Bojan STIPEŠEVIĆ[1], Zlatko PUŠKADIJA[1], Marin KOVAČIĆ[1], Bojana BROZOVIĆ[1], Anamarija BANAJ[1], Đuro BANAJ[1], Davor KRALIK[1], Anto MIJIĆ[2], Branimir ŠIMIĆ[2], Luka ANDRIĆ[2], Dominik MIKOLČEVIĆ[3]

[1]Faculty of Agrobiotechnical Sciences Osijek, Ulica Vladimira Preloga 1, Osijek, Croatia
[2]Agricultural Institute Osijek, Južno predgrađe 17, Osijek, Croatia
[3]KWS sjeme d.o.o., Vukovarska cesta 31, Osijek, Croatia

Contact: bojans@fazos.hr

SafeAgroBee

„Pollination service impact on sunflower's yield components, grain yield and oil content"

PRIMA Project „SafeAgroBee" investigates the possibilities of adaptation and measures of resistance to the effects of climate change and other factors that negatively affect the sustainability and elasticity of the agricultural ecosystem in the Mediterranean countries

„SafeAgroBee" carried out by a consortium of 13 institutions from 8 countries, with an emphasis on beekeeping and pollination using bees as important factors in food security, biodiversity and well-being man and the environment.

Experimental set-up:
5 sites in Northeastern Croatia in year 2022.
Crop: sunflower (5 plants x 5 places per site)
Treatments:
CT) open pollination with free access of pollinators to flowers;
TI) insect pollination has been prevented by net caps during whole flowering period;
