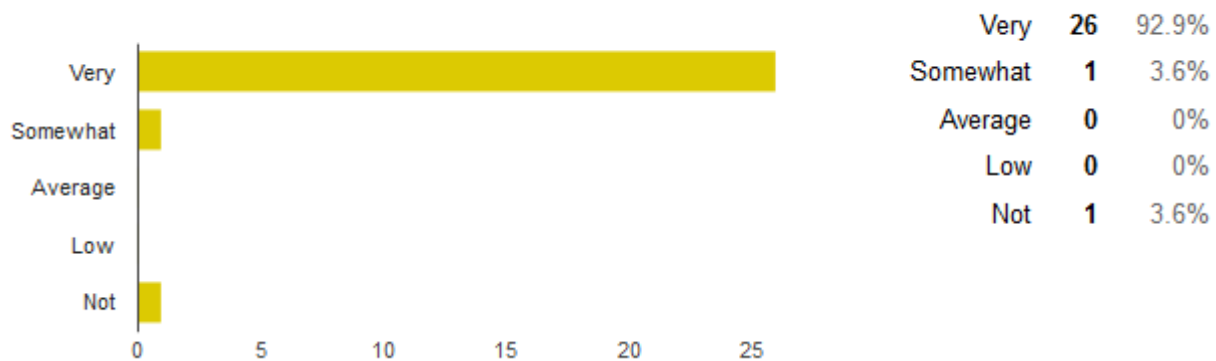
National Botanic Gardens  
Tuesday 23<sup>rd</sup> June 2015

**In advance of the Met Éireann Meteorological Seminar an online survey was circulated to registered participants.** This survey which had a very good response rate, helped further identify the meteorological needs of various agricultural disciplines. It also provided some useful suggestions on how meteorological data could further assist the Irish agricultural community. A summary of the results is presented below

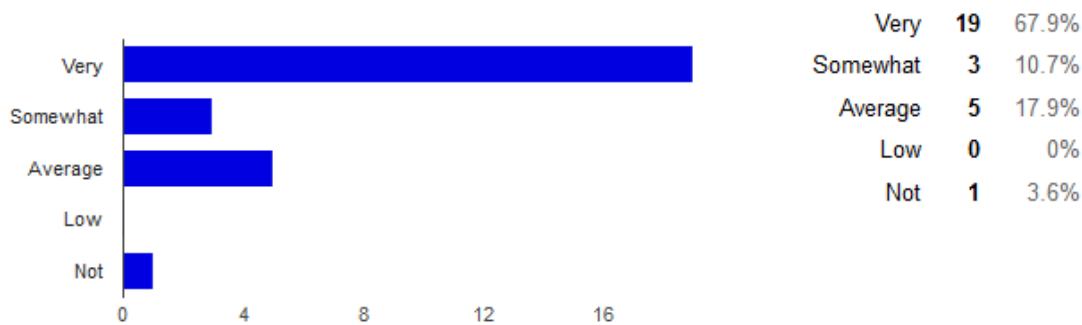
Queries to [keith.lambkin@met.ie](mailto:keith.lambkin@met.ie)

## How important are these classic meteorological parameters to you in your line of work?

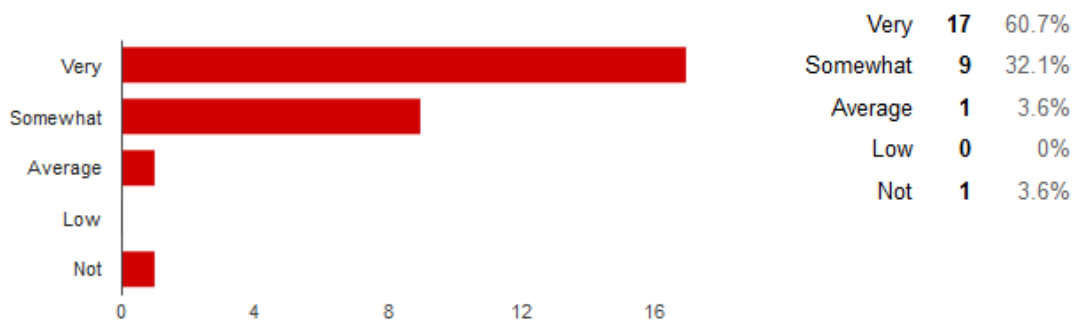
### Rain [How important are these classic meteorological parameters to you in your line of work?]



