



General surveillance system

Lecturer: Jacek Żandarski

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INTRODUCTION

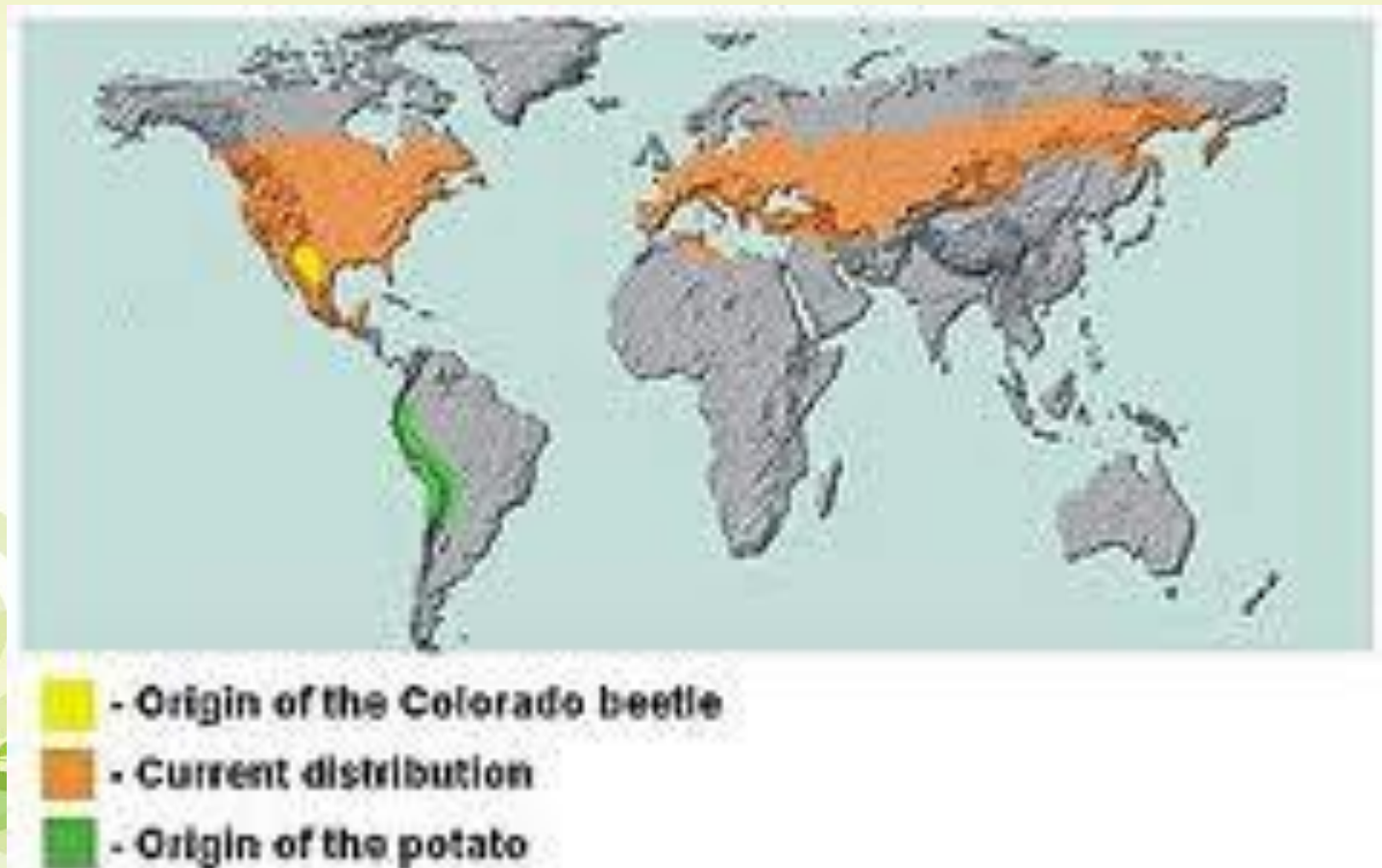
Article IV of the IPPC lays down that:

- ➡ 1. Each contracting party shall make provision, to the best of its ability, for an official national plant protection organization with the main responsibilities set out in this Article
- ➡ 2. The responsibilities of an official national plant protection organization shall include the following:
 - ➡ (b) the surveillance of growing plants, including both areas under cultivation (*inter alia* fields, plantations, nurseries, gardens, greenhouses and laboratories) and wild flora, and of plants and plant products in storage or in transportation, particularly with the object of reporting the occurrence, outbreak and spread of pests, and of controlling those pests, including the reporting

INTRODUCTION

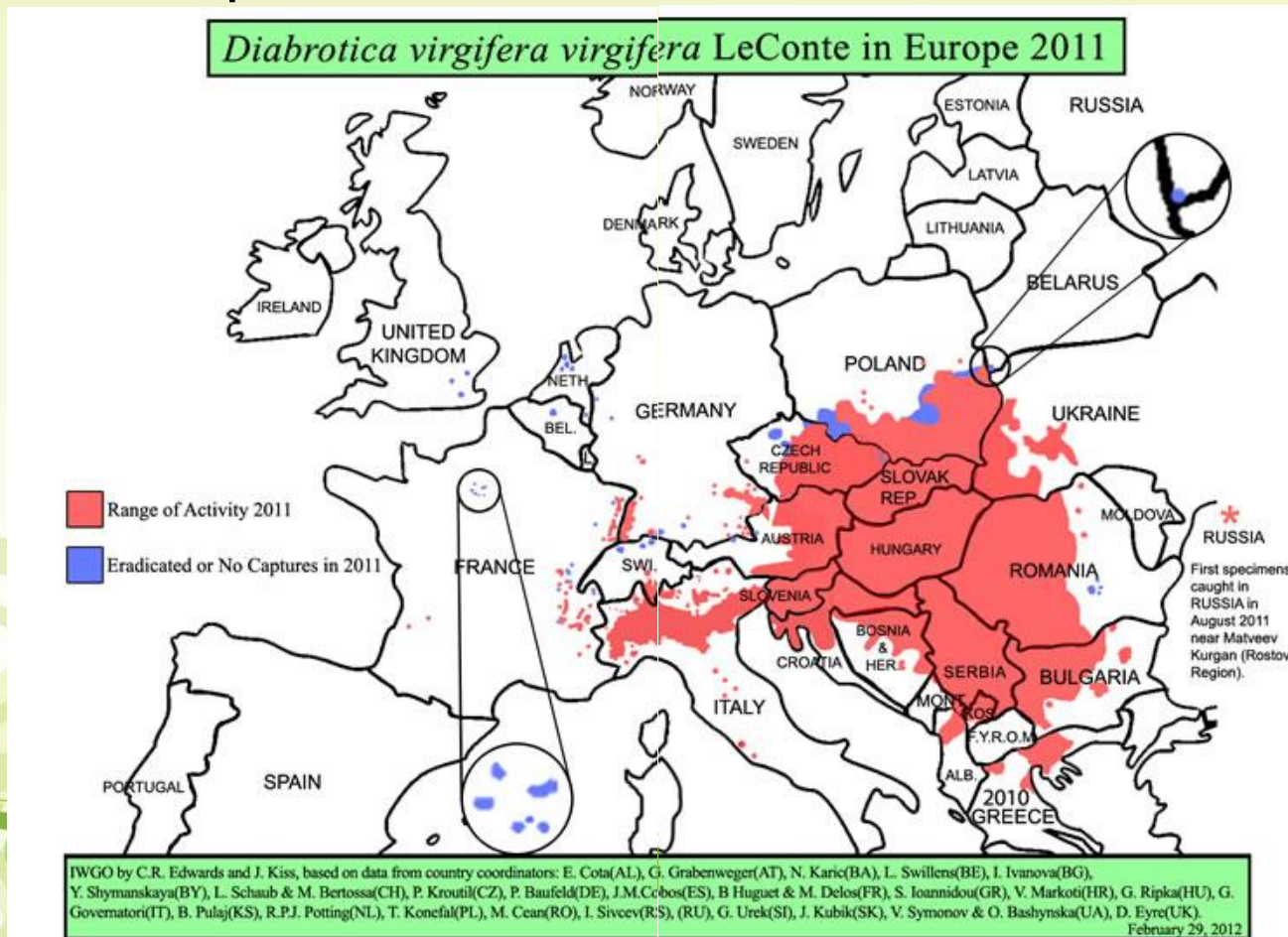
Goals

- ➡ Need to be aware of the plant pest situation in the country
- ➡ Gather information on pest occurrence and pest status



INTRODUCTION

- ➡ The absence of a record is not a reliable indication that the pest does not occur
- ➡ To discover outbreaks of the pest or to declare pest freedom a specific action is needed



Main terminology used

- ➔ **Pest** - any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products
