



Sustainable packaging sector, 12th International Packaging Trade Fair, Packaging Innovations

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Initially planned for April 2020, the Packaging Innovations Fair was held in a traditional form on September 24-25 at the EXPO XXI premises in Warsaw. Visitors had the opportunity to personally talk with the exhibitors, exchanging their knowledge and experiences. The added value of the Fair was the individual presentations of invited guests and thematic discussion panels. One of them, as part of the special session on the second day of the Fair, was the panel entitled Sustainable packaging management - producer, consumer, education, eco-design.

Its moderator was prof. AGH dr hab and **Joanna Kulczycka** from the *AGH University of Science and Technology* in Kraków. Participants: dr **Anna Brdulak** from the *Wrocław University of Science and Technology*, **Hubert Bukowski** from the *Innovo Institute for Innovation and Responsible Development*, **Kazimierz Borkowski**, Managing Director, *PlasticsEurope Polska*, dr hab. Eng. **Andrzej Wojciechowski** from the *AGH University of Science and Technology* and **Jolanta Okońska-Kubica** from *Synthos* took up important issues of responsibility of both producers and consumers for waste production.

The first speaker was **Kazimierz Borkowski** from *Plastic Europe*. By citing the Round Table Ecodesign of Plastic Packaging, 2018 he referred to the role of eco-design. He pointed to the basic values of the approach. The idea of eco design is based on the responsible sourcing of raw materials and on using them

in the production process to a minimum extent. In the design phase should be taken into account the possibility of multiple use of the packaging, and after its end of use - recycling. Thus, the packaging should be minimalist in its form, made of recyclable materials, without the presence of any hazardous substances. In a further speech, the speaker pointed to the importance of plastics in the welfare of society in areas such as health and food, energy and climate, construction and transport. He emphasized the importance of innovation in plastics as an essential element in meeting the growing expectations of both society and the economy in the nearest future.

During the panel, the role of educational activities for the development of the sustainable packaging industry was also emphasized, implemented also in PackAlliance: European Training Alliance for Innovation and Collaboration for the Packaging of the Future. PackAlliance is a knowledge-exchange alliance bringing together academic and industrial partners from the four EU countries (Spain, Poland, Finland and Italy). It was created to support cooperation between academia and industry in the field of innovation and competence building for innovative and sustainable solutions in the packaging industry, a key element in the transformation towards a circular economy. In her statement, Professor **Kulczycka** stressed that "today, the development of transferable skills is one of the most important elements of education, which will ensure a better quality of life and the development of society. Thanks to projects such as PackAlliance, we are able to achieve this at local, regional, national and international levels. "

Dr. **Brdulak**, co-editor of the book *Happy City - How to Plan and Create the Best Livable Area for the People*, concerning the quality of life in smart cities, indicated that it is necessary to develop a coherent strategy in the approach to educational activities. Professor **Wojciechowski** agreed with this. He emphasized the importance of increasing the number of hours of classes for students in the field of eco-design and recovery and recycling processes. This process is already being carried out at AGH University.

Further discussion turned to issues related to the mutual producer-consumer relationship. **Jolanta Okońska-Kubica** from *Synthos* expressed the hope that extended producer responsibility will contribute to better availability of high-quality secondary raw material. Dr. Brdulak noted that both producers and consumers should realize that they are on the same side.

The statement was completed by **Hubert Bukowski**, who mentioned that the role of NGO and INNOVO is, among others supporting entrepreneurs. For this purpose, a report was prepared entitled *Hierarchy of waste treatment methods with an outline of possible regulatory changes*. A guide for entrepreneurs on waste handling.

Prof. Kulczycka concluded that a holistic approach to the issue of packaging waste management, taking into account the results of the Life Cycle Assessment, should begin with education and eco-design so that the goal is to achieve a waste-free economy by using organizational or technological changes in accordance with the assumptions of the circular economy model.

At the end, the speakers agreed that it is extremely important that the packaging meets a number of requirements regarding quality, safety, usability, ergonomics and visual appeal. In practice, this applies to the broad concept of eco-design, based on the development of packaging designs attractive to the consumer on the one hand, and valuable from the recycler's point of view on the other.

The concept of ecodesign is related to the development of good practices, which recommend avoiding or encouraging the use of specific solutions. According to the overriding principle of the concept (refuse), packaging should be avoided in the first place. If this is not possible, then by adopting another reduction rule, one must strive to produce only the necessary packaging, with an extended life cycle. The third principle, reuse, is that packaging should be designed so that it can be reused in its original form or after necessary repairs have been made. At the end of the discussion, all panelists agreed that proper education and cooperation of both sides, the producer and consumer, is necessary. All products have an environmental impact during their life cycle. More than 80% of the environmental impact comes from decisions already made at the product design stage. So the most important thing is not to generate waste.