HP) only hand pollination has been conducted, whereas net caps disabled insects from pollination,
HO) hand pollination and open pollination were conducted, and
SE) net caps were removed from sunflowers during 10 minutes period twice during flowering stage, and pollinators were recorded during visits
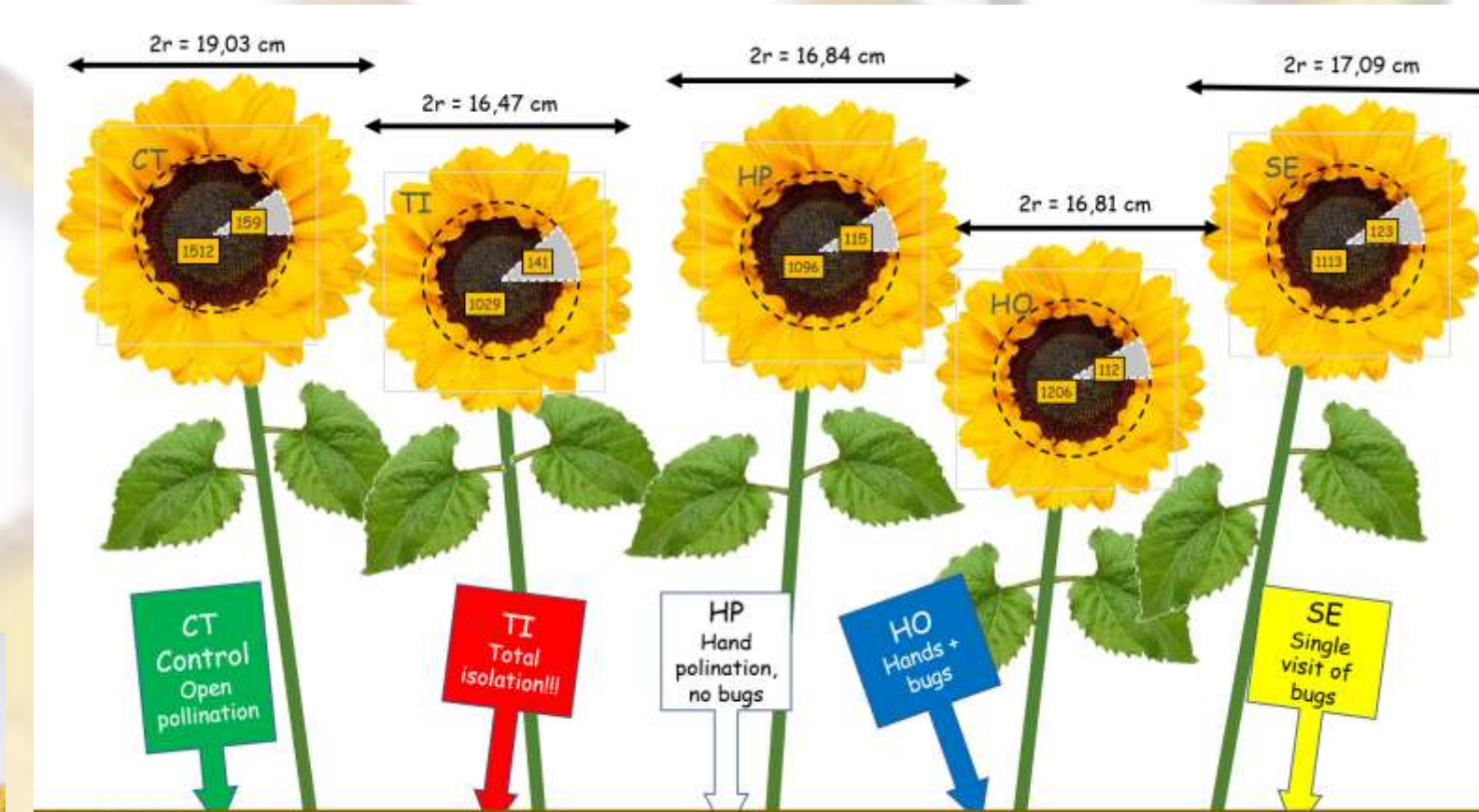
Investigating the importance of pollinator services and adaptation to climate change for major crops and fruits
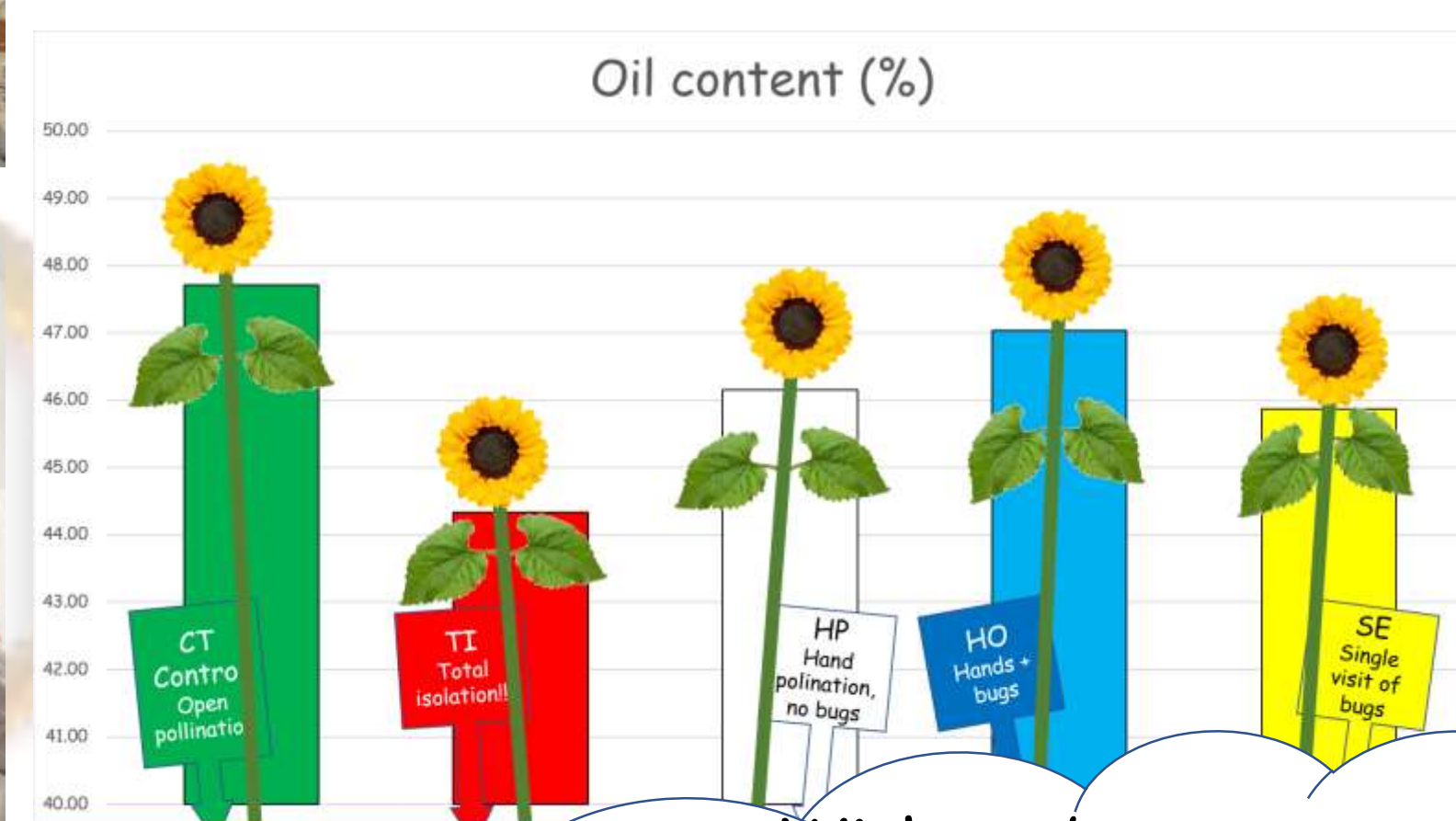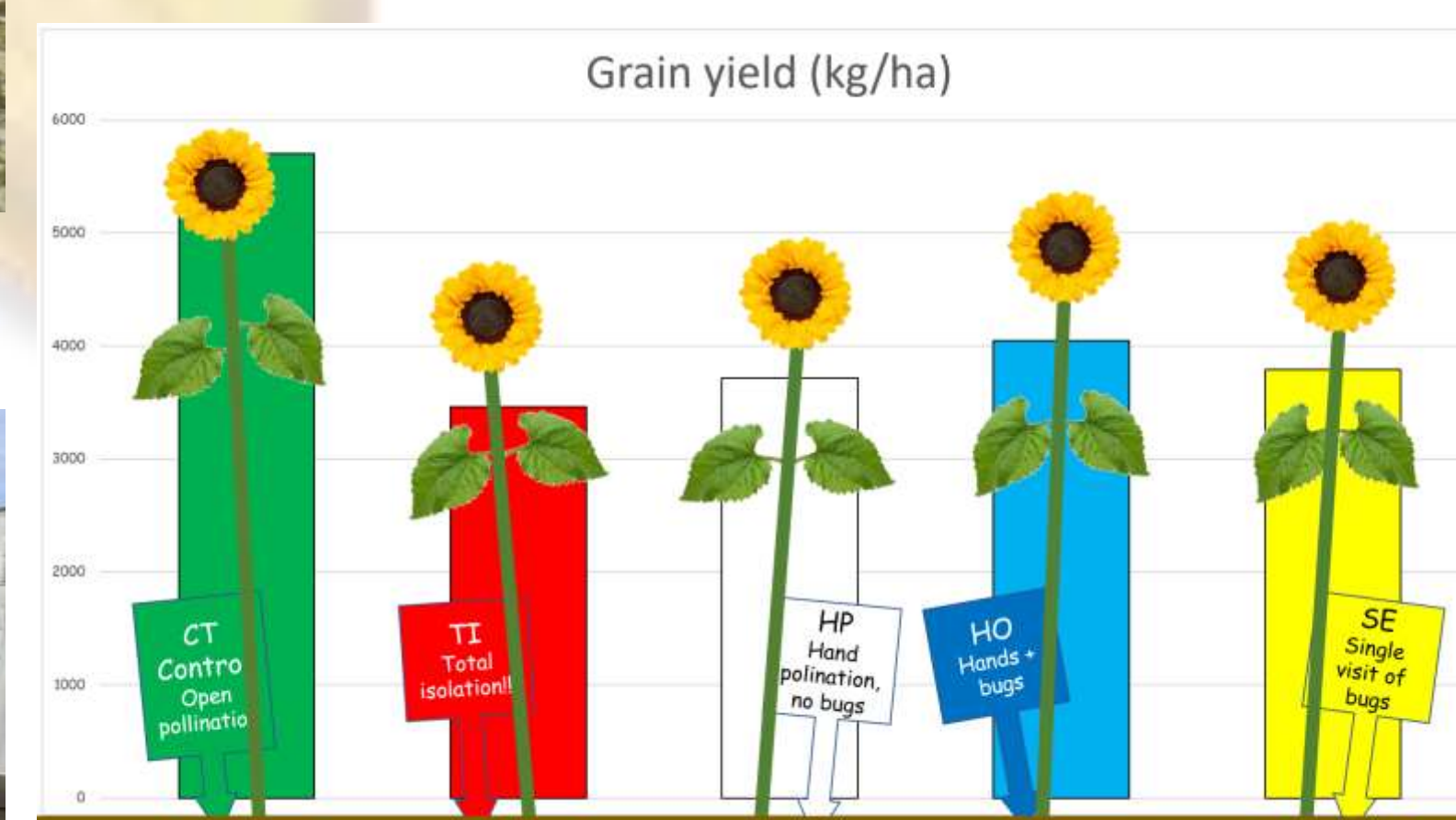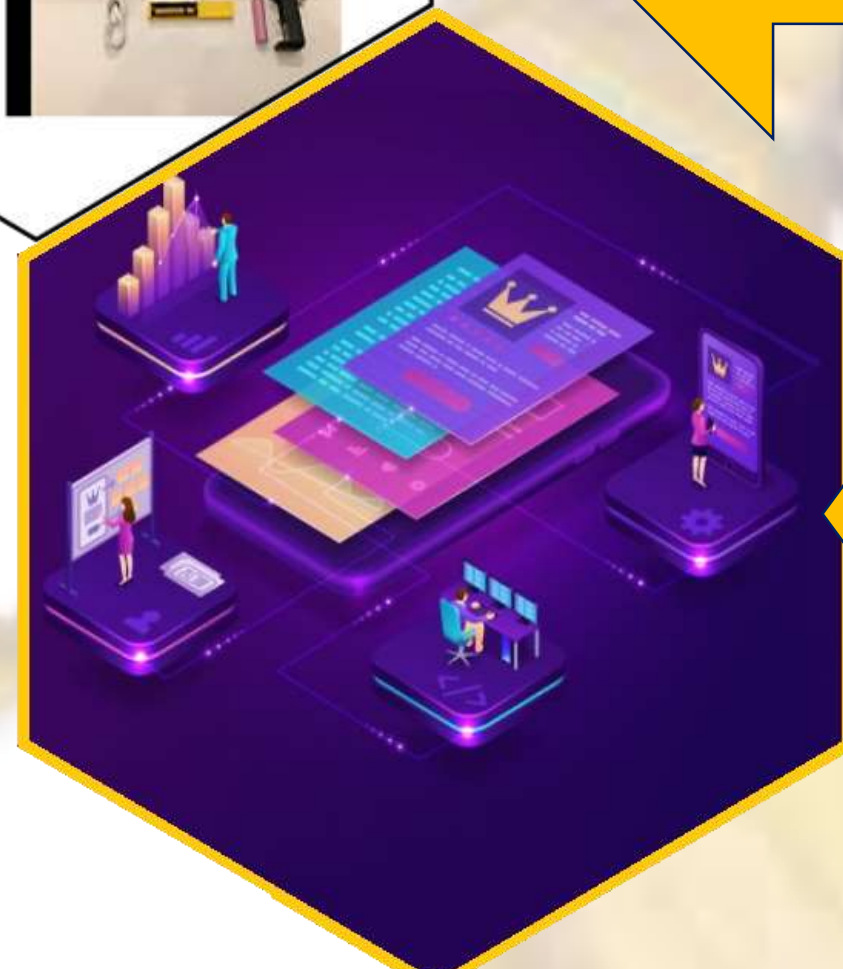
Reduction of losses of bee colonies through the breeding program and monitoring of bee diseases

Development of equipment and IT-solutions for Smart Beekeeping (digital scales, sensors in hive)

Development of a model for predicting the success of pollination, honey production and the sustainability of beekeeping

2r = 19,03 cm 2r = 16,47 cm 2r = 16,84 cm 2r = 16,81 cm 2r = 17,09 cm

CT Control Open pollination
TI Total isolation!!
HP Hand pollination, no bugs
HO Hands + bugs
SE Single visit of bugs

Grain yield (kg/ha)

Oil content (%)

Without bees:
18% smaller head diameter,
32% less full grains,
35-39% smaller grain mass,
3-7% less oil content,
35-39% less yield.

PRIMA
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