- ➔ **Quarantine pest** - a pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled
- ➔ **Regulated non-quarantine pest** - a non-quarantine pest whose presence in plants for planting affects the intended use of those plants with an economically unacceptable impact and which is therefore regulated within the territory of the importing contracting party

Main terminology used

- ➡ **Regulated pest** - a quarantine pest or a regulated non-quarantine pest
- ➡ **Harmful organisms** - shall be considered to mean: any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products
- ➡ **In the new EU plant health law** – definitions of pests consistent with the IPPC and ISPM 5



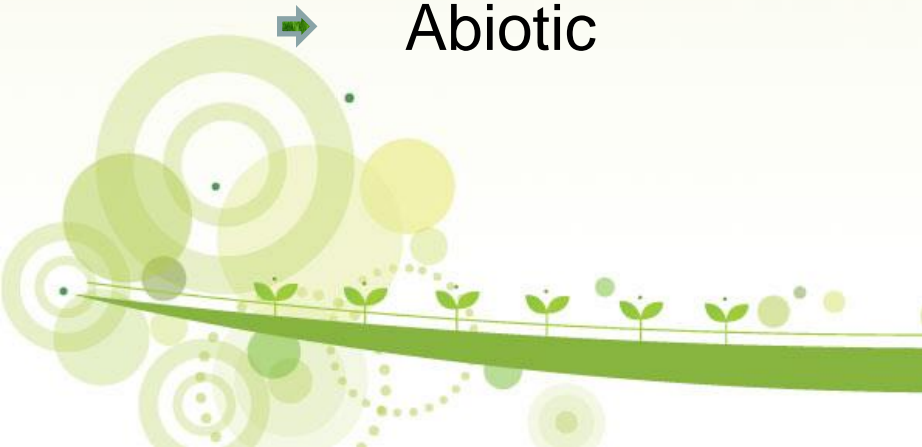
Diseases/pests of plants and plant products

What is the plant disease?

- ➡ Any disturbance that interferes with normal growth, development, function, economic value, or aesthetic quality of a plant
- ➡ Plant diseases can be caused by two general groups of causal agents

- ➡ Biotic (pathogens)

- ➡ Abiotic



Diseases/pest of plants and plant products

Abiotic factors (non-living factors)

- ➡ Temperature
- ➡ Moisture
- ➡ Nutrition
- ➡ Toxicity
- ➡ Wrong cultural practices, etc.

