TRIPICRIN (Chloropicrin EC) soil fumigation in Czech Republic – 5 year experience

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OVOCNÁŘSKÉ DNY, 64. ročnik
Aldis Congres Center, 15-16 March 2022,
Hradec Kralove, Czech Republic

TRIPICRIN

- **Chloropicrin EC**
- Highly effective soil fumigant used worldwide
- Applied to empty soil prior to planting

- **Apple – replant disease/soil sickness**
- Strawberry, vegetables, flowers , tree nurserry

- **Soil born fungi** - Colletotichum, Cylindrocarpon, Fusarium, Phytophthora, Pyrenochaeta, Pythium, Rhizoctonia, Verticillium.
- **Nematodes –** Pratylenchus, Meloidogyne
- **Weeds –** all germinating weed seeds

Professional fumigation service

effective pathogen control

secure farming

cost - yield benefit

- Specialized fumigation company
- Controlled distribution and application

Why?

- Plant pathogen control
- Optimal rhizosphere conditions
- Better yield

When?

- no alternative
- no crop rotation
- high infestation

DRIP IRRIGATION

Broadcast

Stripe

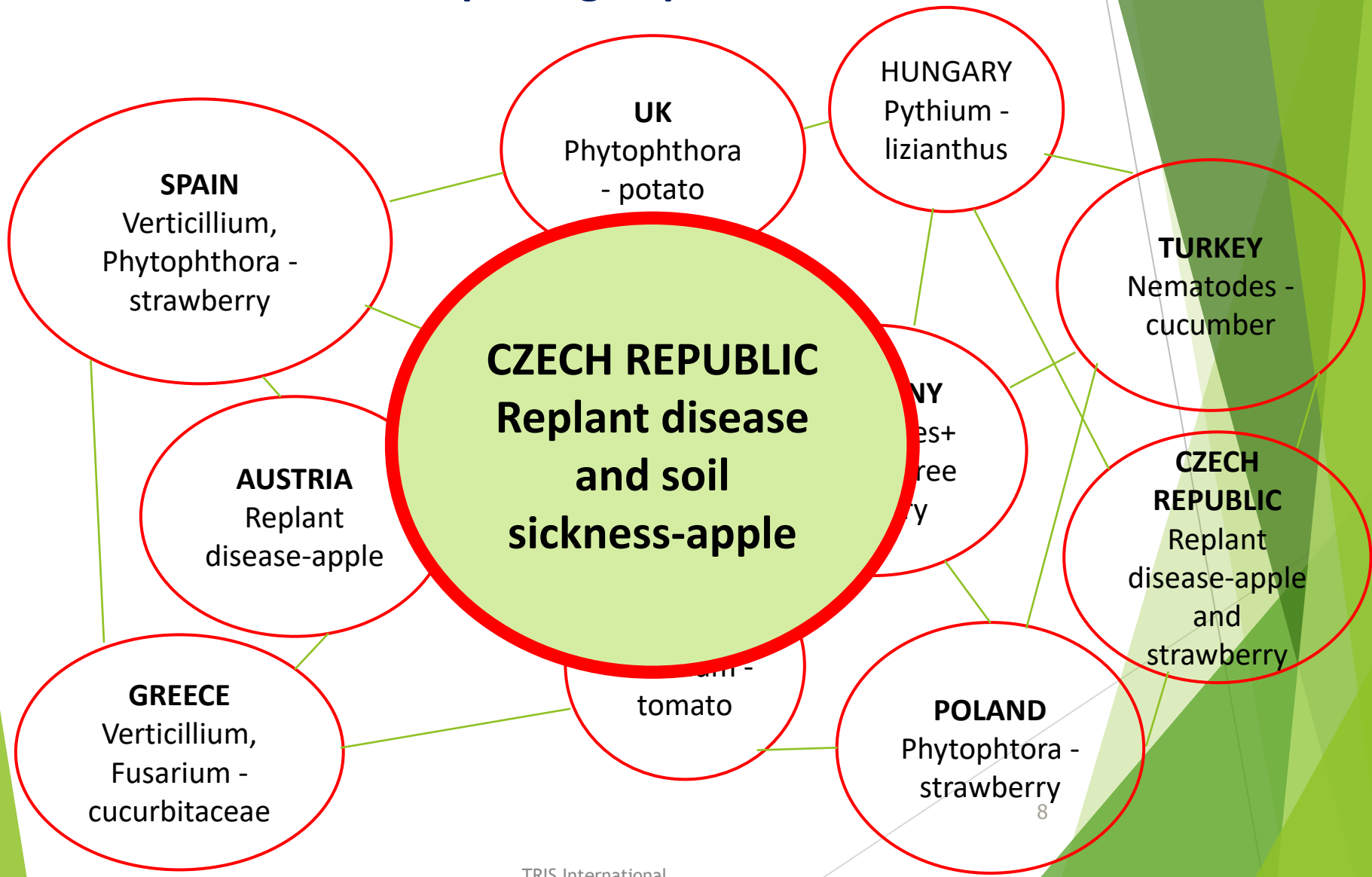
SHANK INJECTION

all in one go!

Broadcast

Stripe

Integrated approach on soil pathogen problem



Apple – soil replant disease

Joint EU project:

CZECH REPUBLIC -VSUO Research and Breeding Institute of Pomology Holovousy Ltd., Ing. Luděk Laňar

‘Evaluation of efficacy of soil fumigation against soil replant disease’

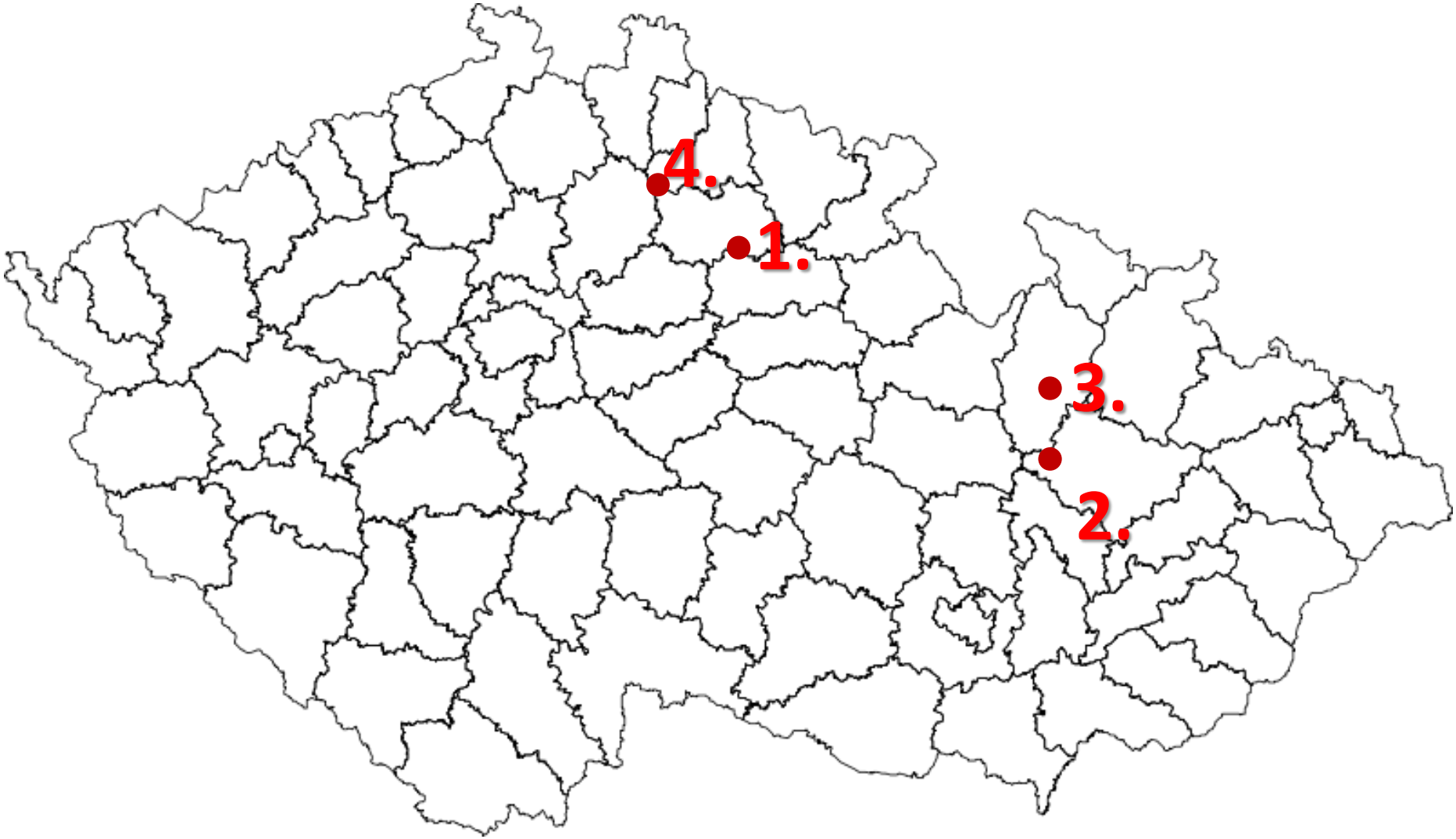
With newly build support cultivation systems and other orchard investments we expect more occurence and problems with replant disease in close future.

