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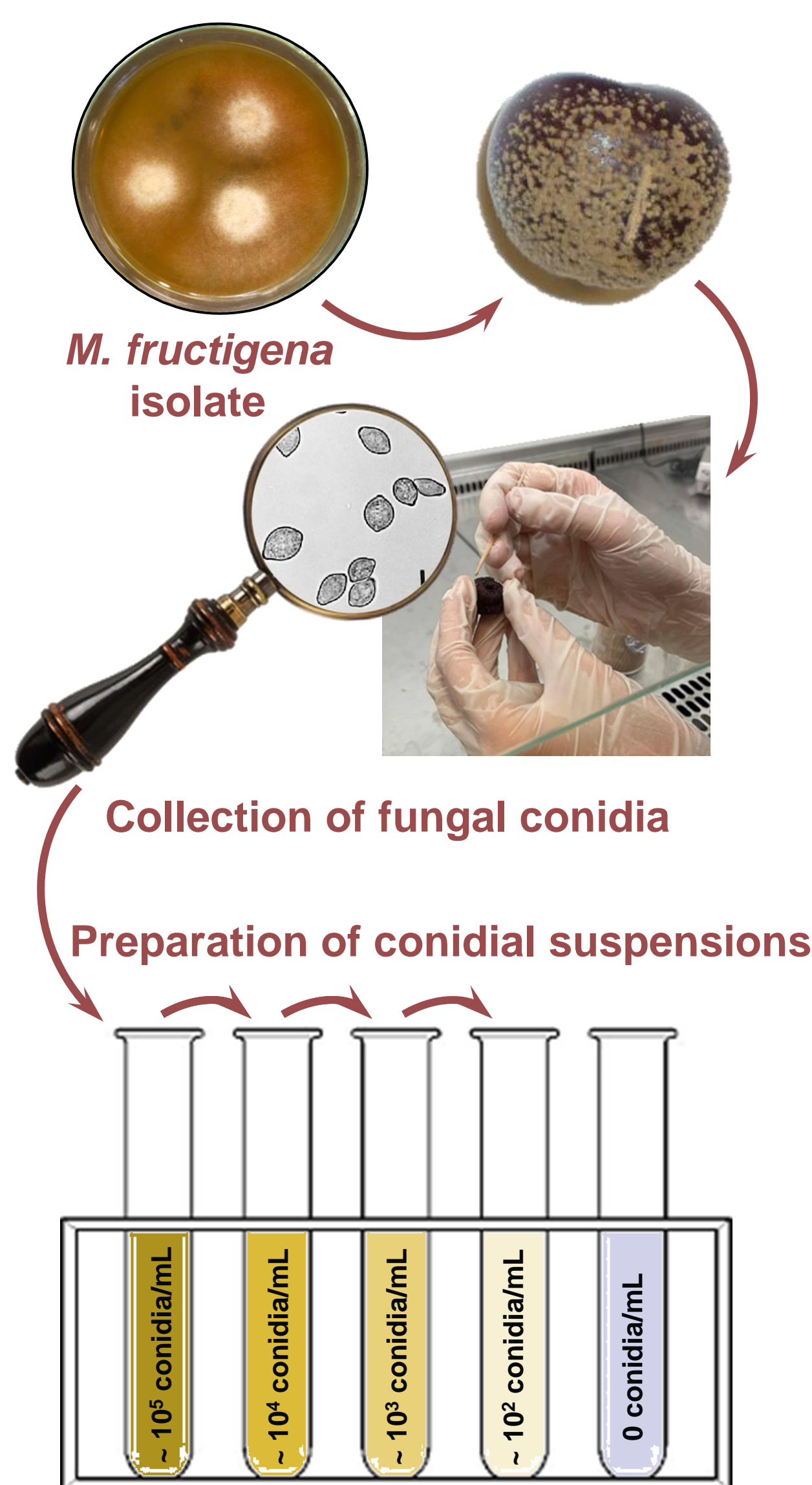
INTRODUCTION

Sour cherries are one of the most nutritionally and agronomically important stone fruits. Sour cherry cultivation, harvesting and storage are not without challenges. The significant losses in postharvest technologies are usually due to airborne fruit diseases among which *Monilinia* spp. causing brown rot are of key importance. The fluctuations of environmental conditions can damage tissues and reduce the resistance of stored fruits contributing to the penetration of fruit pathogens.

