Implementation and practical use of decision support system for control of potato late blight in Denmark

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Potato late blight (*Phytophthora infestans*) can develop and spread very quickly in the potato fields. The most effective control is through preventive treatments before infection. In periods with a high risk of infection it is important to use a full dose of the most effective fungicides. By contrast, in periods with a low risk of infection it is possible to reduce the doses or increase spray intervals. By optimising the spray applications according to need there is thus a possibility of a lower fungicide input in potatoes while still having an effective control. In order to help potato growers and advisors to assess the level of risk from potato late blight, and to decide when to spray and how much to use a web-based decision support system "Blight Management" has been developed. The system consists of different applications showing e.g. monitoring of the first attacks in the country, weather forecast and prognosis of infection pressure based on local and regional weather data for the coming four days. Based on the calculated infection pressure a risk dependent "Dose Model" has also been developed where the fungicide input is adjusted to the actual need. In the Dose Model current dose and spray interval depends on how close to the potato field late blight has been observed, the calculated infection pressure and the resistance level of the cultivar. Field trials 2009-2011 in starch potatoes with the Dose Model have shown that it is possible to reduce the application of effective fungicides such as Revus and Ranman by up to 30% by adjusting the dose in relation to the infection pressure of potato late blight.

Blight Management will be implemented on www.landbrugsinfo.dk and will be available for advisors and farmers to support decisions on disease control in potatoes. The aim is that the system can optimise the use of fungicides for control potato late blight, and ultimately result in a more efficient potato production.