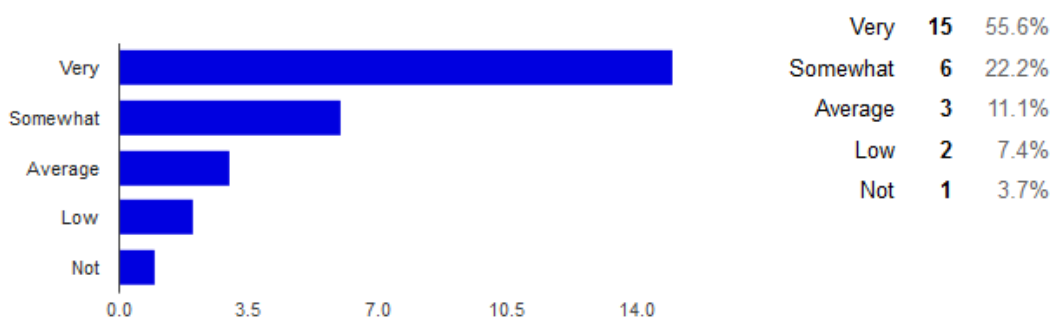
### Air temperature [How important are these classic meteorological parameters to you in your line of work?]



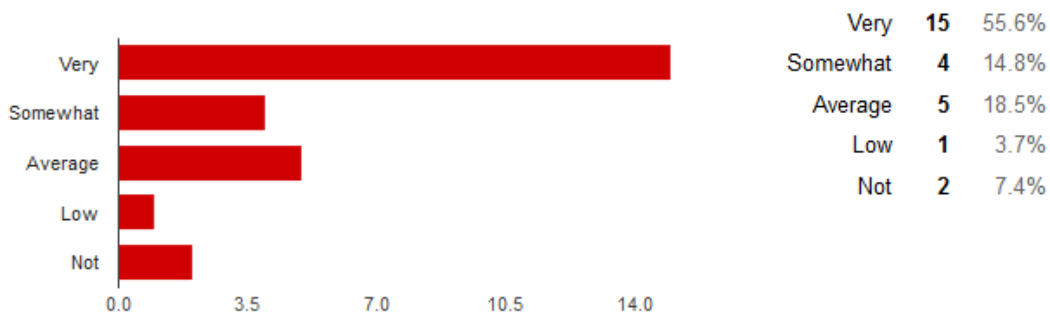
### Soil temperature [How important are these classic meteorological parameters to you in your line of work?]



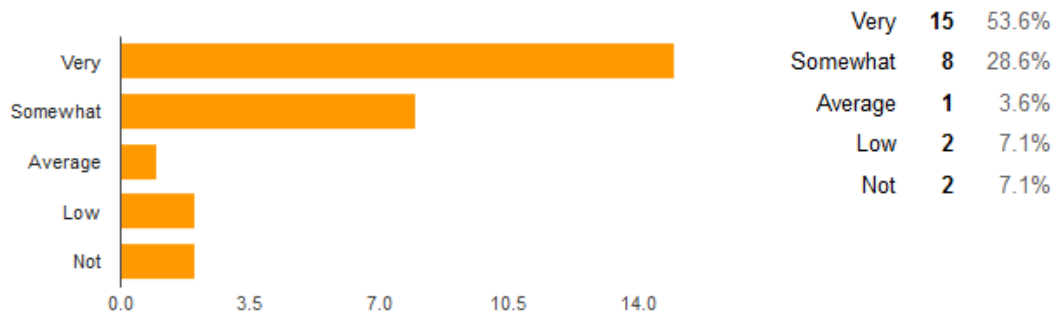
### Sunshine duration [How important are these classic meteorological parameters to you in your line of work?]



