



Free Webinar: Food waste collections in the UK
Thu, May 14, 2020 3:00 PM - 4:00 PM CEST

Food waste collection and recycling in Italy



MR- 5,2020

Dr. Marco Ricci
Senior Expert – CIC_Consorzio Italiano Compostatori

www.compost.it

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About myself



Altereko sas – consulting for circular economy

CEO

www.altereko.it



CIC Italian Composting and Biogas Association

Senior Expert

www.compost.it



ISWA International Solid Waste Association

Chair of the Working Group on Biological Treatment of Waste

www.iswa.org



ECN European Compost Network

Chair of the Task Group on Compostable Bioplastics

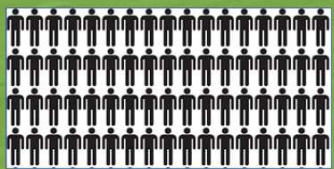
www.compostnetwork.info



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About CIC Italian Composting and Biogas Association

125 ORDINARY AND ASSOCIATE MEMBERS



Our members are public and private companies designing or managing composting and/or anaerobic digestion plants, waste-management companies, R&D-companies, machinery and equipment producers, laboratories, local authorities

2 GENERAL ASSOCIATION MEMBERS



UTILITALIA

FISE ASSOAMBIENTE



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CIC: what we do

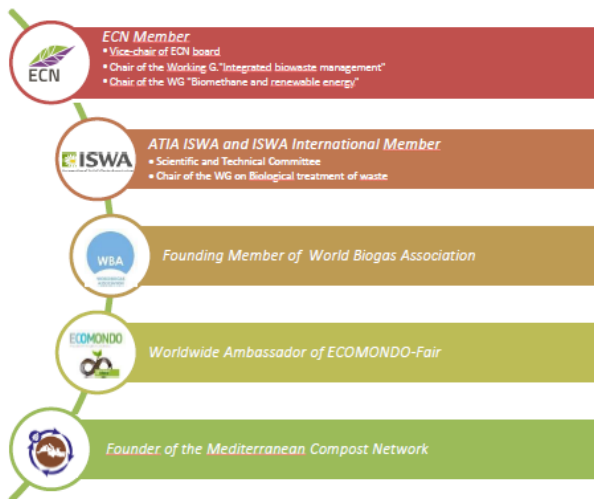
NATIONAL CIC ACTIVITIES

-  *Agreements with local Authorities and trade Associations*
-  *National and EU legislative proposals*
-  *Promotion of high-quality organic Fertilizer production also by means of the CIC Quality Label*
-  *Technical and legislative assistance to recycling-plants (CIC's members only)*
-  *Organization of regular training courses*



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CIC: what we do



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CIC's national initiatives in Italy



CIC started in 2003 to developed a system **and Label for Compost Quality**, so to certify the quality of Compost produced by its members.



CIC started in 2006 a **certification scheme on biodegradable materials** and - in particular - on compostable products, named "**compostabile CIC**" ..



CIC has developed and is now implementing a Biomethane Label "**Biometano Fertile**" to assess the quality of Biomethane produced in composting and anaerobic digestion plants.



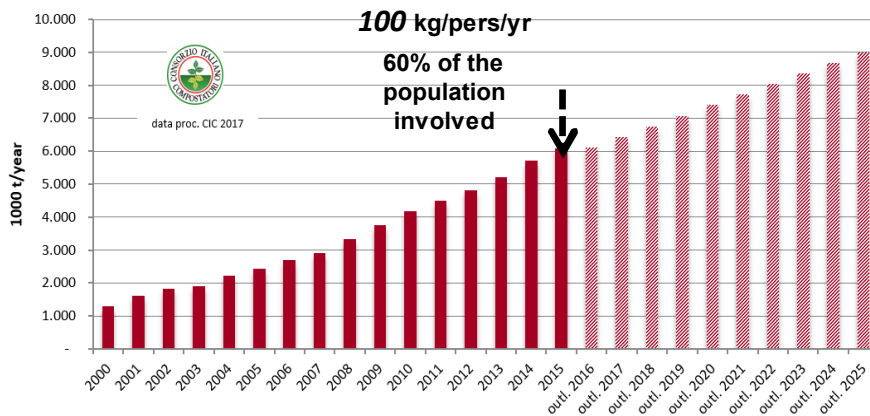
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KEY DATA: ITALY'S RECYCLING SECTOR FOR BIOWASTE