Metodika

- **4 lokality:** 2 Východní Čechy a 2 Střední Morava
- **2 varianty:**
  1. **Kontrola** – bez ošetření
  2. **Tripicrin 40 g/m² (99 % of chlorpicrin)** – profesionální aplikace společností TRIS International srl. Bologna, Italy
- **Design experimentu:** ošetřená a neošetřená parcelka – nepravé opakování
- **Datum aplikace**: 10. a 11. října 2016
- **Způsob aplikace**: kapkovou závlahou (voda jako nosič účinné látky)
- Ošetřená plocha byla přikryta nepropustnou plastovou fólií (VIF) před aplikací a v následujících 14 dnech po aplikaci

- **Hodnocení:**
  - **Obvod kmínku,**
  - **Počet a výnos plodů velkosti do 65 mm a nad 65 mm (2018-2021)**
  - **Ekonomický příklad - dopad**

Metodika

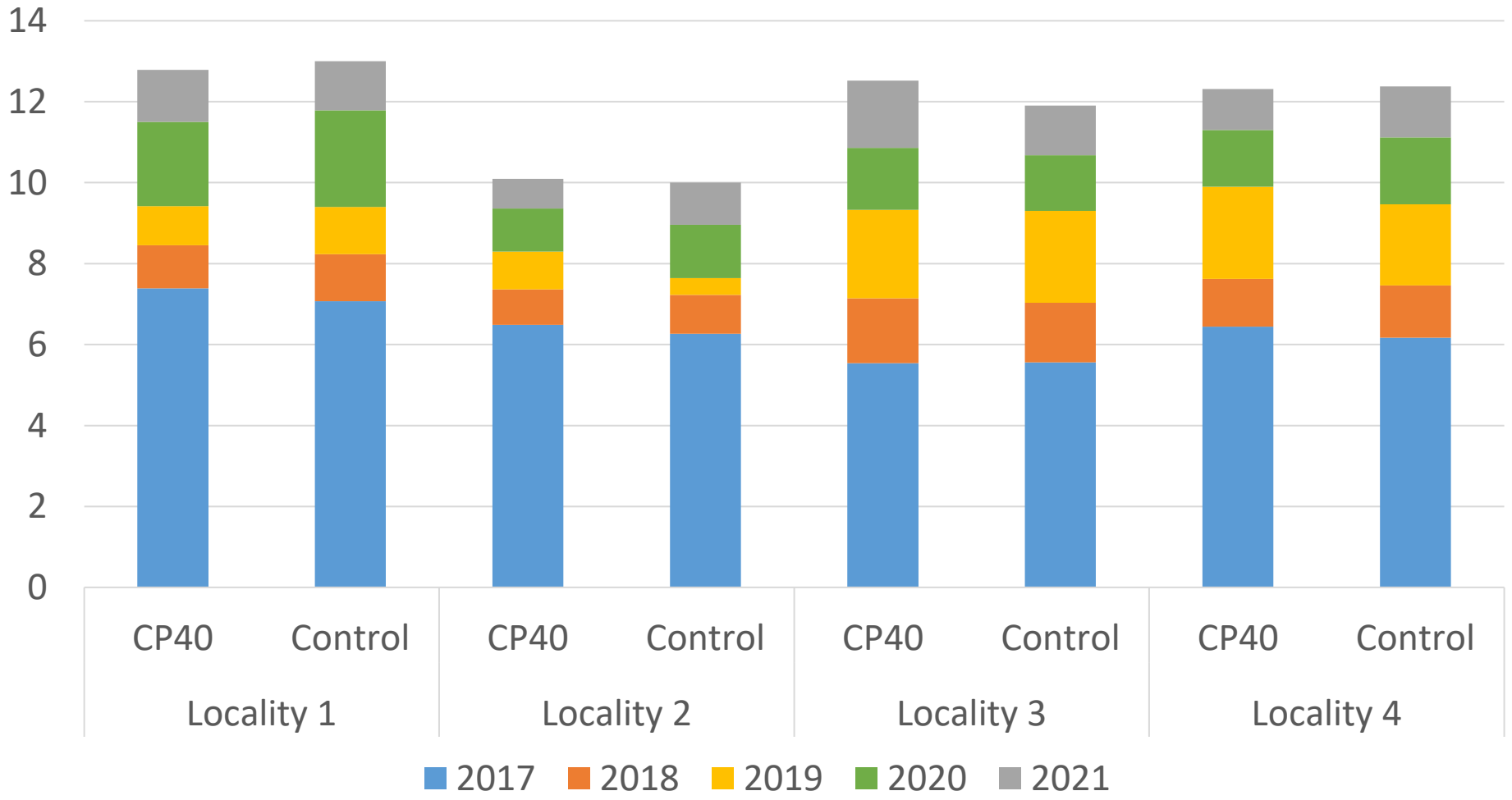


Lokalita	1	2	3	4
Datum aplikace	10.10.2016	11.10.2016	11.10.2016	10.10.2016
Typ aplikace	řádková	bloková celoplošná	řádková	řádková
Šířka řady	2m	16m	2m	2m
Délka řady	60m	40m	60m	30m
Aplikovaná dávka	40g/m2	40g/m2	40g/m2	40g/m2
Předchozí sad vyklučen	2015-03	2016-03	2015-03	2016-04
Datum výsadby	3.4.2017	jaro 2017	9.11.2016	4.11.2016
Odrůda	Galaval/M9	Gala/M9	Galaval/M9	Red Jonaprince/M9
Spon (m)	4 x 1	3,5 x 0,75	3,8 x 1,1	4 x 1,25
Výsadba do předchozích řad	ano	ne	ne	ano
Zavlažovaná výsadba	od r. 2020	ano	ne	ano