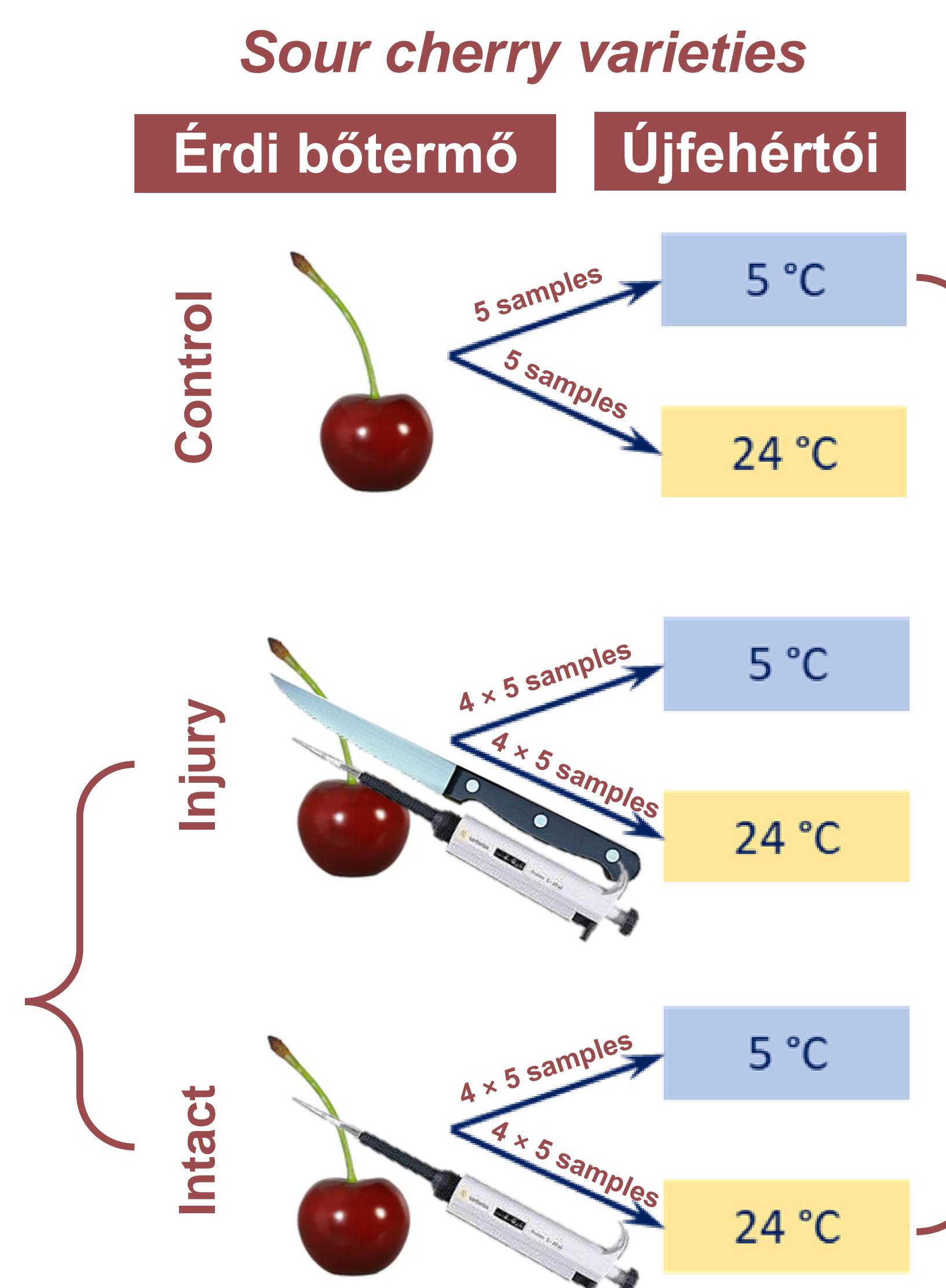
The aim of the study was to determine the applicability of non-destructive, contactless hyperspectral image processing for the detection of *Monilinia fructigena* conidial contamination.

