



**From the farmer's fields to your fork: Ground-breaking sensing technology ensures that your food is free from mycotoxins, fungi, pesticides and antibiotics.**

Scientists from eight European countries are collaborating to create two new devices to ensure that your food is free from contaminations detrimental to your health. One of the devices will be handheld and allow daily monitoring from the farm to the fork, the other device will be portable and for reference analysis, developed for use at every step in the food production chain.

### **Food Safety Challenge**

In the EU, regulations and testing ensure that food contaminations, such as mycotoxins, fungi, pesticides, and antibiotics, are below critical levels. Today, detecting contaminations at the required low levels in the parts per billion (ppb) range requires samples to be sent to a laboratory for testing. To avoid the high costs involved, farmers, importers, and manufacturers tend to test large batches, and sometimes only after mixing produce from different origin. If a contamination is detected, the whole batch will be destroyed, resulting in financial losses and food waste. The food sector is therefore in urgent need for devices that would enable cost-effective testing in smaller batches throughout the food value chains.

### **Farm to Fork**

However, on-site measurement of chemical and microbial contaminations at the required detection levels in the ppb range is posing a significant technical challenge. A direct measurement of contaminants at these concentrations in a food matrix is not possible by any photonics principle. PHOTONFOOD therefore aims to overcome this barrier by developing an integrated solution that combines innovations in smart paper-based sample treatment, mid-infrared (MIR) sensing and advanced data analysis. Transforming MIR sensing from existing lab solutions into a portable solution, PHOTONFOOD develops novel infrared light sources, specifically interband cascade light emitting diode (IC-LED), and interband and quantum cascade lasers (ICL/QCL). The light sources will be combined with sophisticated waveguide technology and 3D-paper microfluidics.

### **PHOTONFOOD**

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### **More about the project**

Visit the PHOTONFOOD web site, [photonfood.eu](http://photonfood.eu) for news, updates and more information.



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