Photo: Håvard Simonsen

VIPS – a web-based forecasting service of pests and diseases in Norway

Guro Brodal, Annette Schjøll Folkedal and Halvard Hole

Bioforsk – Norwegian Institute for Agricultural and Environmental Research, Plant Health and Plant Protection Division, Hogskoleveien 7, N-1432 Aas, Norway

VIPS (Varsling Innen PlanteSkadegjørere) is a web-based forecasting and information service developed for integrated management of pests and diseases in cereals, vegetables and fruit crops. It also includes a decision support for management of weeds in cereals. VIPS is a collaborative project between Bioforsk and Norwegian Agricultural Extension Service (NAES) under a government-funded action for reducing risk connected to the use of pesticides. The service is open and free of charge at www.vips-landbruk.no. Forecasting models that predict the likelihood of pest or disease outbreak can assist crop growers in determining when or if pesticides are needed. Inputs to the forecasting models in VIPS are weather data from the Bioforsk Agrometeorological Service consisting of a network of 80 automatic weather stations located across crop production areas, weather forecasts from the Norwegian Meteorological Institute and biological/field observations collected by NAES. A general interface is used for all models incorporated in the system, allowing new models to be implemented. Currently, VIPS includes forecasts and/or monitoring of leaf blotch diseases (*Stagonospora nodorum Septoria tritici*, *Drechslera tritici-repentis*) in wheat, net/spot blotch (*Drechslera teres*) and scald (*Rhynchosporium secalis*) in barley, stem rot (*Sclerotinia sclerotiorum*) in oil seed rape, potato late blight (*Phytophthora infestans*), cabbage moth (*Mamestra brassicae*), cabbage root fly (*Delia radicum*), turnip root fly (*Delia floralis*), carrot root fly (*Psila rosae*), the tarnished plant bug (*Lygus rugulipennis*) in vegetables, lettuce downy mildew (*Bremia lactucae*), celery late blight (*Septoria apiicola*), onion downy mildew (*Peronospora destructor*), apple scab (*Venturia inequalis*), codling moth (*Cydia pomonella*) and apple fruit moth (*Argyresthia conjugella*). Test-versions of models to predict Fusarium Head Blight (*Fusarium* spp) in spring wheat and oats are under validation. During the growing season the monitoring of several pests and diseases are recorded through a message system in VIPS. Forecasts are also available as SMS messages. Current development aiming at transferring the service from weatherstation-based to farm-based forecasts is presented by Nordskog et al. at this seminar. The weed management component was developed in Denmark and has been adjusted to Norwegian conditions. It includes assessment of the need for control of weeds in cereal fields, eg choice of herbicide(s) and calculation of doses. Both experiments and practical large-scale testing of “VIPS weeds” have demonstrated the potential of a significant reduction in the use of herbicides in cereals.