

CPO model for Brown rust in Barley

FACTSHEET

Brown rust is a fungal disease, causing damage in barley

Brown rust (*Puccinia hordei*) is known to attack barley. Fungicide treatments may need to be applied between start of elongation (GS 30) and full flowering (GS 65), to protect leaves from attack of brown rust and yield losses.



Brown rust in barley.

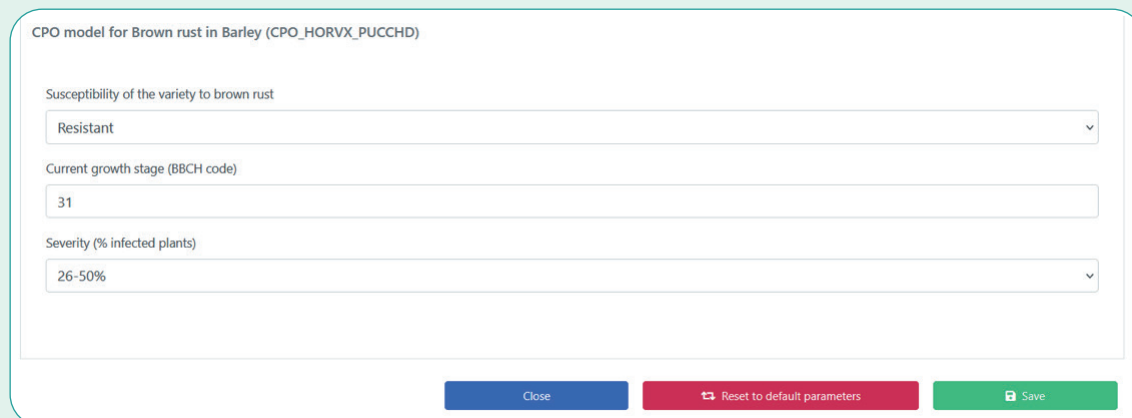


Control with help of DSS on platform.ipmdecisions.net

The CPO brown rust model is recommending treatments in barley when thresholds are exceeded. The risk of attack is based on visual monitoring using frequency of plants attacked. In susceptible cultivars treatments are recommended at lower incidence levels than in resistant cultivars. If treatments are recommended, specific fungicides known to be effective against barley brown rust should be chosen. When running the brown rust model the risk for yield losses from other diseases is not considered. If no action is recommended it is advised to revisit the crop after approximately one week to make a new evaluation of the risk.

DSS parameters

To obtain accurate risk predictions it is essential to click on the 'Edit parameters' button and enter information on the cultivar's susceptibility to brown rust. Only two categories are used: susceptible and resistant, if a cultivar is categorized as partly resistant, it is recommended to consider it as susceptible. Enter the specific growth stages at the time when the crop monitoring was done. Enter information on the incidence of attacked plants by brown rust based on scouting the crop. The disease observation is the percentage of plants showing any infection. For example, if 25 plants out of 100 show even a very small amount of disease and the remaining 75 plants are completely healthy, then the observation is 25%. Between GS 30-31 whole crop should be assessed. Between GS 32 and 65 assessments should be based only on 3 upper leaves. Clicking on 'Save' will keep the observations entered and update the risk. The model does not automatically adjust risk for the effect of previous fungicide sprays. If a fungicide effective against brown rust has been applied in the last 10 days, the risk can be interpreted as low.



The screenshot shows a web form titled "CPO model for Brown rust in Barley (CPO_HORVX_PUCCHD)". It contains three input fields: "Susceptibility of the variety to brown rust" with a dropdown menu set to "Resistant", "Current growth stage (BBCH code)" with a text input field containing "31", and "Severity (% infected plants)" with a dropdown menu set to "26-50%". At the bottom of the form are three buttons: "Close" (blue), "Reset to default parameters" (red), and "Save" (green).

Figure 1. Parameters DSS to be customized

DSS output

The DSS shows information about the risk of infection in barley.

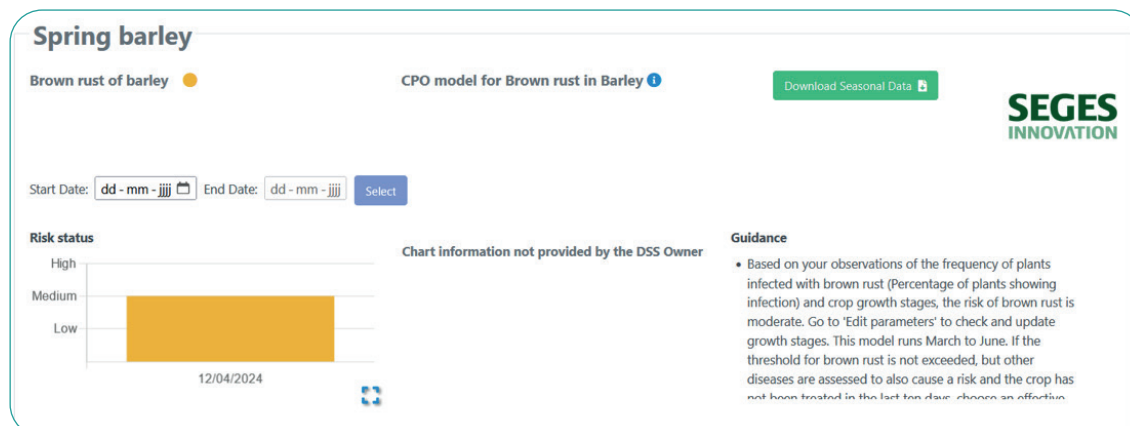


Figure 2. Risk information from DSS CPO model for brown rust in barley

The 'Risk status' chart indicates the daily risk for the infection of the barley crop.

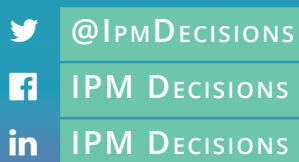
Where can DSS be used

The DSS is created by Aarhus University and SEGES and released in Denmark in 2000. The whole CPO model has been tested in the Nordic and Baltic countries previously, but this might not have included testing of the specific mildew rust part. This model may be of use in other countries in Northern Europe, it is important to first test in practice before using the DSS for decision support.

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