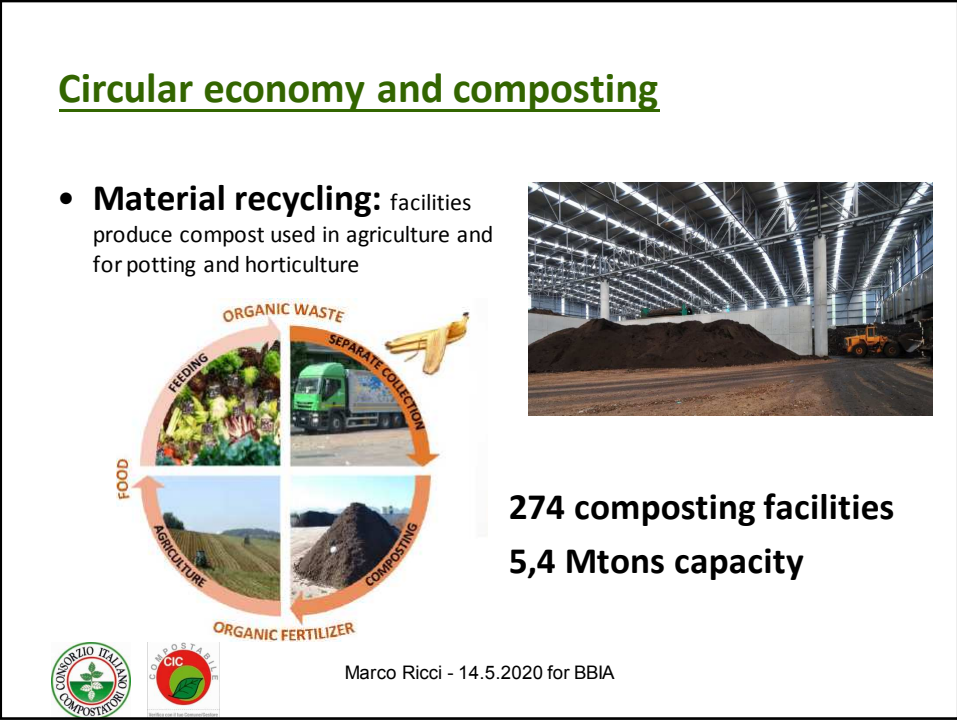


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A focus on Italy: a successful management begins from separate collection



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Circular economy and Biogas

- **Energy & Material recovery:**

facilities produce biogas and compost; gas used for electricity and heat production

dei rifiuti organici



52 biogas facilities

3,3 Mtons capacity



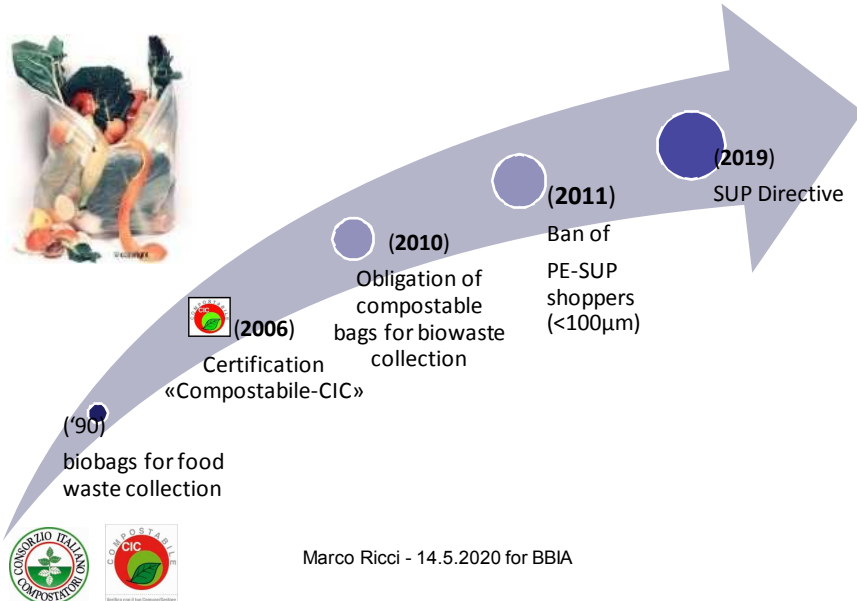
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KEY LEGISLATION ABOUT BIOWASTE AND BIOPLASTICS IN IT