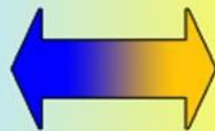


Diseases/pest of plants and plant products

Biotic factors (harmful organisms)

- ➔ Viroids and viruses
- ➔ Phytoplasmas
- ➔ Bacteria
- ➔ Fungi
- ➔ Nematodes
- ➔ Arthropods (insects, mites, etc.)
- ➔ Parasitic plants





Genetic abnormalities

Air pollutants

Viruses, viroids

Other chemicals

Bacteria

Soil acidity/alkalinity

Disease
(narrow sense)

Fungi, oomycetes

Nutrient imbalance

Low oxygen

Parasitic plants

Drought

Nematodes

Heat or frost

Insects, mites

Mechanical impact

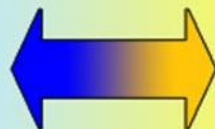
Other herbivores

Disorder

Disease
(broad sense)

Injury

Non-living, abiotic

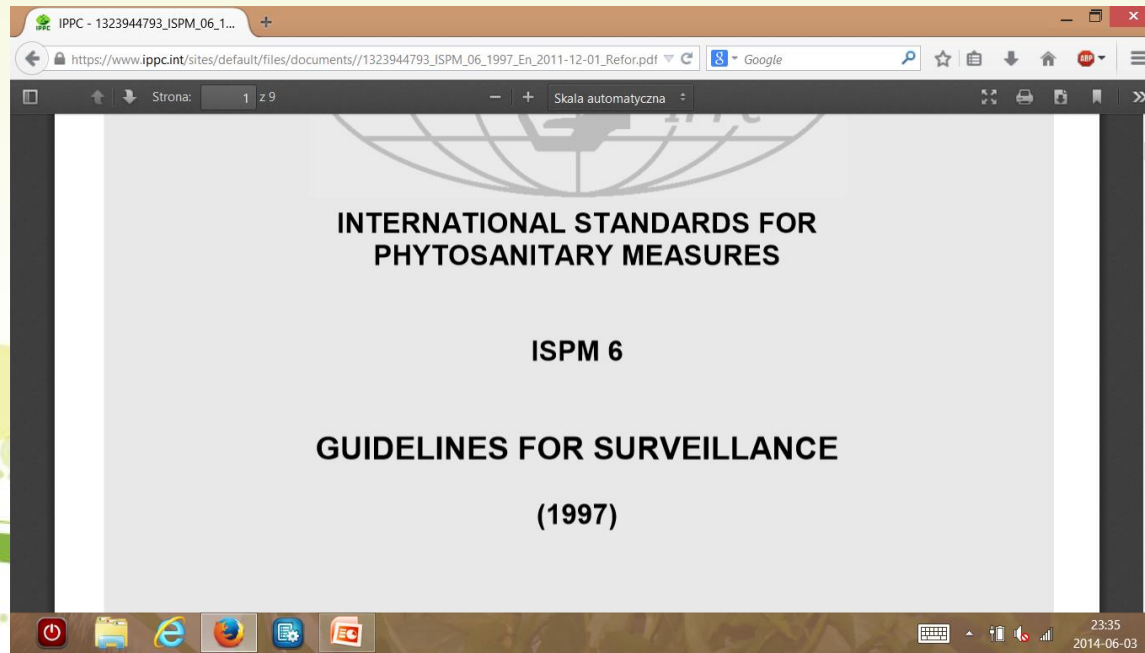


Living, biotic

Surveys and surveillance

Relevant ISPMs

- ➡ Guidelines for surveillance (ISPM 6)
- ➡ Determination of pest status in an area (ISPM 8)
- ➡ Pest reporting (ISPM 17)
- ➡ Guidelines on lists of regulated pests (ISPM 19)



