


PODS — Plant Observer & Diagnostic System | Winter Oilseed Rape | Pest Phenological Models (2)

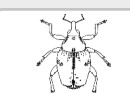


Autumn Pest




Cabbage stem flea beetle (*Psylliodes chrysocephala*)
Meta/Epimorph: M
Uni/Bi/Multivoltine: U
Autumn/Spring Pest: A


Spring Pests




Cabbage stem weevil (*Ceutorhynchus pallidactylus*)
Meta/Epimorph: M
Uni/Bi/Multivoltine: U
Autumn/Spring Pest: S




Pollen beetle (*Meligethes aeneus*)
Meta/Epimorph: M
Uni/Bi/Multivoltine: U
Autumn/Spring Pest: S



Cabbage seed weevil (*Ceutorhynchus obstrictus*)
Meta/Epimorph: M
Uni/Bi/Multivoltine: U
Autumn/Spring Pest: S



Brassica pod midge (*Dasineura brassicae*)
Meta/Epimorph: M
Uni/Bi/Multivoltine: M
Autumn/Spring Pest: S



Rape stem weevil (*Ceutorhynchus napi*)
Meta/Epimorph: M
Uni/Bi/Multivoltine: U
Autumn/Spring Pest: S

PROCEDURE POLLEN_BEETLE_DEFENSE

```
INPUT PARAMETERS:
  chillSum [C] // collected from the first soil frost
  maxDailyTemp_2m [C]
  meanDailyTemp_2m [C]
  soilMeanDailyTemp [C]
  soilType [*]
  sunshineDuration [h]
  windSpeed_2m [m/s]

LOCAL PARAMETERS:
  emergingSoilTemp [C]
  flightIndex [-]
  numOfMigrationDay [-]

OUTPUT PARAMETERS:
  chemicalTreatment [-]
  incrementSprayingVolume [%]

LET numOfMigrationDay 0

LOOP ON DAILY BASIS IF BBCH >= 30 AND BBCH < 60
BEGIN
  COMPUTING emergingSoilTemp

  IF (soilMeanDailyTemp > emergingSoilTemp on three consecutive days)
  BEGIN

    // emerging has began, testing migration

    IF (windSpeed_2m < 4.5 longer than 8h)
    BEGIN
      COMPUTING flightIndex

      IF (flightIndex >= 2)
      BEGIN
        INCREMENT numOfMigrationDay
      END
    END

    IF (numOfMigrationDay > 2 on two consecutive days)
    BEGIN

      // migration has began: chemical treatment
      // is needed to minimize the egg-laying

      on 2 or 3 consecutive days
      IF (chillSum < 100 C)
      BEGIN

        // mild winter enables larger volume of beetles

        incrementSprayingVolume(+25 %)
      END

      // resistance of pollen beetle against pyrethroid,-
      // thiacloprid is neonicotinoid: cannot be used

      chemicalTreatment(carbamates OR organophosphates)

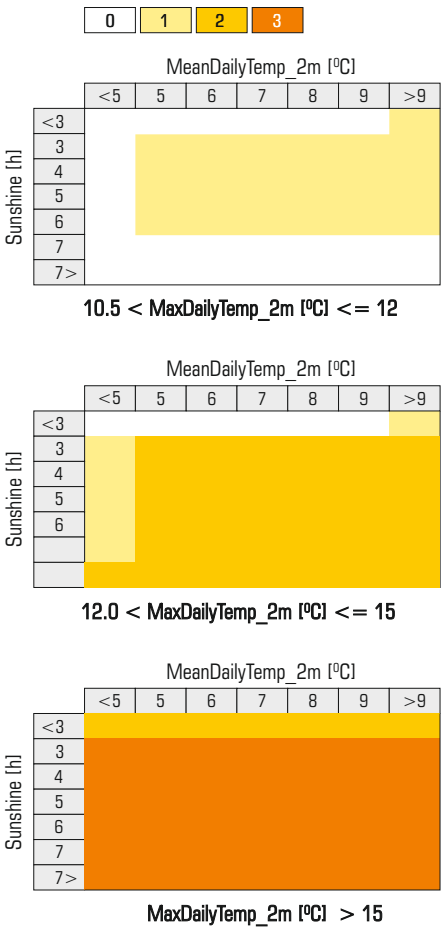
      // once the crop is in flower, it is no longer at risk:
      // flowering crops will not require treatment, so...

      BREAK_FROM_LOOP
    END
  END
END
```

Emerging Soil Temperature

		chill sum [°C]		
		<100	100..150	>150
Soil type	Clay	12	13.5	15
	Sandy loam	12	13	14
	Silty clay loam	10	11.5	13

Flight Index of Spring Pests



References

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