

More sustainable, resilient, and competitive food systems through the development of intermediate food value chains



PRACTICE ABSTRACT No: 8

Air filter solutions linked to required level of micro-organisms in the air

The risk of airborne contamination of food is significant in the food and beverage industry, and air filtration among others can help to overcome this problem. Air filtration has a significant impact on the quality of indoor air by reducing the concentration of particulate matter and therefore micro-organisms responsible for contaminations.

The new ISO 16890 standard, which replaces EN779:2012, establishes a classification system according to the efficiency on PM10, PM2.5 and PM1 (i.e. particulate matter with a diameter less than 10 μm , 2.5 μm , 1 μm respectively). The minimum required filters in a certain production environment can be estimated based on the 'outdoor air quality' (ODA) and the 'supply air quality' (SUP) category. By determining both, the minimum filter class and the corresponding minimum efficiency can be found. For example, in Belgium, the outdoor air (ODA) is category 2 (i.e. outdoor air with a high concentration of particulate matter). For high-risk food and beverage production, which is in the supply air (SUP) 2 category, the cumulated minimum filter efficiency in Belgium should therefore be 70% for particles with a diameter less than 1 μm . Taking into account this new ISO standard in the food industry is an opportunity to reduce the risk of airborne contamination.

When clear target values for microbial air quality are known (See P.A. 2), the air filter classification system, according to ISO 16890, can be linked to a defined acceptable microbial contamination in the air. Knowing this, users will in the future be able to choose their filters more precisely according to their unique requirements in the environment and/or in the packaging machine.

Authors

Pieter-Jan Loveniers,
Imca Sampers,
Harald Saelens &
Thierry Bénézech

Affiliation

UGent, Scaldopack & INRAE

Contact

Pieterjan.Loveniers@Ugent.be

End Users

consumer,
farmer & cooperative,
industry & retail,
policy maker,
technology provider,

Country



FAIRCHAIN project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101000723.

More sustainable, resilient, and competitive food systems through the development of intermediate food value chains



PRACTICE ABSTRACT No: 8

Additional information/Links



 [FairchainEU](#)
 [FAIRCHAIN EU](#)
 www.fairchain-h2020.eu

All Practice Abstracts prepared by FAIRCHAIN can be found [here!](#)

ABOUT FAIRCHAIN

The FAIRCHAIN project launched in 2020 and coordinated by INRAE, is developing intermediate food value chains in the fruits and vegetable and dairy sectors. Through technological, organizational and social innovations and by developing business models FAIRCHAIN will enable small and mid-size stakeholders to scale up to supply fresh, sustainable and high-quality food products to consumers at a regional level.

FAIRCHAIN PARTNERS



DISCLAIMER

This Practice abstract reflects only the author's view. The FAIRCHAIN project is not responsible for any use that might be made of the information it contains. Licenced under: [CC BY 4.0 DEED](#)



FAIRCHAIN project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101000723.