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CORE organic

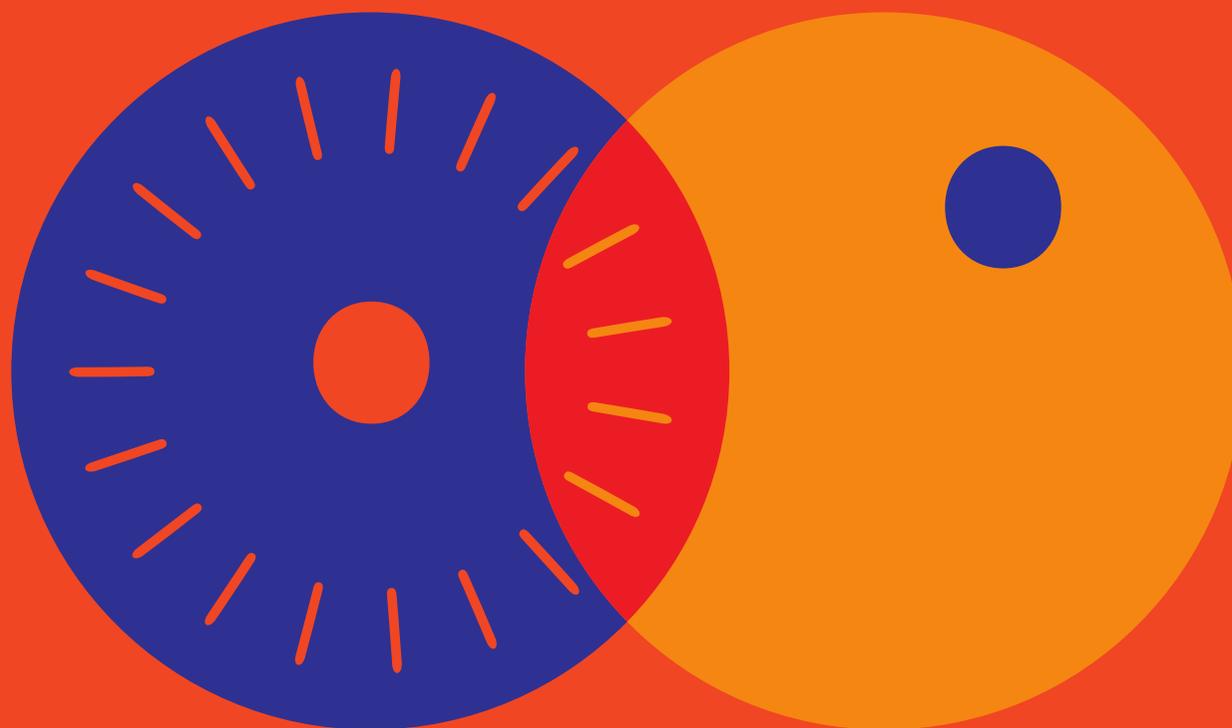
Projekt finansowany przez Narodowe
Centrum Badań i Rozwoju w ramach
programu ERA-NET CO-FUND



