

Integrated Pest Management Plan IPM Plan



Company name: _____

MPS number: _____

Date: _____

You can use this document to draw up your IPM plan. Integrated Pest Management (IPM) enables you to tackle fungi, weeds, insects and diseases in a sustainable way. The main aim of this sustainable approach is to prevent outbreaks of pests. Chemical crop protection agents are only used if there is no other more environmentally friendly alternative available that can deliver the same result. In an IPM plan you weigh up all the available techniques and alternatives against one another. This results in a sustainable, economically viable plan that can help prevent and control pests and diseases.

Table 1: Description of pests of economic relevance

You can list the pests of economic relevance by crop or crop group in this table. Pests of economic relevance are pests that have a demonstrable impact on the crop or crop group. Pests of no economic relevance do not have to be listed.

In this table, the pests are subdivided by type. There is a column for insects (e.g. whitefly, thrips, mites), a column for diseases (e.g. fungi such as Botrytis, mildew, bacteria, viruses and nematodes) and one for weeds.

Crop or crop group	Pests (economic relevance)		
	Insects	Diseases	Weeds

Integrated Pest Management Plan IPM Plan



Table 2: Images and symptoms of the pests

In this table you can provide further details of the pests of economic relevance listed in table 1. Record the name of the pest in column 1. If you have listed a particular pest more than once in table 1, you only need to enter it once in table 2.

In column 2, add an image of each pest or a reference to an image showing how it can be identified (e.g. to a website or the poster in your office). Describe symptoms of an affected crop or references to websites or databases with the symptoms in column 3.

In column 4, list the ideal conditions for the rapid spread of the pest (enter the applicable number in the column):

1. High temperature
2. Highly fluctuating temperature (day/night)
3. Humid climate
4. Dry climate
5. Crop residues/old plants
6. Other

In column 5 of this table, record what the economic threshold is for taking measures. The economic threshold is the point in time at which you judge the expected loss of yield caused by the pest to be greater than the cost of tackling the pest (enter the applicable number in the column). If the same pest has different economic thresholds for different crops, indicate this with different numbers.

1. No alternative available
2. The pest is too far advanced in the crop
3. Biological control is not an option
4. Economic loss will be too great
5. Other

Integrated Pest Management Plan
IPM Plan



Name of pest (disease)	Image or reference	Description of symptoms	Ideal conditions for spread of pest	Economic threshold

Integrated Pest Management Plan
IPM Plan



Name of pest (disease)	Image or reference	Description of symptoms	Ideal conditions for spread of pest	Economic threshold

Integrated Pest Management Plan IPM Plan



Table 3: Preventive measures

In this table you can list the preventive measures you can take at the company level. Taking preventive measures is an essential initial step before the pest or disease establishes in the crop. In addition, IPM can help reduce the use of crop protection agents.

In the table there are various types of preventive measures to choose from. In the last column, state the reasons why they apply.

Preventive measures	Measure	Yes/no	Reasons
Resilient plants	Variety characteristics		
	Healthy starting material		
	Use of plant invigorators		
Company hygiene	Crop changeover/crop rotation		
	Use of clean starting material		
	Soil disinfection		
	Hygiene protocol		

Integrated Pest Management Plan

IPM Plan

Preventive measures	Measure	Yes/no	Reasons
Company hygiene	Maintenance/cleaning/ disinfecting of machines		
	Drain/irrigation water disinfection		
	Removal and correct disposal of diseased plants		
	Use of insect screens		
	Hygiene sluice/work clothing etc.		
Resilient cultivation environment	Composition of growing medium		
	Composts or organic additives mixed in		
	Fertilisation (e.g. to increase disease tolerance)		
	Microbiological composition of irrigation and recirculation water		

Integrated Pest Management Plan

IPM Plan

Preventive measures	Measure	Yes/no	Reasons
Resilient cultivation environment	Climate (e.g. dew formation, temperature)		
	Lighting (LED lights, indirect effect of lighting)		
Natural predators (beneficial organisms) and antagonists	Use of natural predators (beneficial organisms)		
	Use of banker plants (indoor cultivation)		
	Use of microorganisms		
	Use of ground cover vegetation strips (outdoor cultivation)		
Other measures			

Integrated Pest Management Plan IPM Plan



Table 4: Pest monitoring methods

In this table, list the methods you use to monitor pests at the company level. Monitoring pests provides an objective overview of everything happening in the greenhouse (or outside) that can impact on the development of the plant. This includes both pests and organisms that are beneficial to the crop. Based on the methods you use for pest monitoring, you can decide how, where and when measures should be taken.

Monitoring	How	Yes/no	When
Scouting	By worker		
	By grower		
	By crop consultant/adviser		
Resources	Sticky traps (yellow or blue)		
	Pheromone traps		
	Insect lamps		
	Spore traps		

Integrated Pest Management Plan IPM Plan



Monitoring	How	Yes/no	When
Resources	Drain or irrigation water analyses		
	Tagging pests/diseases		
Monitoring cultivation conditions	Weather forecasts		
	Crop scanner		
	Decision support systems (DSS)		
	Recording checks carried out		
Other measures			

Integrated Pest Management Plan

IPM Plan



Table 5: Control measures

Record your use of chemical and non-chemical control measures in table 5. Here you can list and explain which of these measures you have taken and why. Biological, mechanical or physical (e.g. insect screen) controls should take preference over chemical controls. Combining different techniques can reduce your overall use of chemicals.

Control measures	Measure	Yes/no	Reasons
Use of non-chemical measures	Use of insect traps		
	Use of insect lamps		
	Use of disruptive factors		
	Use of insect screens		
	Manual/mechanical weeding		
	Use of biological pest control		
	Use of pheromones		

Integrated Pest Management Plan IPM Plan



Control measures	Measure	Yes/no	Reasons
Use of non-chemical measures	Other, namely:		
Use of chemical measures	Low-risk crop protection agent		
	Targeted crop protection agent		
	Agent effective against multiple pests and diseases		
	Crop protection agent with minimal side effects		

Integrated Pest Management Plan IPM Plan



Table 6: Monitoring resistance

This table lists the potential measures you can take to avoid the build-up of resistance to crop protection agents. State which are applicable and why. If you apply measures not listed in the table, you can add them at the bottom.

Measure	Yes/no	When
Applying dose stated on label		
Maximising the efficiency of pest control		
Minimum control frequency		
Alternating agents from different resistance groups		
Other, namely:		

You can find the resistance groups of crop protection agents on the following websites:

IRAC <https://irac-online.org/modes-of-action> (insecticides)

HRAC <https://hracglobal.com/index.php> (herbicides)

FRAC <https://www.frac.info/> (fungicides)