



### **Case Study: Patulin Measurement And Degradation (no. 20R8)**

The customers based in India grow orchard fruit in the Himalayas for the retail market and some with a view to fruit processing. They needed to understand the extent of mycotoxin contamination in apples and pears, especially juice and whether this was a regulatory issue for them. Patulin is the main mycotoxin and causes a variety of unwanted effects in cells.

#### **Conclusion:**

Consultation and a report was provided to the customers as part of a collaboration with Indian based consultants. This reviewed the current state of patulin contamination in orchard fruits, generally with special reference to growth habit, the supply chain and sale to the customer. Measurement techniques for patulin, accuracy and precision were reviewed with a selected local institute which had expertise in toxicological issues. HPLC was the method of choice for analysis.

Postharvesting technology with the business was assessed especially routes for contamination, and to check what type of agents were used to control moulds including fungicides and storage. Juice production and measurement of patulin during various phases was also assessed. Chemical mechanisms for patulin degradation using vitamin C, sulphites and sulphur derived amino-acids along with immobilised reactor systems were also explored and reviewed. The HACCP plans were assessed and updated. The main customer has asked FoodWrite to explore harvesting methods in a bid to reduce fruit damage and improve speed to processing.