

# APPLICATION NOTE



## MALUS DOMESTICA / APPLE POLLEN VIABILITY

Apple pollen viability plays a crucial role in apple production as it determines pollination success and therefore fruit formation and quality.

With the Ampha Z32, thousands of pollen grains are analyzed per second in the field or in the laboratory. Amphasys protocols enable quick and accurate pollen quality control in order to identify the best material for pollination and to ensure optimal pollen storage conditions.

### Straightforward 3-Step Workflow

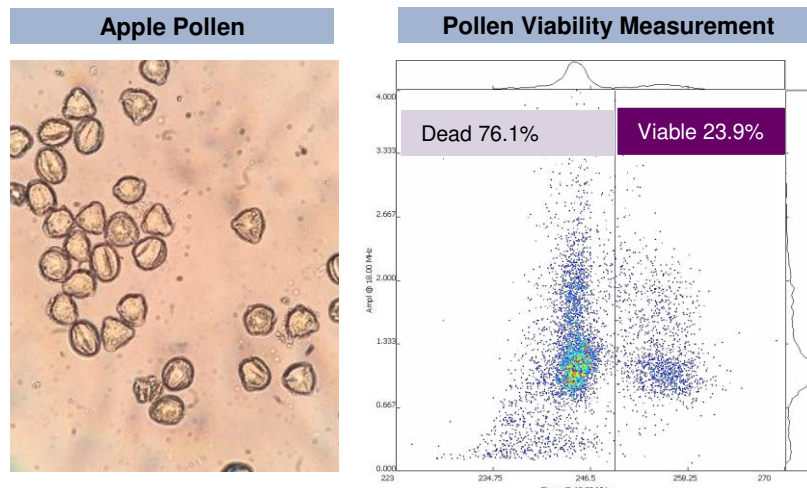


## APPLE VIABILITY APPLICATIONS

Pollen viability is a key factor for successful pollination and influenced by many factors, such as temperature, humidity and use of pesticides. Impedance flow cytometry technology allows rapid and accurate pollen viability testing with minimal sample preparation.

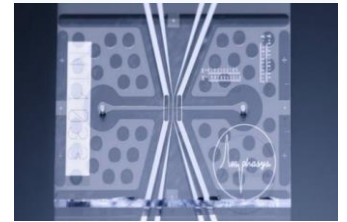
Main fields of application are:

- Characterization of germplasm for pollen viability and amount
- Optimization and control of pollen harvest and storage
- Control of pollen quality before supplemental pollination
- Assessment of the impact of artificial pollination process on pollen viability



### AmphaZ32 Impedance Flow Cytometer

- Rapid
- Accurate
- Reproducible
- Label-free
- Portable for on-site analysis



### Takeaways

- Precise quantification of pollen viability and identification of high-quality pollen samples
- Optimized timing of pollen harvest
- Monitoring of pollen quality after storage or shipping
- Optimization of dehydration and storage
- Mixing of pollen samples to achieve target viability

The figure on the left shows result of the measurement of an apple pollen sample stored at  $-20^{\circ}\text{C}$  for 12 months.

Before suspension in the measurement buffer, dehydrated stored pollen is rehydrated in a moist chamber.