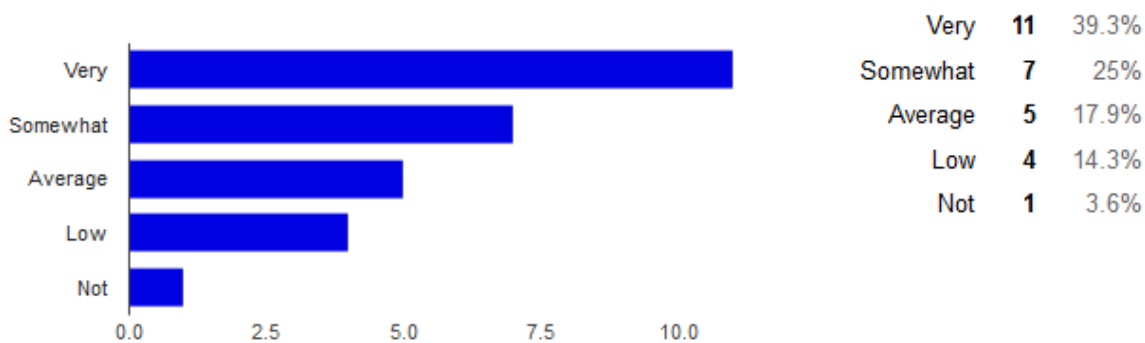
**Total solar radiation [How important are these classic meteorological parameters to you in your line of work?]**



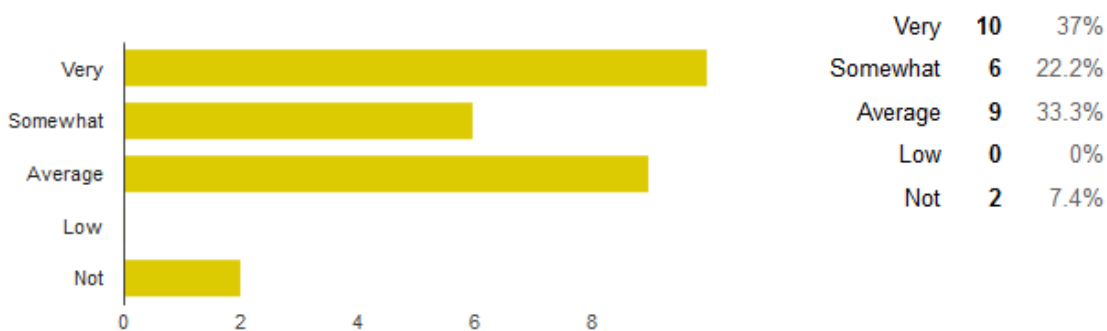
**Grass temperature [How important are these classic meteorological parameters to you in your line of work?]**



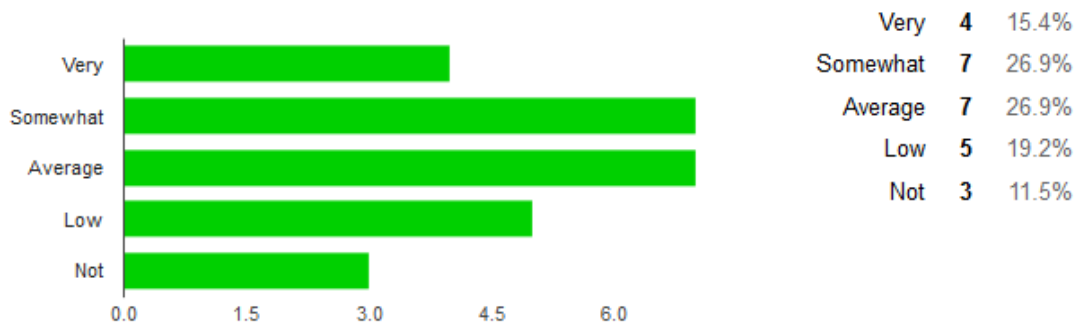
**Humidity [How important are these classic meteorological parameters to you in your line of work?]**



