Preparing for Late Blight in 2016

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The likelihood for late blight developing in parts of southern Idaho in 2016 is high. The recent persistently wet weather present in some areas has been particularly favorable for late blight development. A late blight forecasting model was developed at the University of Idaho to predict the threat of late blight. The model estimates the amount of weather favorable for the pathogen to grow and cause disease. Specifically, the average temperature during periods of high relative humidity (>80%) combined with the amount of rain during April and May is used to generate the probability of disease development. By May 21 this year, enough disease-favorable weather events had occurred to predict that late blight should occur in most regions of southern Idaho.

One weakness of the model is that currently there is no way to estimate the amount of inoculum present in the environment. As a result, there are some years when late blight is predicted, but none develops. However, this year it is highly likely that inoculum is present. Late blight was widespread in central and eastern Idaho in 2015. Additionally, volunteer potatoes have been observed in high numbers this spring. These conditions make it likely that we will see late blight in 2016. As if to underscore this point, late blight was found in Walla Walla County in Washington around June 1. This is the earliest date late blight has been found in the Columbia Basin.

The strain of the late blight pathogen present in 2015 in southern Idaho was the US-23 strain. This strain is usually sensitive to mefenoxam. Initial US-23 isolates collected in 2015 were sensitive to mefenoxam. Furthermore, fields in the Magic Valley that were treated with mefenoxam-based products were some of the last to develop late blight in 2015 and the disease was minor in severity. However, results from University of Idaho fungicide resistance screening of US-23 isolates collected late in the 2015 growing season (Sept-Oct, 2015) indicated that the US-23 strain in Idaho had developed resistance to mefenoxam. When isolates of the late blight pathogen are found in 2016, they should be tested to determine mefenoxam sensitivity in order to help make effective management decisions.

If late blight isolates are sensitive, then mefenoxam-based products will be an effective tool. Ridomil Gold Bravo and Ridomil Gold MZ are pre-packed with chlorothalonil and mancozeb, respectively. The Ridomil Gold SL label calls to tank-mix with a fungicide which has efficacy against late blight. At this point in the season, no mefenoxam product should be applied without being tank-mixed with another product effective against late blight. By using a pre-pack or adding a protectant with the SL formulation, you are providing protection against infection by isolates which are resistant to the mefenoxam portion of the application. Mefenoxam is effective against pink rot and Pythium leak in many parts of southern Idaho and it may be important to provide protection against these diseases. With the forecasted hot weather, it is likely that fields will be overwatered in an attempt to cool the soil, thus increasing the potential for pink rot and Pythium leak.

If isolates of the late blight pathogen are resistant to mefenoxam, then the use of other fungicides should be considered and used. Additionally, the pink rot pathogen is also resistant to Ridomil in

some areas of the state. Phosphorous acid-based products (e.g. Phostrol, Resist 57) are another tool which can be used to manage the tuber phase of late blight and protect against pink rot. (Phosphorous acid products are not effective against Pythium leak.) Phosphorous acid products should be applied when the largest tubers are dime-sized, and then repeated on a 14-day interval for three total applications. Research has shown that three applications at 10 pt is the most effective way to control pink rot. This approach will also provide strong tuber protection against late blight. It is important to remember that foliar phosphorous acid products are not effective against foliar late blight, but do provide protection against tuber infection.

Post-harvest applications of phosphorous acid are also highly effective in protecting tubers from infection which may occur during harvest or handling into storage. If late blight develops in a field and tubers are destined for storage, then a post-harvest application is recommended. This application is also effective against pink rot.

University and private research has shown that preventative, protectant fungicide applications can be very effective in managing late blight if applied before symptoms are present. Applications should begin prior to row closure and continue at least weekly during the period of rapid vine growth and frequent irrigation. If a rain event is forecast, be sure to make an application before the rain. By following this approach, growers may not need to apply more expensive systemic products.

On a somewhat related note, potato psyllids carrying the zebra chip causal agent have already been found in southern Idaho. Why is this relevant to late blight control? If applying insecticides to manage potato psyllids, check the label to see if there is a warning against tank-mixing that product with a fungicide containing a sticker-type adjuvant. Fungicides with a sticker may interfere with the uptake of the insecticide into the potato plant. Spirotetramat (Movento) and abamectin-based insecticides (several brands) have this warning and fungicides which contain a sticker-type adjuvant pre-mixed with the fungicide should not be used. Many protectant fungicides have sticker-type adjuvants pre-formulated in the product. While fungicides such as Bravo Weather Stik and Manzate Pro-Stick advertise the presence of this sticker, this is not preset for all fungicides. For example, Omega is formulated with a sticker but this is not stated on the label. Be sure to check with the product representative to determine if there will be any compatibility issues in mixing fungicides and insecticides.

When an airplane is flying, it is tempting to add additional products such as fertilizers. The risk for phytotoxicity increases as the number of products in the tank increases. Be sure to do a pre-spray test mix to evaluate compatibility among different products.

Late blight management recommendations may change as the season progresses depending on the time of disease onset and disease distribution across the state. If and when late blight is found, it is critical to alert University personnel so that an appropriate warning can be broadcast to other growers. Applying fungicides BEFORE symptoms are visible provides much more effective management of the disease than trying to play “catch up” after symptoms are widespread. Late blight must be managed on a regional basis, which is why everyone needs to know what counties are affected as soon as possible. All disease submissions are treated confidentially and reported at the county level. As mentioned above, it is also important to

determine the strain of the late blight pathogen in order to know if mefenoxam can be used as a control measure.

Growers can receive email and/or text messages on the latest news relating to late blight by subscribing to the PNW Pest Alert at PNWPestAlert.net. Reports of late blight and other crop diseases are broadcast via this free service. Growers can also call the Late Blight Hotline at 1-800-791-7195 for updates on county detections in Idaho.