Založení pokusu

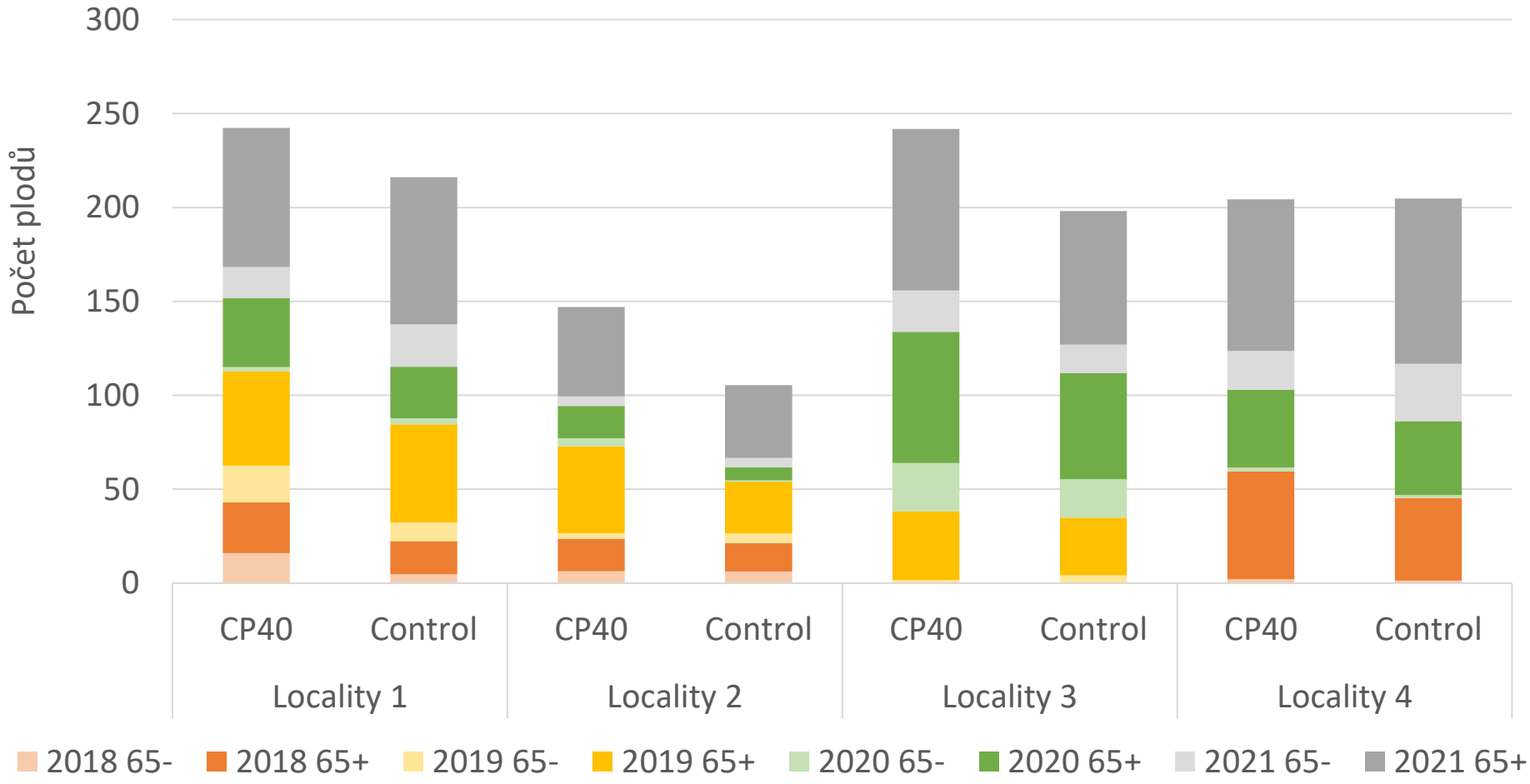
Výsledky – 2017-2021

Obvod kmínku