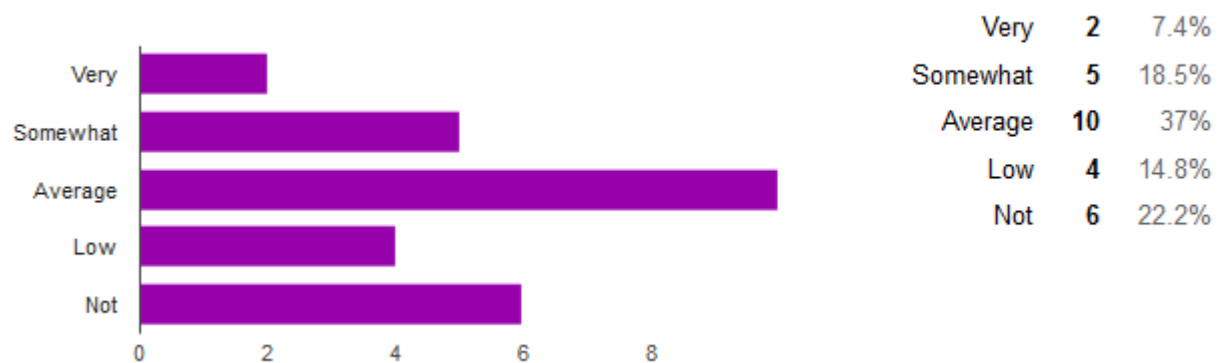
**Wind speed [How important are these classic meteorological parameters to you in your line of work?]**



### Wind direction [How important are these classic meteorological parameters to you in your line of work?]



### Hail [How important are these classic meteorological parameters to you in your line of work?]

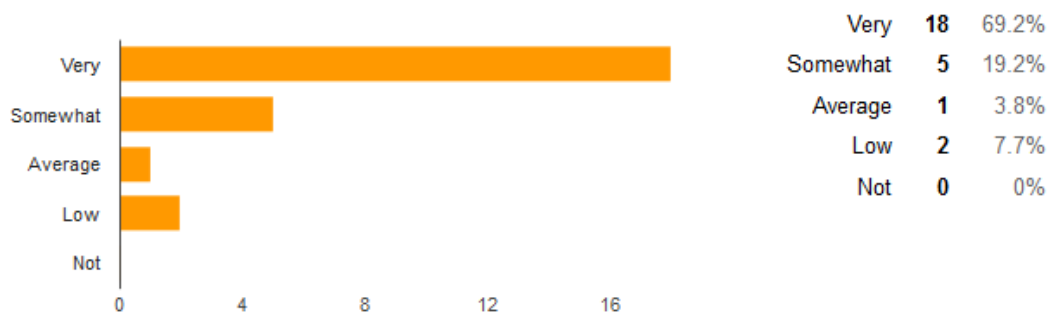


### Any other meteorological parameters of importance / comments ?

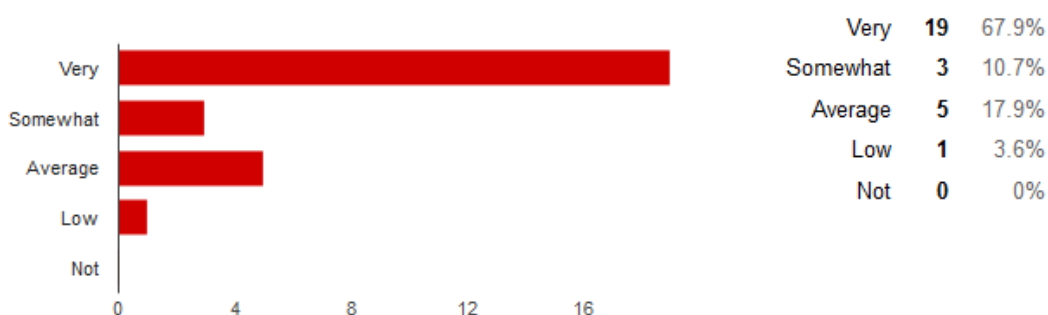
- Photosynthetically active radiation (PAR) - radiation in wavelengths plants can use
- General interest, not raw data
- Leaf/stem area interception vegetation intercepts precipitation, condenses/precipitates water vapour. Both are important in the water balance effected by crops e.g. trees, woodland and tall crops generally
- Precipitation (particularly rainfall) intensity, duration and distribution - western, eastern, northern and southern. Any pattern emerging that would signify a change to the normal!
- Periods of heavy rain leading to surface water run-off.
- Accuracy associated with these in forecast
- Potential Evapotranspiration
- Photosynthetically active radiation (PAR) is most important and mean daily air temperatures. Daily rainfall. Daily wind data e.g. sustained "windiness" in May can dry out young maize plants and reduce yields.
- Soil moisture Evaporation