Narodowe Centrum
Badań i Rozwoju



WULS activity



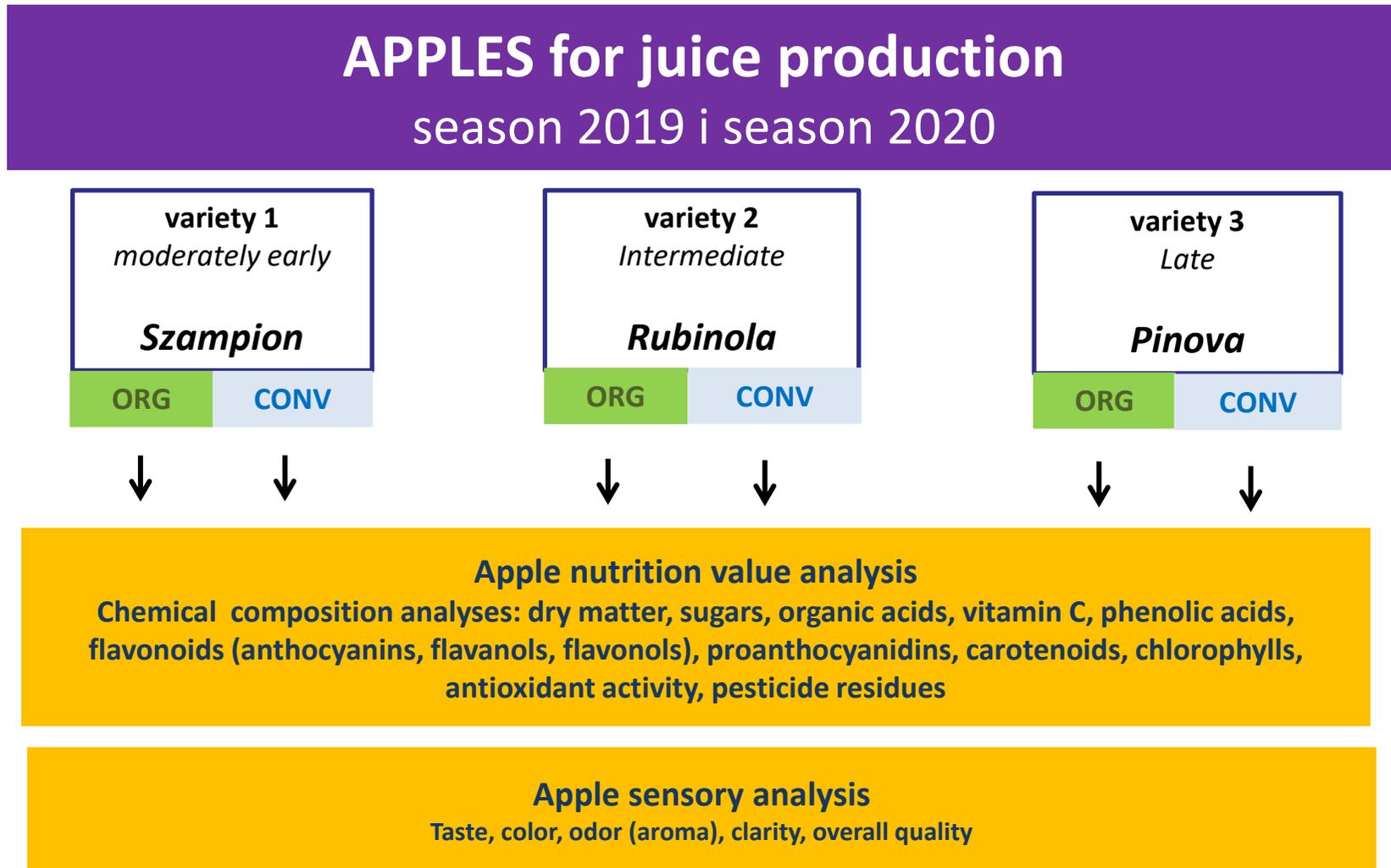
Prof. dr hab. Ewa Rembiałkowska
Mgr inż. Karolina Misztal

Warsaw, 04.06.2020

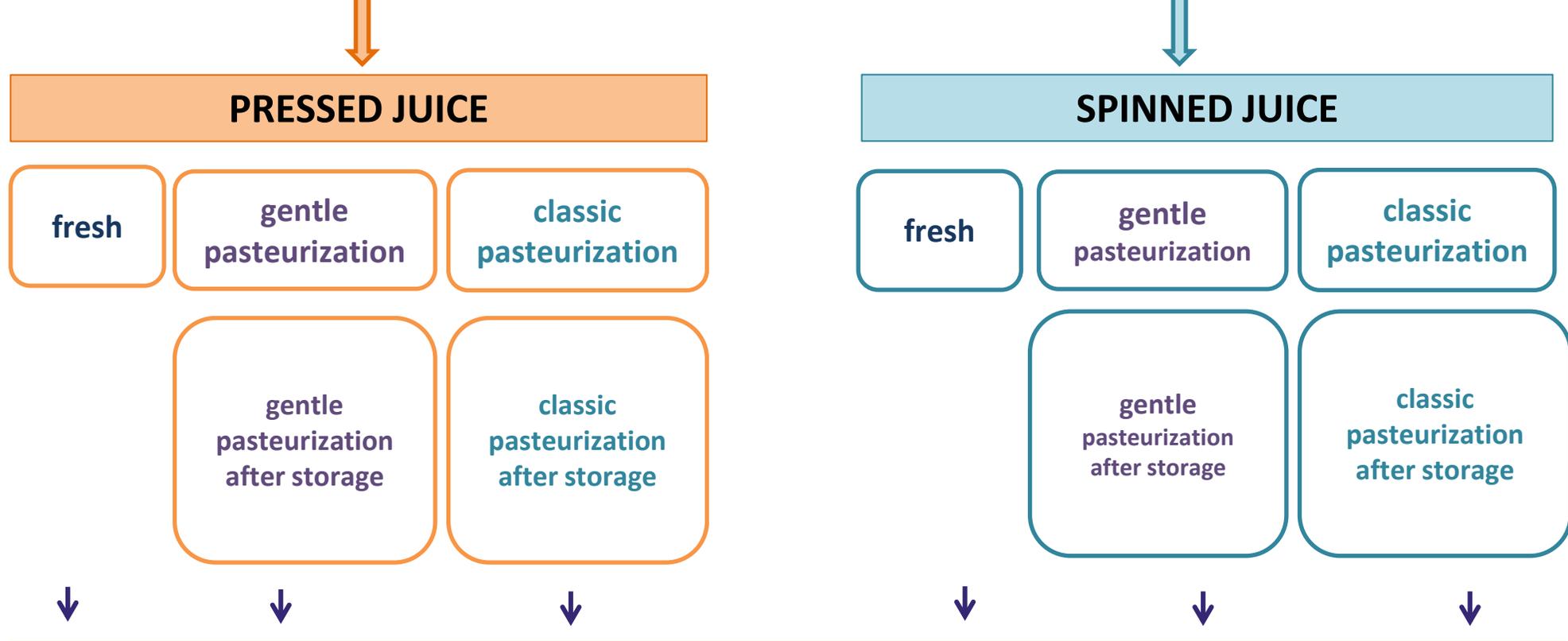
Plan of the presentation:

- 1. Studies assessing the properties of processed fruit products- apple juice and puree- produced by various processing methods**
- 2. The quality parameters and indicators of apple juice**
- 3. Alternatives to conventional treatment for juice processing methods**
- 4. Analyse of on-packaging information on organic and conventional processed products (milk, apple juice, tomato puree)**

1. Studies assessing the properties of processed fruit products- apple juice and puree- produced by various processing methods



Apples of analyzed varieties



Apple juice nutrition value analysis
 Juice chemical composition analyses: dry matter, sugars, organic acids, vitamin C, phenolic acids, flavonoids (anthocyanins, flavanols, flavonols), proanthocyanidins, carotenoids, chlorophylls, antioxidant activity, pesticide residues

Apple juice sensory analysis
 Taste, color, odor (aroma), clarity, overall quality

Cooperation with Carine Le-Bourvellec and Sylvie Bureau (INRAE)



APPLES for puree production season 2019 i season 2020

variety 1
moderately early

Szampion

variety 3
Late

Pinova

AN INNOVATIVE
PROCESSING USING
MICROWAVES AND
VAPOUR.

A CONVENTIONAL
PROCESSING (ROBOQBO)
UNDER VACCUM AND
WITH OXYGEN WITHOUT
ADDITIVE

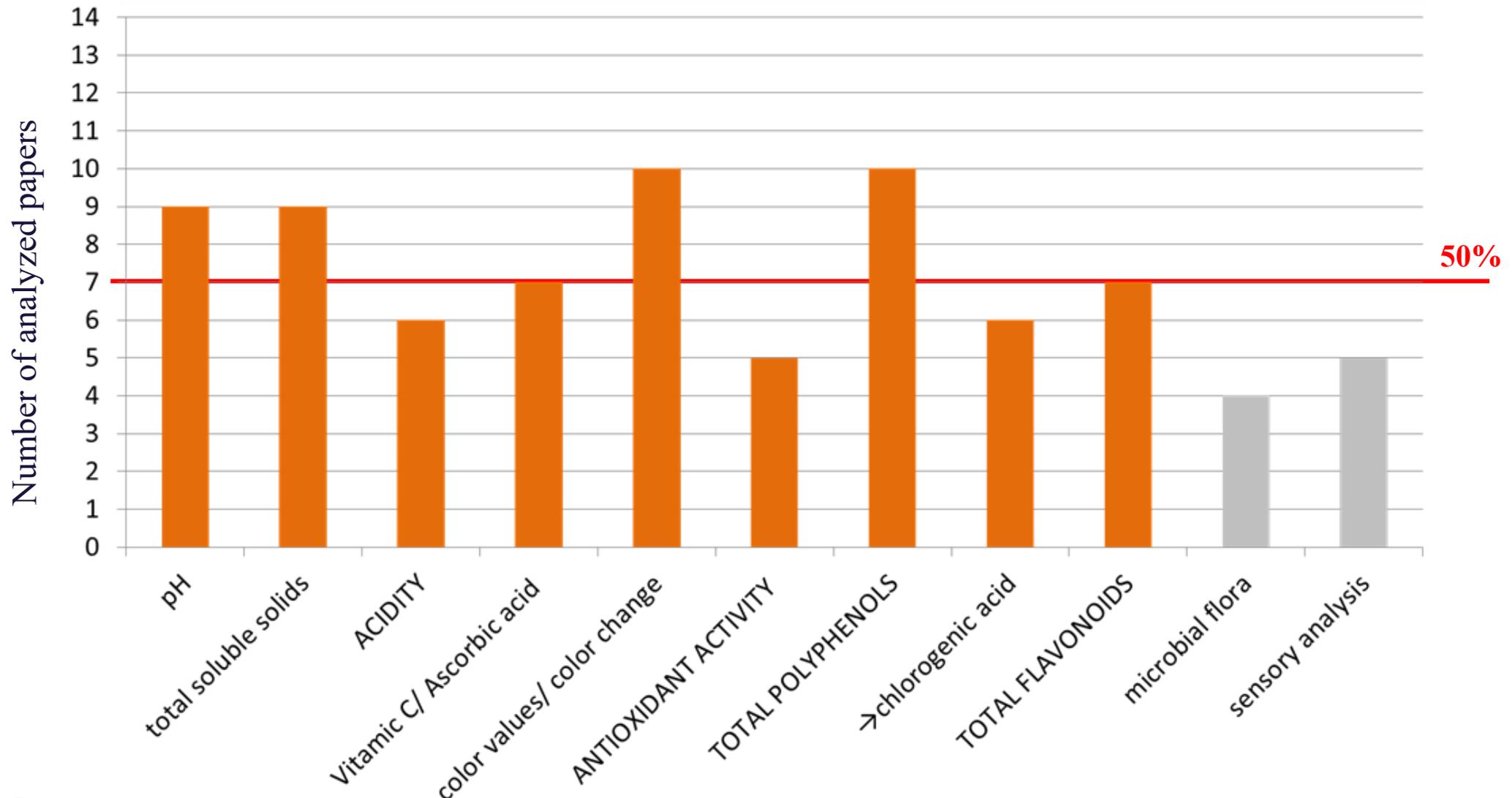
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the characterizations planned to do before and after processing are as follows:

- NIR and MIR
- texture (fruits) and rheology (purees)
- sugars, organic acids, polyphenols (natives and oxidized), volatile compounds, ascorbic acid (native and degradation products)

2. Analyse of quality parameters and indicators of apple juice (most frequently analyzed quality indicators)



3. Alternatives to conventional treatment for processing of apple juices

The results of 20 scientific articles on the quality of apple juices processed by various methods were collected, among others:

THERMOSONICATION

**HIGH PRESSURE
PROCESSING**

OZONE PROCESSING

ULTRA-SONICATION

**PULSED ELECTRIC
FIELDS (PEF)**

UV IRRADIATION

Some conclusions from the analyzed studies:

Thermosonication may be employed as food processing technique where retention of bioactive components have been achieved along with safety and quality attributes.

UHPH-treated apple juice was microbiologically stable at any storage temperature for up to 60 days. Acceptable commercial shelf-life was obtained when the juice was stored at room temperature. However, a decrease in their quality parameters was observed.

Processors should consider the adverse effects of ozone processing on quality of apple juices and further studies are advised to optimize the ozone processing for remaining the phenols and organic acids in apple juices.

Sonication treatment could improve the quality of apple juice. It may successfully be employed for the processing of apple juice with improved quality and safety from consumer's health point of view.

UV treatment with low energy dosages could represent a valid alternative to thermal processing to eliminate pathogenic microorganisms while maintaining quality in reconstituted apple juice.

Combined PEF and mild heat can be successfully applied for the pasteurization of a novel cloudy red apple juice without significantly affecting important juice properties such as pH, acidity, conductivity, and particle size.

4. Analyse of on-packaging information on organic and conventional processed products (milk, apple juice, tomato puree)

author of the study: Lisa Borghoff



FH MÜNSTER

CATEGORY
Product Name and Brand
Shop Name and Type
Labels
Information on raw material (product characteristics, e.g. fat content)
Information on processing method: heat treatment (pasteurization, ultra high temperature...)
Information on processing method: other treatment (homogenization, microfiltration...)
Informations about positive/negative associated ingredients (source of Calcium, protein, the salt content due to the presence of naturally occurring sodium)
Added value of the product
Instructions for use





SEPTEMBER 21st TO 27th, 2020 IN RENNES
AT THE COUVENT DES JACOBINS • RENNES MÉTROPOLE CONFERENCE CENTRE
www.owc.ifoam.bio/2020

OWC 2020 Paper Submission - Science Forum

Topic 2 - Product and process quality in Organic Agriculture: methods and challenges

OWC2020-SCI-1061

INFORMATION ON ORGANIC MILK PACKAGING IN COUNTRIES WITH DIFFERENT LEVEL OF ORGANIC MARKET MATURITY – A COMPARISON BETWEEN GERMANY, THE NETHERLANDS, ITALY AND POLAND

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Type of voluntary labels on organic milk packages in Germany, The Netherlands, Italy and Poland.

■ National ■ International