Surveys and surveillance

Surveillance *versus* surveys

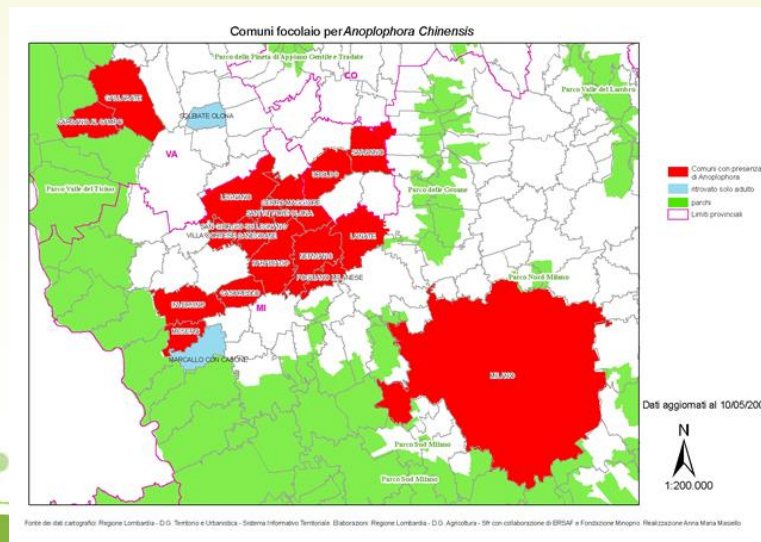
➡ **Surveillance** - is an official process which collects and records data on pest occurrence or absence by survey, monitoring or other procedures

➡ **Surveys** - is an official procedure conducted over a defined period of time to determine the characteristics of a pest population or to determine which species occur in an area