## How important are these derived meteorological products to you in your line of work?

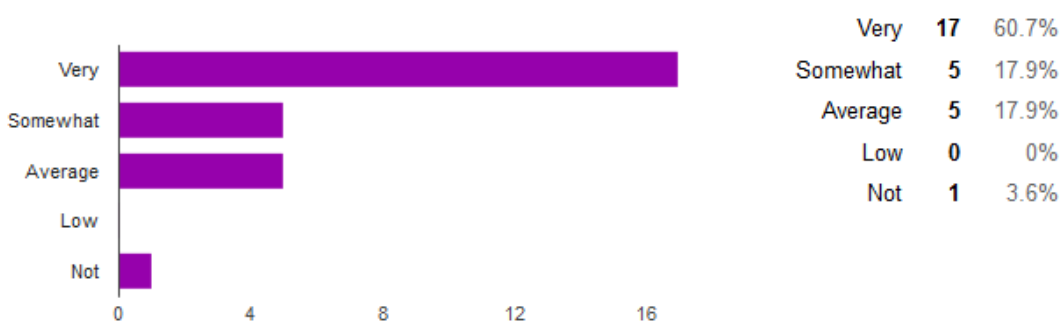
### Soil moisture deficits [How important are these derived meteorological products to you in your line of work?]



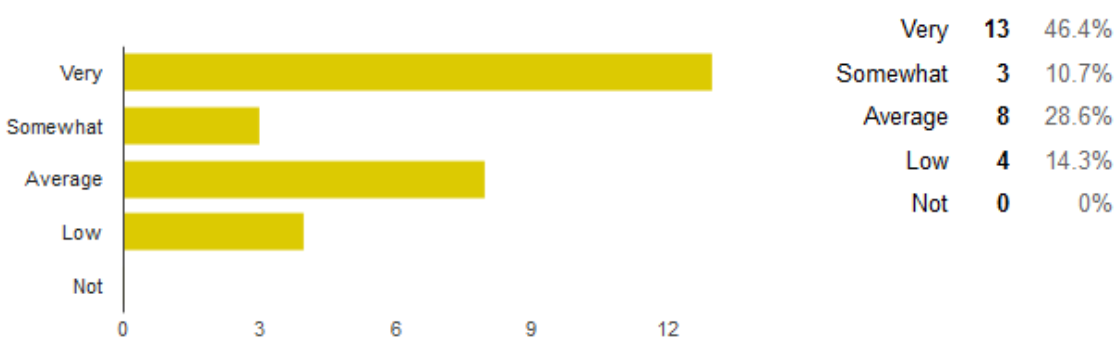
### Growing degree days [How important are these derived meteorological products to you in your line of work?]



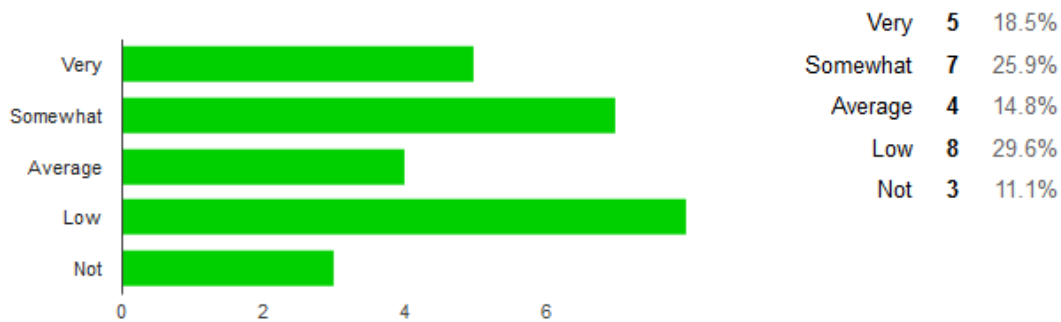
### Evapotranspiration [How important are these derived meteorological products to you in your line of work?]