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Compostable plastics in Italy



FOODWASTE COLLECTION AND COMPOSTABLE PLASTICS



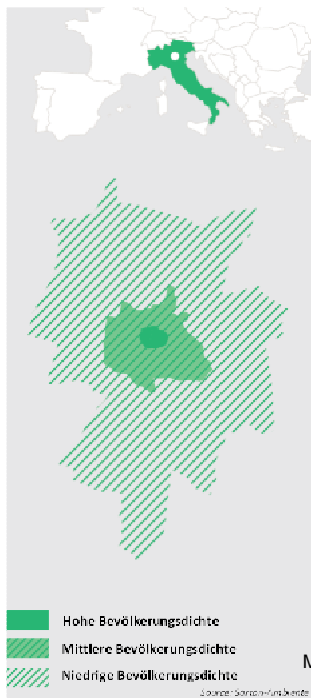
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How can we achieve significant collection rates of food waste in Cities and High-Density areas?



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The City of Parma



- 190.000 Population
- 108.000 families
- 15% Foreigners
- University (22.500 students)

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Collection of food waste in Parma



Single households

- 23-30 Liter
- Easy to handle
- Manual emptying
- Stockable

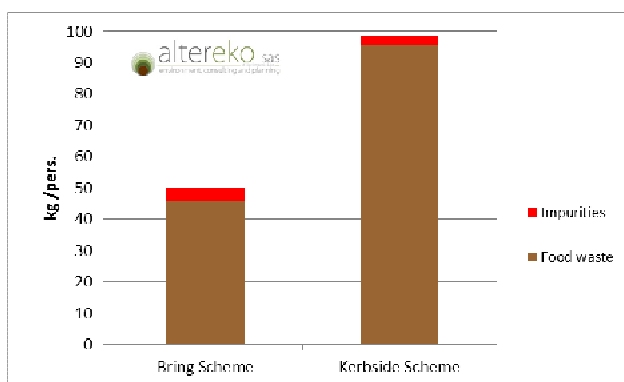
Apartments, Ho.Re.Ca

- 120/240 Liter
- Standard wheel bin
- Mechanical tipping



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Separate collection of foodwaste in Parma



- Amounts increased by +100% (2011/2015)
- Impurities reduced from 8,3%f.m. (bring-s.) to 3,3%f.m. (kerb-s.)



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Do households separate food waste regularly?



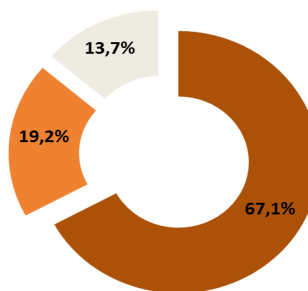
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Milan: diversion of food waste from residual waste



City of Milan (year 2014)

- 86% of food waste ends up in separate collection
- 14% escapes into residual waste collection
- 78 kg out of 100kg are collected at households



Updated Quantities (2018)

- 150'000 tpa or
- 108 kg pers/yr

■ FW from households
■ FW from Ho.Re.C
■ inside residual waste

Source: AMSA 2014, 2019

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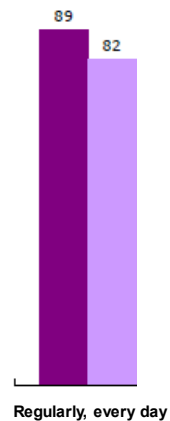


Milan: customer satisfaction and participation



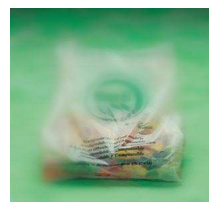
Source: ISPO investigation 800 inhabitants

Participation in food waste collection?



