Research leads to improved bioplastic films

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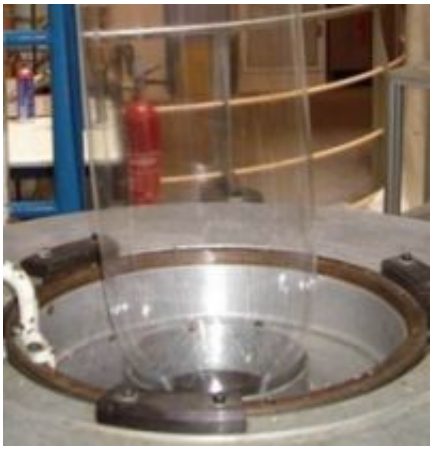

Packaging extends the life of food products. It also generates extra waste. Researchers at Wageningen UR Food & Biobased Research are working with the branch organization NRK, affiliated companies and government to improve the technical properties of biofoil. “Demand for renewable materials is rising”, says foil producer Eddy Hilbrink from AFP. “Bioplastics is the way forward.”

Last August saw the publication of a Wageningen UR report entitled ‘Bioplastic applications’ (only in Dutch). The research was commissioned by Agentschap NL and focuses on PLA foil, a renewable plastic made from polylactic acid (PLA). Demand for renewable materials is currently on the increase, because they require less energy and generate lower CO2 emissions. But PLA film also has

disadvantages: it tears more easily and crunches during production and use. This piece of research investigated and helped to improve the properties of single and multi-layered PLA films.

The latest generation of PLA foil is transparent and glossy, strong and pliable, and it breathes and shrinks well. Single-layer PLA foils are suitable for applications requiring compostability (in accordance with the EN13432 norm); additives can increase the compostability of multi-layered films. The use of PLA granules saves fossil raw materials and energy, as does the fact that the stiffness of PLA foil allows it to be very thin.

The research was prompted by the long-term energy efficiency agreements (MJA3 and MEE) between government and the business sector, which aim to improve energy efficiency in companies by two percent per year. Erik de Ruijter from the branch organization NRK, which is coordinating the MJA project, expects that the research findings will give film manufactures a few pointers to help them develop and produce PLA foils. “There are not many PLA manufacturers in the present market, and so bioplastics are relatively expensive in comparison to traditional plastics. But the stretch and barrier properties mean that this foil is already highly suitable for certain applications, such as stretch foil on vegetables and fruit. In future, interest will grow and prices will fall, ultimately making PLA film an attractive commercial prospect.'

Provided by Wageningen University