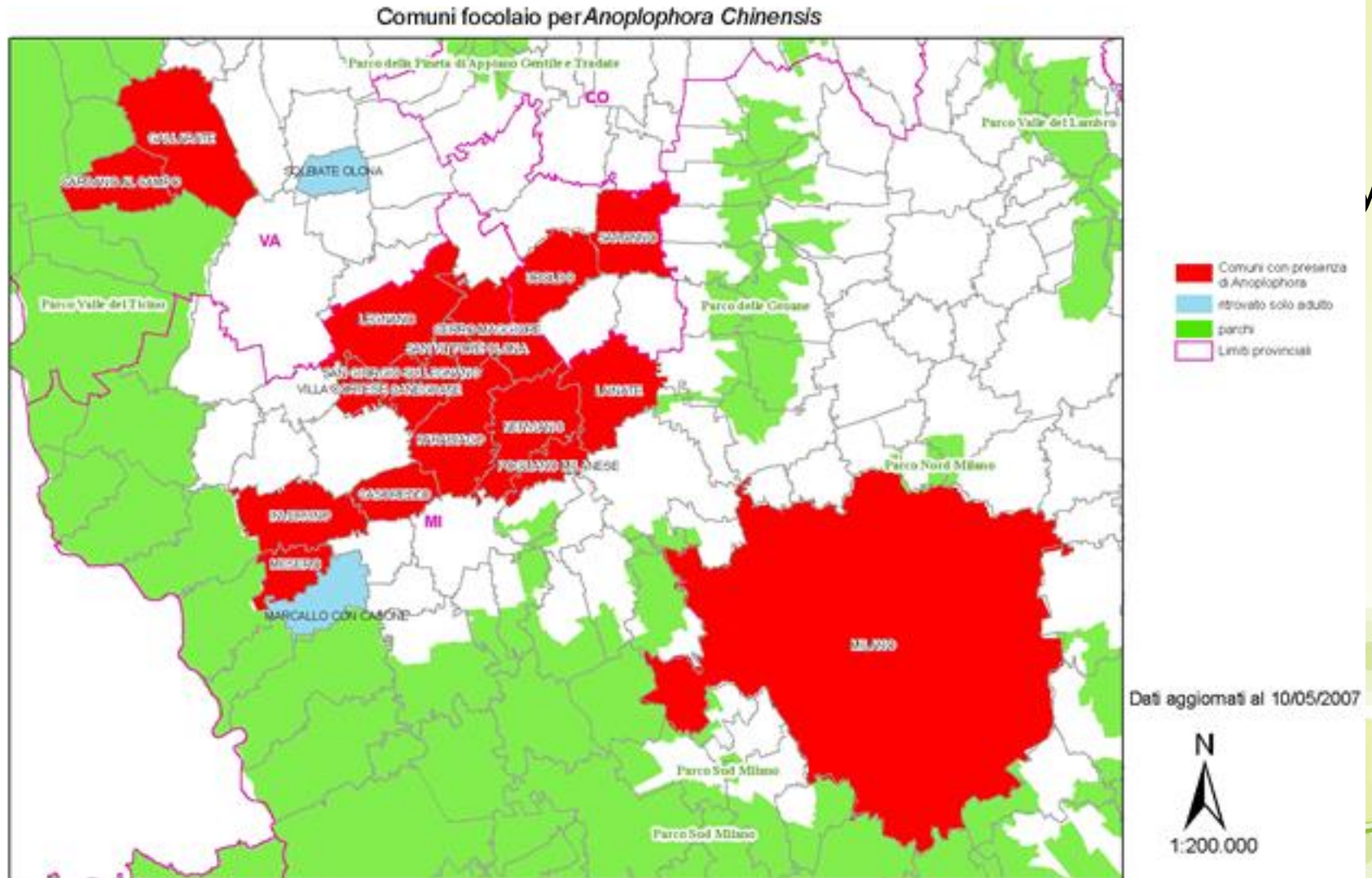
Surveys and surveillance

- ➡ **Detection surveys** - surveys conducted in an area to determine if pests are present
- ➡ **Delimiting surveys** - surveys conducted to establish the boundaries of an area considered to be infested by or free from a pest
- ➡ **Monitoring surveys** - ongoing surveys to verify the characteristics of a pest population



Surveys and surveillance

Detection surveys surveys conducted in an area to



Surveys and surveillance

➡ „not known to occur” *versus* „known not to occur”

➡ **Surveillance** – lack of reports of a specific pest allows for declaration „not known to occur”

➡ **Commodity/crop specific surveys** – lack of reports of a specific pest allows for declaration „not known to occur”

➡ **Pest specific surveys** – lack of reports of a specific pest allows for declaration „known not to occur”



Surveillance

- ➡ Collection and analysis of all already available data (own records; historical records; information from the farmers, operators and public; interception data; scientific publications; etc.
- ➡ Official and intentional activities to gather the relevant information by designated authorities (normally these are plant health services)



Proposed procedure for surveillance in BiH

- ➔ Gathering of all already available data and information by the BiH Ministry (NPPO)
- ➔ The variety of inspection activities to be carried out by inspectors and scientists
- ➔ Any plant material suspected to be infected by regulated pests to be sampled and analysed in a laboratory; the result goes back to the inspector or scientist
- ➔ In case of a regulated organism's finding, a notice is sent first to the entity authorities, then to the NPPO
- ➔ The NPPO registers all reports, compiles and makes analyses, including distribution maps, and publishes or makes transparent in case of any need

Proposed procedure for surveillance in BiH

Inspections by authorized officials; sampling if necessary;
delivery of a sample to the lab; inspections are recorded

Sample goes to a lab

Result goes to
inspector

Positives notified to
the NPPO

Laboratory analyses in a
lab; results sent back to
the inspector

Registration of all findings;
analysis of data; assessment of
phytosanitary situation in the
country