### Drought index [How important are these derived meteorological products to you in your line of work?]



## Fire warning index [How important are these derived meteorological products to you in your line of work?]

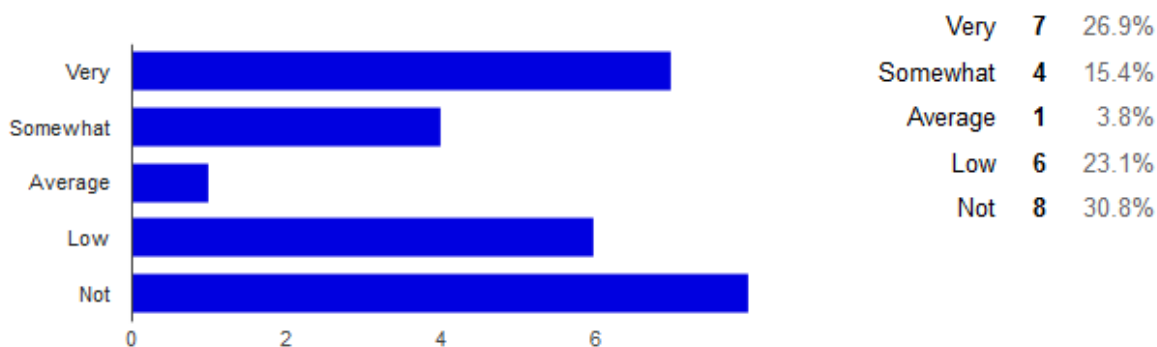


## Any other derived meteorological products of interest / comments ?

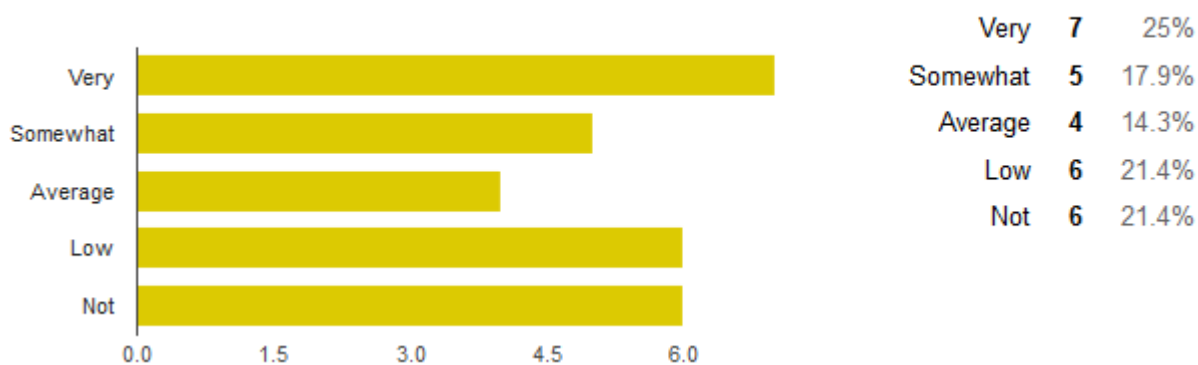
- National maps of these parameters would be useful
- UV index relating to health warning system (using protection)
- Soil volumetric water contents - important for research but not necessarily for farmers (SMD may be more relevant for farmers)
- Fine fuel moisture code component of Fire Weather Index is a critical variable
- Re wind I am more concerned with the amount of air which has passed over an area in a given time than the direction from which it came.
- Runoff grass growth slurry spreading and fertilizer timings, trafficability, flood prediction
- I am very interested in the evapotranspiration/ rainfall balance on peatland soils given CC predictions of increased temperature and possibly longer drought periods.
- Crop growth/ production and disease models based upon these data.
- As a keen gardener, I monitor these parameters closely during the growing season!