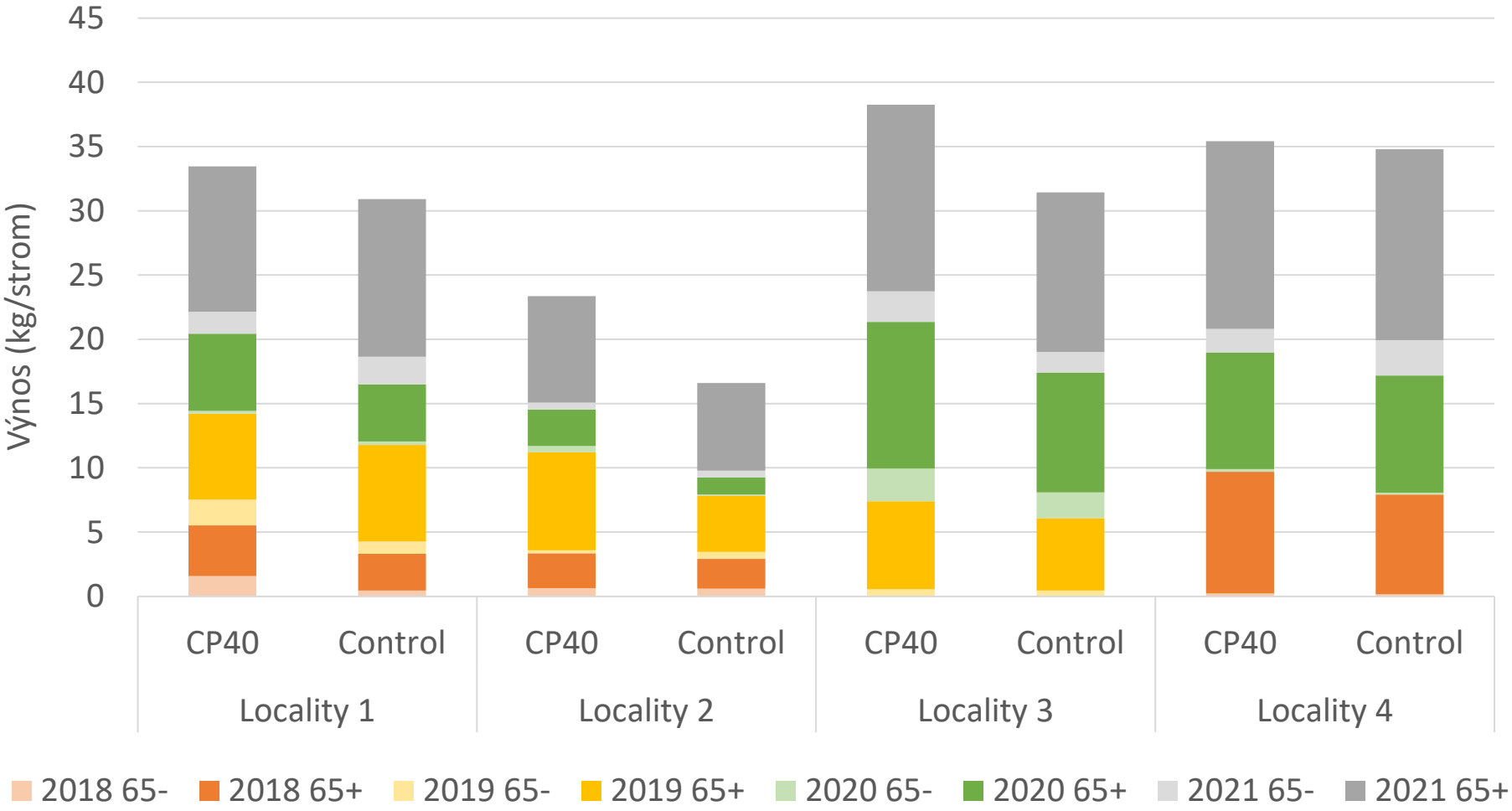
Výsledky – 2017-2021

Počet plodů na strom v jednotlivých letech a třídách