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Kitchen-caddies & compostable bags

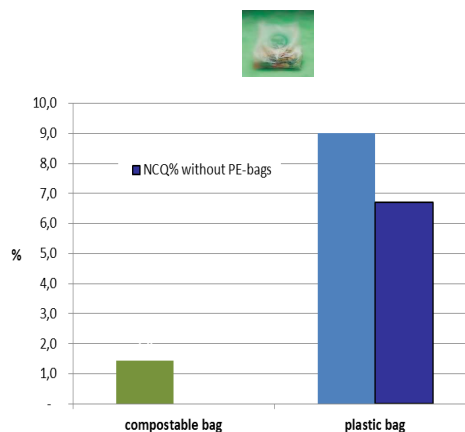


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The use of compostable bags (IT survey, 2011)

Separate collection of food waste made easy for households

- Bins need fewer rinsing and cleaning;
- Collection vehicles stay cleaner and have lower odors emissions
- Households become aware of quality issues; non-compostables are reduced from 9% to 2%
- Compostable (certified) biobags are compatible with industrial composting and are regularly accepted at Italian Composting and Biogas plants



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What happens in a city with biowaste collection, if households receive a kitchen caddy & set of compostable bioplastic bags



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Participation of Households (Vellmar\D)



- Biowaste collection already in place
- Diversion rates to be improved (60% of biowaste collected with residual waste)
- Blocks and flats are critical in participation
- Quality of biowaste at high-rise building is concerning (7,1% rejects)

→ Focus on food waste



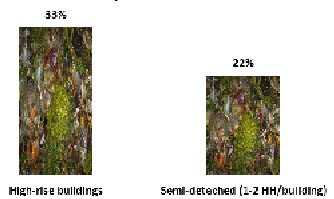
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Participation of Households (Vellmar\D)

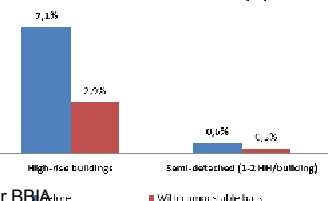


Participation and quantities rise significantly in urban areas if households are provided with the right tools

Food waste capture rate Increase



Contamination of bio-waste (D)



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Compostable liners are not compatible with industrial composting? They end up in compost.....



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RESULTS OF THE CIC-COREPLA NATIONAL SURVEY 2015/2017



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Scope of the Italian survey

- Verify the fate of plastics and bioplastics at composting and AD+C facilities in Italy
- Verify the acceptance of different types of compostable bioplastic-items at composting and AD&C facilities associated to CIC

- **45 weeks of Monitoring**
- **N°15 Composting Plants**
- **N°12 Facilities combining Composting & AD**
- **Facilities authorised for 2.5 Million tpa**

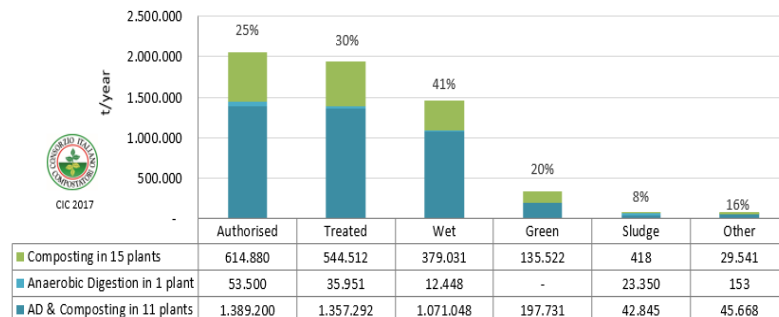


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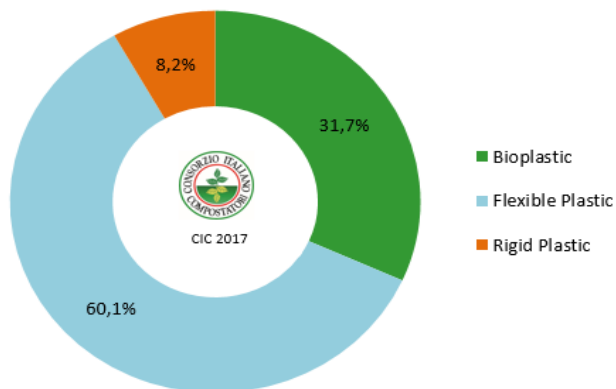
Scope of the survey about bioplastic items

- Verify the fate of plastics and bioplastics at composting and AD+C facilities in Italy
- Verify the acceptance of different types of compostable bioplastic-items at composting and AD&C facilities associated to CIC



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Plastics and bioplastics in the foodwaste fraction (% f.m.)



