



### “DOMINO” – project partner FGI, BG

“Dynamic sod mulching and use of recycled amendments to increase biodiversity, resilience and sustainability of intensive organic apple orchards and vineyards”

Vasiliy Dzhuvinov, Irina Staneva, Stefan Gandev, Desislava Stefanova, Hristina Kutinkova, Georgi Kornov, Margarita Stoeva  
Fruit Growing Institute (FGI), Plovdiv, Bulgaria

The trial is in a private farm at Plovdiv region, close to the Perushtitsa town, situated 21 km South West from Plovdiv, in Thracian plate. Coordinates: 42°03' N and 24°32' E. 184 m on the sea level.

### Climatic condition of the region

The mean annual temperature is 12.3° C. Absolute maximum +45 °C ( July 5, 2000) and Absolute minimum –31.5 °C ( January 21, 1942). Precipitation – 540 mm; maximum – during May-June (69 mm) and minimum in August (31 mm) Relative humidity – 73% ( maximum in December – 86% and minimum in August - 62%).



### Experimental apple orchard

The orchard was planted on 3.3 ha in 2016 on sandy luvisol with Golden Delicious B, Fuji and Granny Smith/M26 with spacing 3.50 x 1.25 m and spindle training system. Irrigation – drip system. The experimental plot is 0.5 ha. The orchard is covered with black anti - hail net with 7x4mm mesh size.

### Intercropping and fertilization

In the tree rows are used the leguminous species - white clover (*Trifolium repens* L.) and early forage pea (*Pisum sativum* L.). For fertilization - liquid “Lumbreco”, origin from red Californian worms and “Keratin”(Horngrit received from Germany) according to BBCH stage.

### Soil analysis and parameters measured

The soil samples - 0-15 and 15-30 cm depth for macro and micronutrients-in the beginning and in the end of the season. Data collection: plant density and biomass production from white clover and pea, yield/per tree/ha/kg/cm<sup>2</sup> and fruit quality. For measurement will be used 3 trees in 8 replicates per variant and cultivar.

### Prediction of optimal picking dates

- ✓ Background color with the color chart
- ✓ Firmness – Penetrometer
- ✓ TSC - Brix
- ✓ Starch components – scale 1-10 (Eurofru, Ctifl, France)



### ACKNOWLEDGEMENTS:

The present study was supported by the Grant № KP – 06 - DO 02/1/2018 from the Bulgarian National Scientific Fund.

<http://www.domino-coreorganic.eu/>