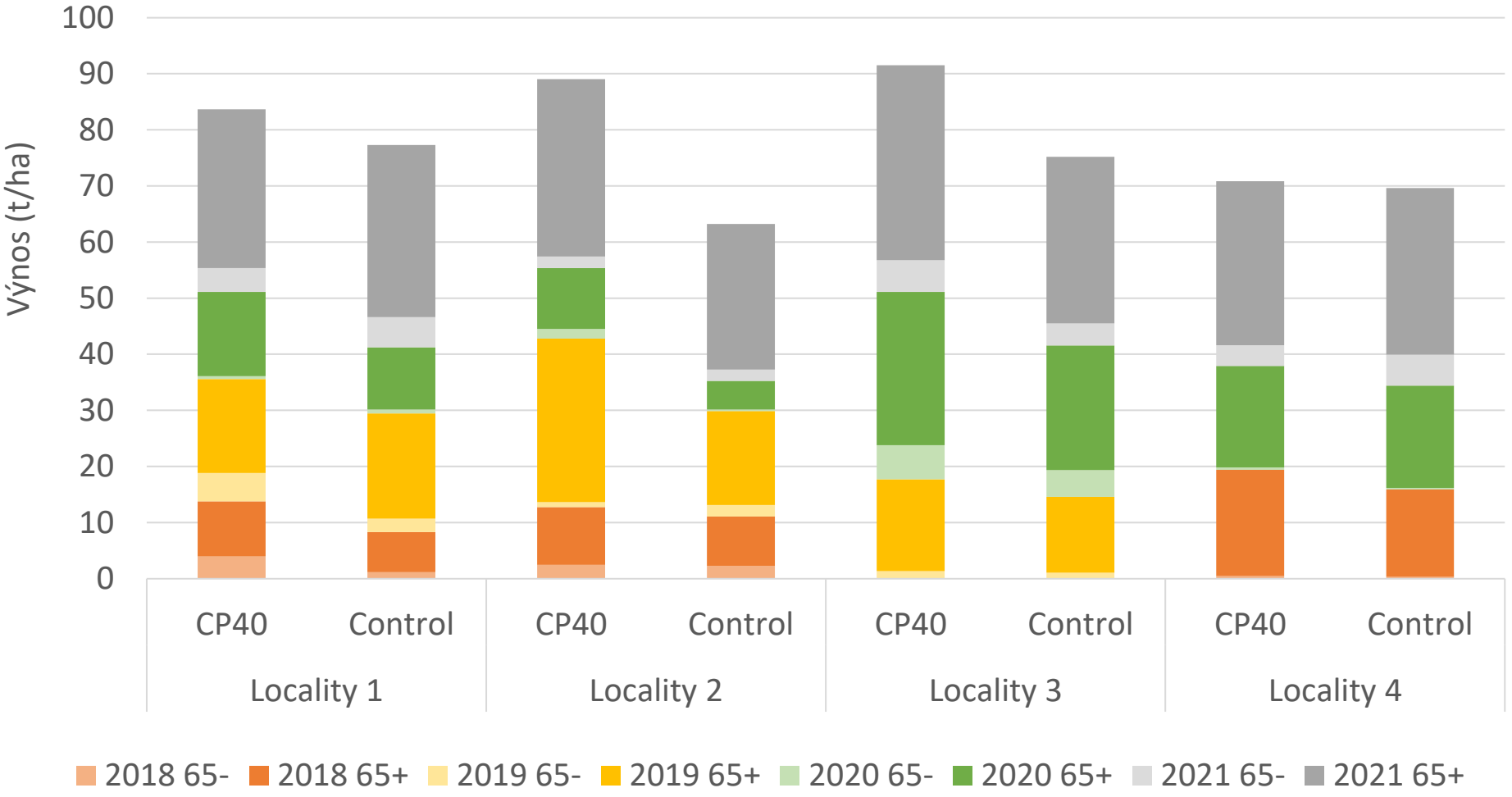
Výsledky – 2017-2021

Výnos v kilogramech na strom v jednotlivých letech a třídách



