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VIPS

VIPS is an online forecast and information service for decision support in integrated management of pests, diseases and weeds. The Norwegian VIPS web is open and free of charge. By using VIPS as the common technological platform, researchers and developers can save time and resources when developing and implementing pest prediction models.

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VIPS - a tool for use in integrated pest management

VIPS is a Norwegian Open Source technology platform for prognosis, monitoring and decision support in agriculture. Data from most online weather stations, public weather data networks and weather forecasts can be used, allowing pest and disease models to be tested and validated under local conditions, with multiple sources of input data. Observations of pests and diseases can be easily registered and reported using online maps.

We aim to initiate international research collaboration to create new and improved tools for better implementation of integrated pest management. VIPS is made to accommodate for research, development and extension with easy customization for local developments and international use.

VIPS in Norway

The Norwegian VIPS-web is available at www.vips-landbruk.no. This web service is developed and managed in collaboration with the Norwegian Advisory service, with funding from the Norwegian Ministry of Food and Agriculture.

VIPS Internationally

VIPS facilitates research, development and extension with focus on easy customization from the local to the international level. This versatility has provided the opportunity to integrate VIPS with several international projects in Europe, Asia and Africa.

Pest and disease risk prediction models

Models provided through VIPS are generally available for use in any country. However, many models are developed and adapted to fit local cropping regimes and climate conditions. No model should therefore be used in other regions without local test and validation. Available models are listed VIPS.

Open source

The source code of VIPS is available by request for users signing the VIPS open source contributor agreement (www.nibio.no/licenses). Any model of relevance or amendments to the system can be implemented and shared with VIPS users worldwide. All models should be open for sharing with other users of the system. However, pending on the ownership of the models, some models can be exempt from open source, and royalties may apply to users of such models.

Weather data input

Any weather driven pest or disease model should be based on data input from local and reliable weather data sources. The data must be available for automatic downloading from an online source. The specific parameters needed will depend on the model. The most common weather parameters needed are temperature, relative humidity, rainfall and leaf wetness. Some models also require parameters such as radiation, wind and soil temperature.

An overview of VIPS compatible automatic weather stations is available on request. When weather stations are scarce or unreliable, weather forecasts and nowcasting can be used as replacement data sources. World-wide weather services, such as the Norwegian yr.no can provide weather forecasts through an API.

Observations of pests and data from traps

Input of data related to georeferenced observations of pests and diseases, or observations from pest traps can be entered through a web solution or an app. This input can be presented in maps, or used as input in addition to weather data in pest and disease models.

Research collaboration

The VIPS platform is designed to initiate international research collaboration to create new and improved tools for better implementation of integrated pest management. The open source license allows users to make adaptations and changes to accommodate local needs, implement, test and validate models locally or as part of an international network, and eventually provide the models directly to end users through the same systems. The practical use and local implementations of VIPS should be based on close interactions between researchers, agricultural advisers and farmers.

Model output distribution

The output from models and recommendations for management can be presented in a format accustomed to end-user needs. This can be a web site, text messages, etc. The format and distribution of information towards end users will depend on each country's infrastructure and organization of agricultural production. In many countries, the typical distributor of model outputs and corresponding treatment recommendations is the advisory service.

For international use, the VIPS web service can be translated and adapted to local needs. Alternatively, model outputs can be amended for use in existing web services and/or apps where users are accustomed to find information related to agricultural practices and pest management.

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