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About the output (compost) from the recycling process



- **Zero compostable plastics:** at the end of the composting or AD&post-composting process no compostable material could be found in any of the examined samples, i.e. the material was fully degraded
- **Rejects generation:** impurities in food waste do affects recycling efficiency (dragging effect)



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Plastics and Bioplastics in biowaste: nationwide forecasts

	RELATIVE VALUES				ABSOLUTE VALUES		
	BIOPLASTIC (% T.Q.)	Flexible plastic (% L.Q.)	RIGID PLASTIC (% L.Q.)	Foodwaste (t/y)	BIOPLASTIC (t/y)	FLEXIBLE PLASTIC (t/y)	RIGID PLASTIC (t/y)
Composting plants	1,70 %	2,48 %	0,56 %	1.954.491 ¹	33.313	48.508	11.039
AD&E Composting plants	1,32 %	2,76 %	0,30 %	2.103.429 ¹	18.155±3.311 (d.m.)	27.844±4.899 (d.m.)	8.854±1.192 (d.m.)
TOTAL	1,42 %	2,69 %	0,37 %	4.057.920 ¹	27.818	58.099	6.252
					15.161±2.615 (d.m.)	33.349±5.868 (d.m.)	5.014±675 (d.m.)
					57.682	109.137	14.875
TOTAL	1,42 %	2,69 %	0,37 %	4.300.000 ²	31.437±5.422 (d.m.)	62.654±11.023 (d.m.)	11.930±1.607 (d.m.)
					61.123	115.648	15.763
					33.312±5.746 (s.s.)	66.382 ±11.680 (s.s.)	12.642±1.702 (s.s.)

¹ Total food-waste treated in Italy in 2016. Source Rapporto Rifiuti Urbani (Municipal Waste Report) 2017 by ISPRA
² Total food-waste treated in Italy in 2017 (estimation) by CIC



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DICHEPLASTICA6

PLASTICA E BIOPLASTICA - DUE RISORSE DA CONOSCERE

9 ottobre 2017, ore 9.30
 Centro Congressi Fondazione Cariplo
 Via Romagnosi, 8 - Milano

SAVE
 THE
 DATE

Workshop

Il settore del biowaste:
 caratteristiche e opportunità
 per plastiche e bioplastiche
 compostabili



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Conclusions

- **Liners & caddies allow to increase the separate collection of foodwaste** thus generating more feedstock for composting and biogas&composting plants
- **Italy makes use of compostable bioplastic liners for food waste collection** since 25 years; these liners need to be certified according to EN13432 standard
- **standard acceptance for bioplastic bags** and compostable liners at Italian Industrial Composting- and combined Biogas&Composting facilities
- For more complex compostable items such as **rigid packaging** (f.ex. coffee capsules) there is a lower acceptance (but a positive attitude) by the facilities due to the need to upgrade the treatment processes in some facilities;
- CIC developed its own **certification scheme** (in compliance with the UNI-EN13432 standard) for compostable packaging and material so to
 - Reduce the amounts of impurities (i.e. MNC) that is collected together with biowaste and thus affects the quality of compost.
 - Ease the development of packaging items that are functional to increase the separate collection of biowaste
 - Support packaging producers in developing compostable items that are compatible with the current layout of the industrial composting (and biogas) sector



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Verifica con il tuo Comune/Gestore
Locale le modalità di conferimento
e raccolta dei rifiuti

Grazie
Thank you

Marco Ricci

CIC - Consorzio Italiano Compostatori
Technical Office, Milan\Italy

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