Výsledky – 2017-2021

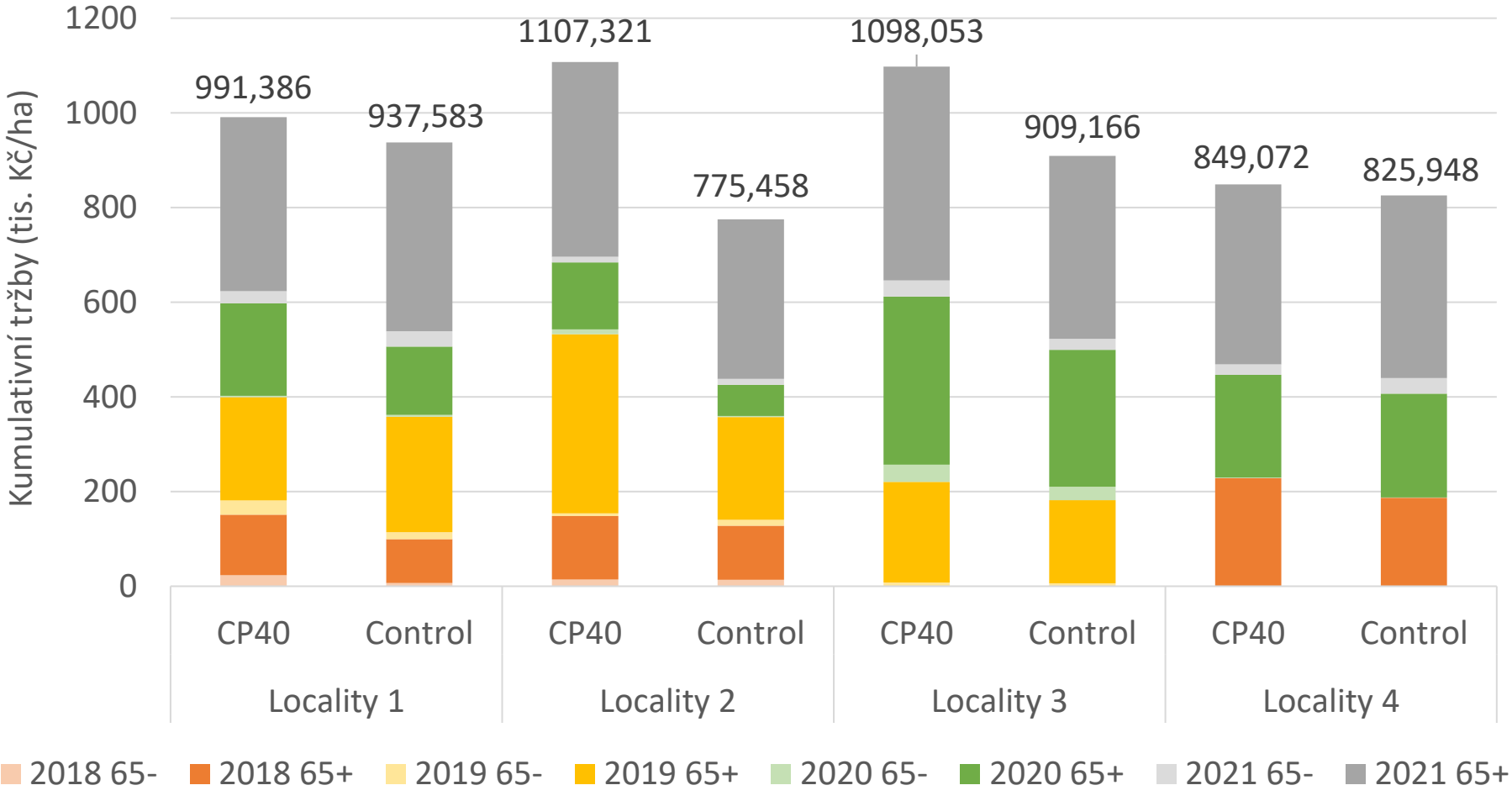
Výnos v tunách na hektar v jednotlivých letech a třídách