## How important are these animal and plant diseases to you in your line of work?

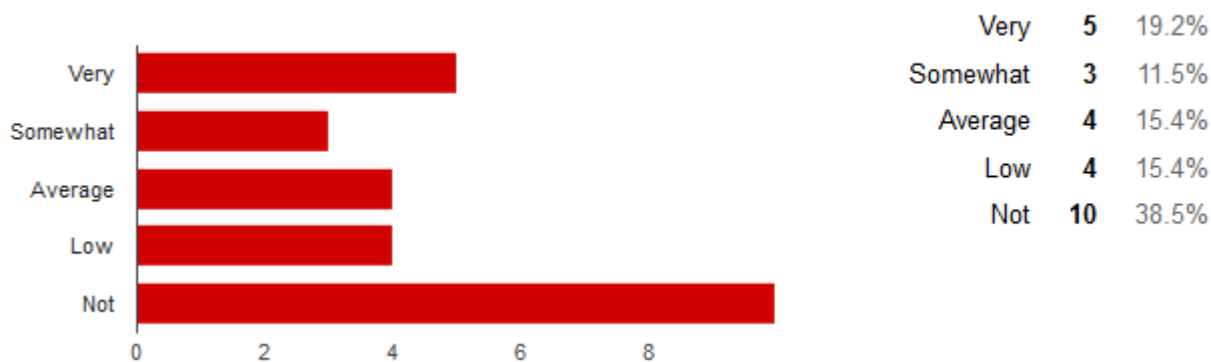
### Foot and mouth [How important are these animal and plant diseases to you in your line of work?]



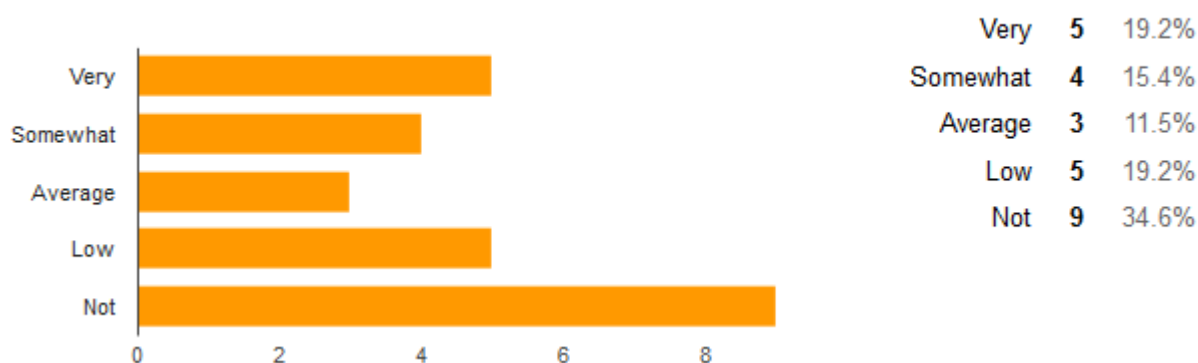
### Potato Blight [How important are these animal and plant diseases to you in your line of work?]



### Nematodirus [How important are these animal and plant diseases to you in your line of work?]



### Liver fluke [How important are these animal and plant diseases to you in your line of work?]



## Any other derived animal and plant diseases of importance/comments?

- Horticultural pests (carrot fly, cabbage root fly etc.) Aphids in tillage
- Leaf or stem rusts in grain crops. I am unsure how applicable this is to Ireland, but it was a concern for us at my former employment with the USDA Foreign Ag Service.
- Phtophthora Ramorum (sudden oak death) , Chalara Fraxinea (ash dieback), Abiotic Wind Damage
- Water mediated/vectored pathogens - flooding events
- Maize eyespot (supposedly blew over towards N.Ireland in 2013 from England in August / September)
- Drechslera
- Brucellosis
- Possibly - Grass Tetany - based on Temp, (Grass growth) and Rain levels
- Septoria, rhynchosporium

