

TAKING
COOPERATION
FORWARD

 TELCO CITYCIRCLE / 30th March 2021

 **Pilot - BIOECONOMY IN VARAŽDIN**

 CE1515/ CITYCIRCLE/DAN/Nikolina Žigmund

2. PROJECT IMPLEMENTATION

2.3. SEPARATION, COLLECTION AND TREATMENT OF WASTE

Milestones/outputs:

Once successfully implemented, the pilot project will represent a valuable blueprint for policymakers who want to stimulate the progression from a linear towards circular economy.

RESULTS

- ✔ Separate waste collection system in *Gradska Tržnica d.o.o.* established with monitoring and monthly reporting of separately collected waste quantities;
- ✔ Education and educational materials about proper waste sorting provided;
- ✔ Production of quality digestate in the biogas plant *OPG (Family farm) Vrčhek*;
- ✔ Closing the loop by using the obtained digestate as a fertilizer on the hazelnut farm owned by the *Gradska Tržnica d.o.o.*



2. PROJECT IMPLEMENTATION

2.3. SEPARATION, COLLECTION AND TREATMENT OF WASTE

MONITORING RESULTS

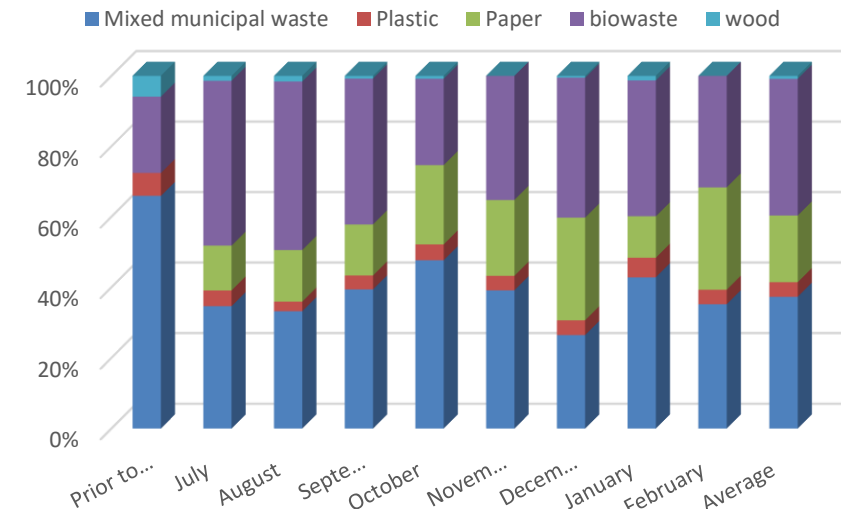
COMPARISON OF DATA ON WASTE QUANTITIES PRIOR AND DURING THE IMPLEMENTATION OF THE PILOT PROJECT

	Prior to implementation of pilot project	During the implementation of the pilot project (7/2020-2/2021)
Mixed municipal waste	65,9%	37,3%
Biowaste	21,7%	38,7%

- ✓ Reduction of mixed municipal waste quantity up to 30% on average;
- ✓ Increase of separately collected biowaste quantities by 15% on average;
- ✓ Separate collection system reached a certain level - improvement necessary and possible?
- ✓ Additional measures will be taken for further improvement of separate collection.

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
MIXED MUNICIPAL WASTE				X								X							X								X					
STYROFOAM																																
PLASTIC				X	X			X		X								X				X			X							
PLASTIC BOXES																	X															
WOOD																																
PAPER	X										X											X										
BIOWASTE					X							X							X								X					

PLEASE ENTER X IN THE CORRESPONDED FIELD ON THE DAY WHEN THE COLLECTION OF A CERTAIN WASTE IS REPORTED



2. PROJECT IMPLEMENTATION

2.4. SOIL AND DIGESTATE SAMPLING AND ANALYSIS AND APPLICATION OF DIGESTATE ON FARMLAND

Milestones/outputs: Sampling of soil from hazelnut farm and digestate from the biogas plant and their analysis are taken.

RESULT

- ✓ Performed soil analysis;
- ✓ Performed analysis of digestate from OPG Vrčec
- ✓ New moment arrived as results of Citycircle cooperation:
- ✓ Performed ash analysis after wood chips treatment from OPG Vrčec - which can be used as soil calcification improver

RECOMMENDATIONS FOR DIGESTATE AND SOIL CALCIZATION

- ✓ Recommendation by the National agencies from Ministry of Agriculture for optimal use of digestate in the next two years for a 5 year old hazelnut farm - by the dynamics and quantities .
- ✓ According to the soil analysis and the recommendation, it can be seen that it is acidic soil.
- ✓ According to the recommendations, higher needs for phosphorus and potassium should be replaced and acidity should be corrected.



2. PROJECT IMPLEMENTATION

2.4. SOIL AND DIGESTATE SAMPLING AND ANALYSIS AND APPLICATION OF DIGESTATE ON FARMLAND



VISIT TO THE HAZELNUT FARM HELD ON OCTOBER 2020.

- ✓ Preparation for the application of digestate on hazelnut farm.



APPLICATION OF DIGESTATE ON HAZELNUT PLANTATIONS HELD ON NOVEMBER 11, 2020 BY „OPG VRČEK”.

- ✓ First soil fertilization was implemented according to the fertilization plan and dynamics issued by the National Agencies Ministry of Agriculture.
- ✓ Second fertilization underway.



THANK YOU FOR YOUR ATTENTION



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