GUIDELINES FOR SURVEILLANCE WITHIN THE TERRITORY OF Bosnia i Hercegovina



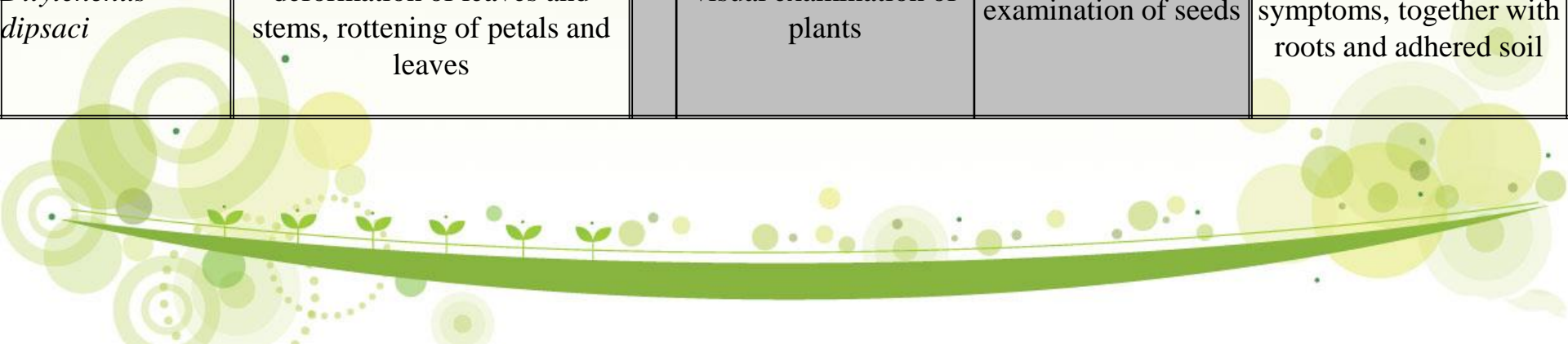
Proposed procedure for surveillance in BiH

- ➔ All propagating material to be inspected; in some cases also deliberately sampled and laboratory analysed
- ➔ Other crops/plantations to be inspected based on the following assumptions:

No. of crops/objects within the territory of the region	No. of crops/objects to be inspected
Up to 10	All
From 11 to 100	20%, but not less than 10
More than 100	10%, but not less than 20

Medicago sativa L.

HARMFUL ORGANISM	Most typical symptoms	M O N T H S										Material to be taken as a sample
		III	IV	V	VI	VII	VIII	IX	X	XI	XII - II	
<i>Meloidogyne chitwoodi</i> , <i>M. fallax</i>	there are small galls on infected roots of a few millimeters in diameter; often there are no symptoms on aerial parts of plants			visual examination of plants								entire plants showing symptoms, together with roots and adhered soil
<i>Clavibacter michiganensis</i> ssp. <i>insidiosus</i>	wilting of plants, edges of leaves curl upward; proliferation of stems "witches broom"; reduction of plant growth; dwarfing; plants often die		visual examination of plants					examination of seeds				entire plants showing symptoms
<i>Ditylenchus dipsaci</i>	twisting, yellowing and deformation of leaves and stems, rottening of petals and leaves		visual examination of plants					examination of seeds				entire plants showing symptoms, together with roots and adhered soil



Proposed procedure for surveillance in BiH

- ➔ Control activities would be generally based on visual examinations of entire crops or their representative part(s), in most appropriate timing and sometimes several times a year
- ➔ If possible, for specific pests (principally insects) sticky or pheromone traps to be deployed



Information about a finding (to be delivered to the NPPO through the entity)

- ➡ Scientific name of the detected harmful organisms
- ➡ Species of host plant(s), on which the harmful organism has been detected
- ➡ Volume of production
- ➡ Exact location of the finding
- ➡ Estimated contamination/infestation rate
- ➡ Any additional information if considered useful

Main challenges

- ➡ Availability of good guidelines and technical instructions, especially symptoms descriptions
- ➡ Limited resources of the plant health services
- ➡ Limited capacity of the laboratories (qualitative and quantitative)
- ➡ Fluent and effective information flow
- ➡ Way of cooperation with farmers/stakeholders at stake
- ➡ Action plan needed in cases of findings



CONCLUSIONS:

- ➔ Official activities need to be taken by plant health services in BiH in order to be able to declare and prove the phytosanitary status of the country
- ➔ All these activities require close cooperation between the 4 main players: NPPO, authorities of entities, inspectors/scientists, and laboratories
- ➔ Already after first year of surveillance it should be possible to get the first overview of the phytosanitary situation
- ➔ General surveillance is only the start – further crop and pest specific surveys need to be implemented



Thank you for your
attention!!!





CONTACTS DETAILS:



Jacek Żandarski



E- mail: j.zandarski@piorin.gov.pl