## From your experience, what are the 3 meteorological requirements common to all Irish Farmers?

- Rain, temp, solar rad
- Soil temp, rain , sunshine
- Rain, long term forecasts, accurate forecast for tomorrow for my area
- Soil moisture deficit, mid-range to long-range forecasts (especially also in view of climate change adaptation), disease, fire, storm and flood warnings
- Rain forecast, temperature forecast, wind forecast
- Soil temperature, rainfall, air temperature
- Rainfall, temperature, humidity
- Growing degree days in lieu of more sophisticated models. But DD should be done as routine for  $T > 0$   $T > 5$  and  $T > 10$ . Simple and robust for winter cereal and L.multiflorum; main grasses, and maize etc.
- Air temperature (mean monthly), Rain (daily and monthly), Soil temperature
- Air temperature, sun shine hours and precipitation
- Rain, sunshine duration/radiation, air or soil temperature
- Forecast accuracy, localised forecasting, extreme weather warning
- Precipitation, air and soil temperature, wind speed and direction
- Dry weather in late May to mid-June for silage harvesting (first cut) and mid-end August for silage harvesting (second cut). Good trafficability on land in the spring to plant crops and autumn to harvest them. Ground Temperatures 5 degrees C and above with no frost during the spring and early summer that would affect vegetable and fruit crops. Low winds in May so that apple and pear fruit buds can form securely.
- Temperature, relative humidity, rainfall, soil moisture condition as it relates to vehicle bearing capacity over soils is less spoken about although I feel a critical issue across all farming types
- Sunshine, rainfall and daily temperature.
- Rain - rain and rain forecasts
- Ground, temperature, rainfall, wind





## In what areas would you like to see Met Éireann improve or develop to better support Irish agricultural?

- Number of weather recording stations
- Make archive data more easily accessible
- More localized weather forecasting with 7 to 10 day rain and temperature regional forecasts
- Improved five day forecast presentation for surface pressures and wind development. UK Met Office style (animation) is very useful
- Better collaboration with Teagasc to develop (existing) models of soil moisture deficit, slurry spreading times, and grass growth microclimate. Also necessary to develop tools for decision in urban environments like flooding, sea level rise
- Better reporting of up-to-date data on a daily basis. This should not demand any significant increase in manpower; just some extra soft-ware.
- Humidity duration maps for grass/cereal fungal diseases
- Weather forecasting on a local level (sub-county) in addition to national level.
- Delivery of standardised spatial grids of meteorological parameters would be hugely beneficial. There is arguably a huge amount of inefficiency across the user base who receive data from Met Éireann and then proceed to derive interpolated surfaces which will be similar to those created by other users in other organisations (and often in the same organisation!). Apart from multiplicity of approaches (and ensuing error in approach and output due to misapplication of appropriate methods) the duplication of effort is crazy. With the increase in availability, interest and application of ag-met models the availability of these gridded surfaces would facilitate a huge step forward in the research and application of such models in Ireland
- A tidy web portal where all Ag related information is together presented in a clear way
- Data sharing platforms, e.g., something that would feed in to an Irish equivalent of Crop Explorer (<http://www.pecad.fas.usda.gov/cropexplorer/>).
- A regional (RTE radio) 5 day climate forecast issued twice a week at a known day and slot time. E.G. Monday and Friday at 1.50pm for all four provinces. Met Éireann staff must be the professionals who present the weather forecast on RTE radio and television. TV3, UTV Ireland and others should also have the same rule applied. Is 1981 - 2010 a baseline average?
- Localised medium range forecasting. Clearer non-met language when dealing with trends
- A better awareness among broadcast meteorologists of the need to give a longer lead time in forecasting blight conditions. A better awareness among broadcast meteorologists of the importance of accurately describing impending weather conditions likely to impact of various kinds of crops of potatoes, corn, fruit and vegetables and new-born animals in the spring-time.
- Local forecasting

## What type of farming / agricultural are you most interested in?

- All main areas of farming
- Forestry
- Dry stock and market gardening
- Grass
- Grass-based livestock industry
- All livestock
- Grass-based and arable
- Dairy
- General
- Crops, grass, forestry
- Sports turf playing surfaces
- Grassland
- Crop production
- Arable
- Beef & Dairy
- Drainage and regional grass growing
- Grass growth
- Horticulture / gardening
- Grass/maize
- Research and development

## Your organisation

- University College Dublin
- Kealy Suttle Agronomy
- Agri-Food and Biosciences Institute
- Gas Networks Ireland
- Teagasc
- Department of Agricultural Food and Marine
- Met Éireann
- Forest Service
- VESI Environmental Ltd.
- Farmers Journal
- Maynooth University
- Irish Met Society
- Cork Institute of Technology
- Farmflo