Assessment of ascochyta blight (*Ascochyta fabae)* on faba bean

Method/protocol submitted by:
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Objectives of the method/protocol:
To estimate the incidence and severity of ascochyta blight on faba bean under field conditions.

Brief description of the method/protocol:
This protocol presents a sampling and an assessment method to assess the ascochyta blight development on leaves and pods in field experiments on faba bean. A disease scale is given for the calculation of a disease index on pods and leaves.

Possible uses of this method/protocol:
This protocol could be used for instance to distinguish cultivars according to their resistance to ascochyta blight.

Method/protocol:
    o   Observation unit
Each plot consists of five rows of 30 seeds spaced at 0,01 m with 0,45 m between row and plot.

    o   Sampling of the plants
Plants are sampled at several dates during the cropping season. Period and frequency are adapted to the objectives of the experiment. Disease assessment is made on ten individual plants per plot at each sampling date.

    o   Disease assessment
        o   Disease incidence
        The incidence of disease is expressed as the percentage of infected leaves or pods per plant.
        Percentages can be transformed into angles (arcsin transformation) for analysis.
        o   Disease severity
        A leaf or pod disease index can also be calculated per plant, to assess disease severity.
        Each leaf or pod is scored using a severity scale with 5 classes (Maurin, 1989):
            0 = no visible lesion,
            1 = 1-2 small lesions (<5 mm),
            2 = 1 to 2 lesions with pycnidia,
            3 = more than 2 lesions with pycnidia or 25-50% of pod or leaf area covered,
            4 = 50-75% of pod or leaf are covered, stem cut,
            5 = stem cut, dead plant
        o   Disease index
        The leaf or pod index is the mean of the scores for leaves or pods per node. These indexes are calculated for the same plants during the whole cropping season: nodes are marked and numbered to ensure consistent assessment between the scoring dates.

References or examples of studies carried out by using this method/protocol:

Maurin N. and Tivoli B. (1992). Variation in resistance of Vicia faba to Ascochyta fabae in relation to disease development in field trials. Plant Pathology 41: 737-744.

Maurin, N. (1989). Biologie d'Ascochyta fabae Speg. et étude des relations hôte-parasite en vue de l'appréciation de la résistance de la féverole à l'anthracnose. PhD Thesis, Univ. of Rennes I, France, p. 133.