MATERIALS AND METHODS

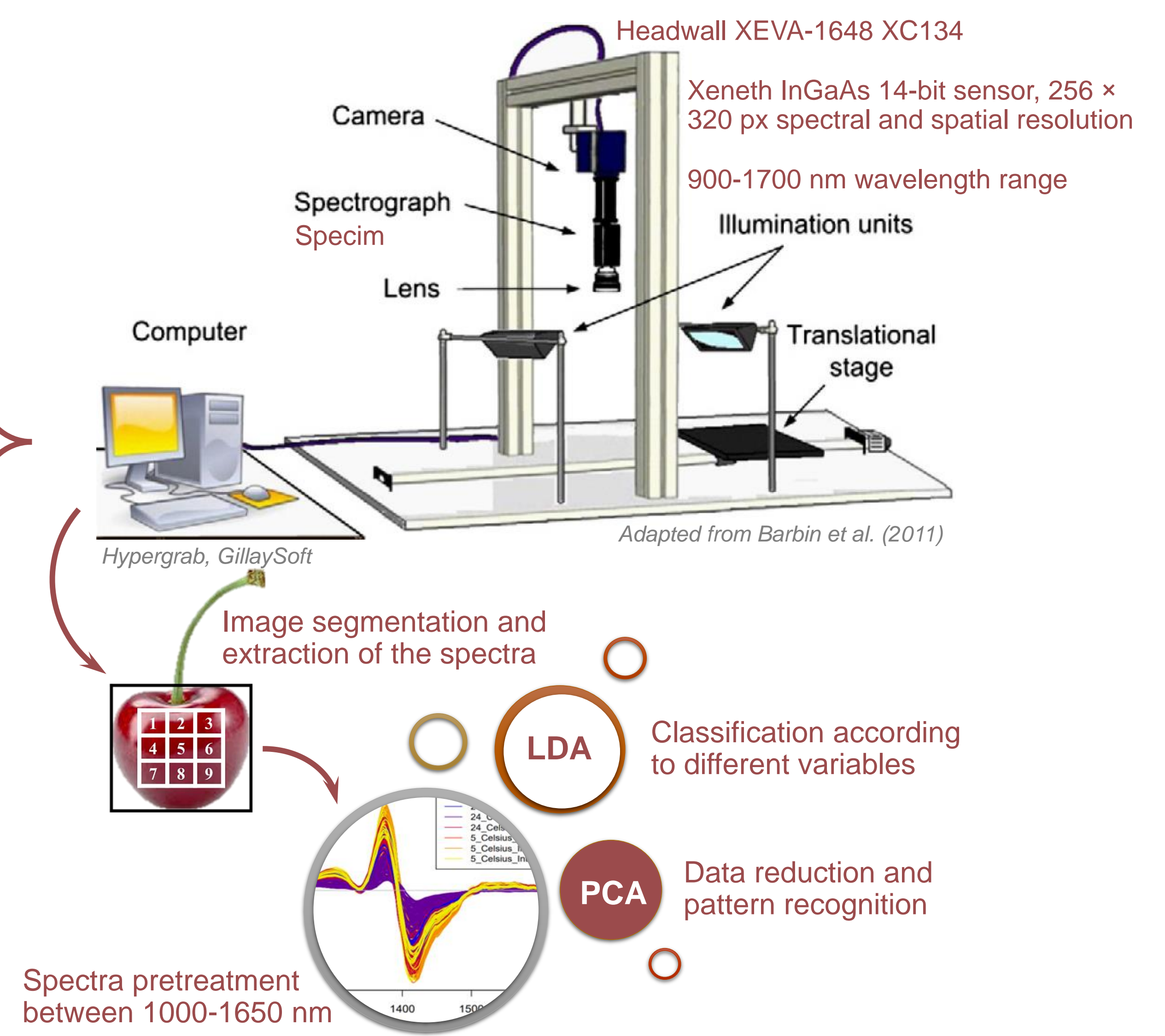
Experiment preparation



Fruit inoculation and storage

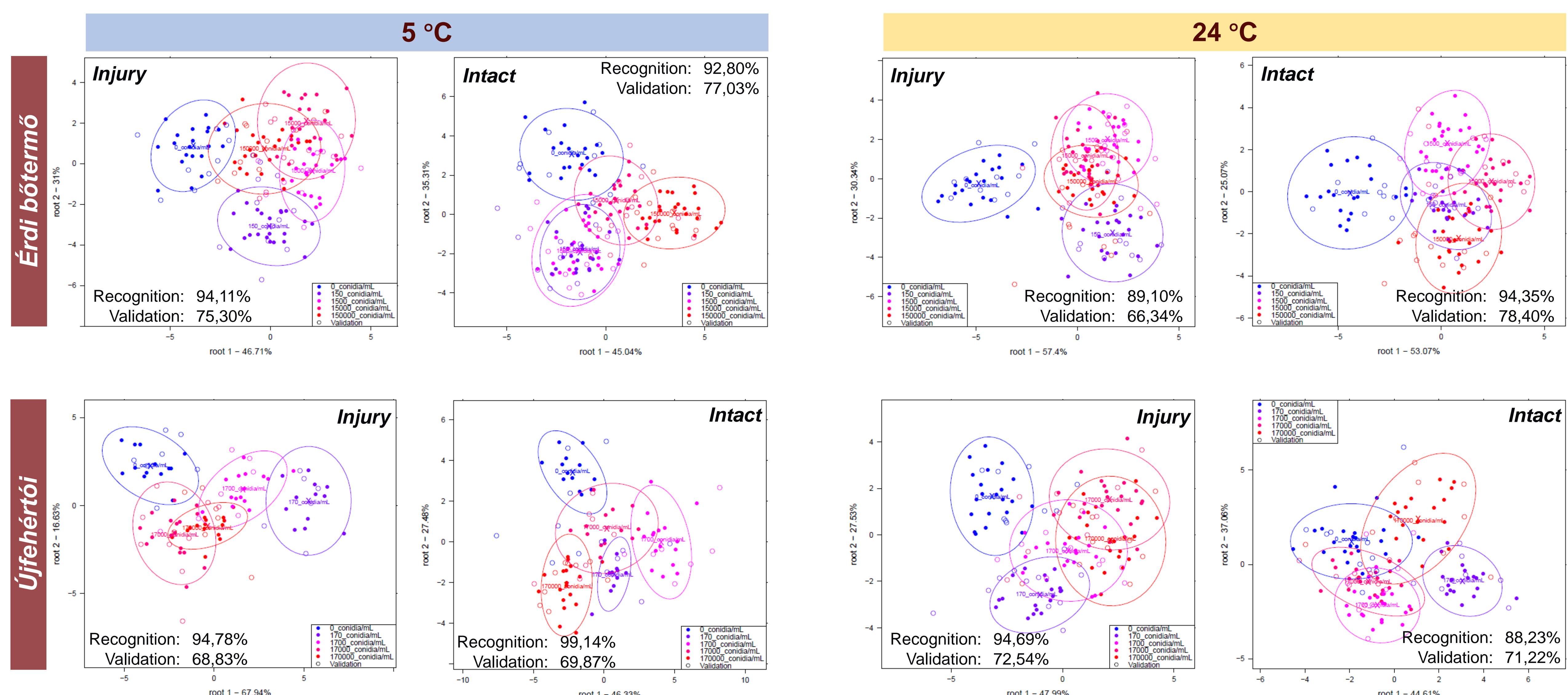


Hyperspectral imaging and data analysis



RESULTS AND DISCUSSION

Only fruits stored at 24 °C, injured and inoculated with a suspension of about 10⁵ or 10⁴ conidia/mL showed signs of infection. The spread of *Monilinia* infection varied between the sour cherry varieties. The infection spread more rapidly in the case of *Újfehértói* sour cherries. After combined spectral pretreatment, for both storage conditions, the PCA-based LDA classification models discriminated fairly well the contaminated fruits even on the first day of storage (see figure below).



CONCLUDING REMARKS

In the present research, to date, we have applied solely the tools of hyperspectral image processing to detect changes during storage of sour cherries contaminated with the fungal conidia of *Monilinia fructigena* in different ways. With models built on large digitized and properly pre-processed data, even fruit in the early stages of infection could be sorted. These experimental experiments fit into the data-driven technology and management reform of agricultural "industry 4.0".

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