Výsledky – 2017-2021

´Gala´ 65- 6,-Kč a 65+ 13,- Kč
´Red Jonaprince´ 65- 2,50 Kč a 65+ 12,- Kč

Ekonomický příklad/model



Závěry

Výsledky pětiletého testování na 4 lokalitách:

1) Účinnost byla patrná na všech lokalitách
2) Obvod kmínku – v prvním roce patrný na 3 ze 4 lokalit, nevýrazné rozdíly mezi ošetřeními na všech lokalitách po 5 letech – korelace s plodností
3) Výnos – TRIPICRINEM ošetřené parcelky měly vyšší hodnoty na všech lokalitách
4) Ekonomický příklad – dopočítané tržby byly vždy vyšší na ošetřených parc.
5) Rozdíly ve výnosu a ekonom výsledku jsou variabilní mezi lokalitami.
6) Rozdíly mezi lokalitami přičítáme variabilitě půdních podmínek, povětrnostních podmínek, managementu atd.
7) Potenciální řešení půdní únavy

Integrated approach

- Addition of antagonistic fungi and bacteria, bioactivators
- Rate adoption according to infestation level
- Flexible application by professional operators
- Healthy plant in treated soil
- Education

Healthy root system

Less water consumption

Better nutrient uptake

Increased post resistance

Chloropicrin European dossier

- Assessment of the EU Dossier concluded in December 2021
- Review ongoing
- Product authorization expected 2023
- Emergency uses available

Final remarks

1. Safety
2. Professional approach
3. Efficacy
4. Compatibility

Create agronomically favored rhizosphere conditions for intensive crop production

COMMITTEE ON AGRICULTURE AND RURAL DEVELOPMENT
THE CHAIR

European Parliament

Mr Janusz Wojciechowski
Commissioner for Agriculture
European Commission
Rue de la Loi 200
B-1049 Brussels

D 302167 09.03.2022

Norbert Lins

IPOL-COM-AGRI D(2022)7683

Norbert LINS

Dear Commissioner,

On 7 March, AGRI coordinators and a Commission representative (Michael Scannell, Deputy Director-General DG AGRI) held an *in-camera* meeting to discuss the situation of EU agricultural markets in the wake of Russia's invasion of Ukraine. Mr. Scannell notably reported on the positions expressed in the Council and the steps planned or already undertaken by the Commission.

The discussion confirmed that the destruction inflicted on Ukraine and its people is the most shocking phenomenon with long-term direct impacts on the people of Ukraine. The resulting interruption of Ukrainian agricultural production and exports, as well as the legitimate sanctions imposed on Russia, will severely affect global markets and food supplies. The discussion confirmed our need to support and show solidarity with the people of Ukraine, to ensure food security for our citizens and to play our part in guaranteeing food security in regions of the world where this will be threatened by the current crisis. Increasing resilience in the supply chains will take concentrated and committed effort and decisive action will be needed.

In these circumstances, and following this exchange of views, a majority of Coordinators asked me to convey the following essential points to you.

- There is an urgent need to review the EU's approach to food security, in order to reduce our dependence on imports and increase domestic production. This is particularly pressing for products most at risk of shortages because of the suspension of Ukrainian exports, such as cereals, oilseeds, protein crops and fertilizers.

- Additionally, action at international level must be reinforced to anchor food security in policy decision-making to avoid scarcity in the most vulnerable countries, giving priority to food use of agricultural products and avoiding obstacles in international trade of food.

- To prevent the risk of protein shortage, the Commission should promptly take all necessary steps to temporarily allow the use of plant protection products where effective on those ecological focus areas, which are suitable for growing protein crops for the duration of the crisis. Further measures will be needed to support the use of innovative and sustainable production methods on these areas.

KEY POINTS

- The resulting interruption of Ukrainian agricultural production and exports, as well as the legitimate sanctions imposed on Russia, will severely affect global agriculture
- There is an urgent need to review the EU's approach to food security, in order to reduce our dependence on imports and increase domestic production
- the Commission should promptly take all necessary steps to alow the use of plant protection products needed for specific agriculture needs
- The European Commission should prepare without delay a detailed action plan to ensure the correct functioning of our food supply chains and ensure food security within the EU, covering over 50% of domestic needs

Thank you for your attention!

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