VideometerLab for combined spectral reflectance and fluorescence imaging

We measure what you see – and beyond

ABOUT US

- Spectral imaging company
- Founded 1999
- Products
  - Lab instruments,
  - Turn-key in-line systems, and
  - R&D projects
- App. 700 imaging R&D projects since 2000
- In-line 24/7 spectral imaging since 2002
- Based in Copenhagen, Denmark
- Partnerships worldwide

OUR LEGACY

1999

The beginnings

Videometer was co-founded by Jens Michael Carstensen and 7-Technologies in 1999, as a spin-off from the Technical University of Denmark. The first patent application was filed.

2000

Project-based

In 2000, Videometer began its project-based activity. During these years, the company's main focus was set on custom-made vision systems for in-line and on-line quality control.

2018

A new era

In 2018, Videometer's structure underwent new developments both in terms of strategy and structure. This year marked the beginning of a new era for the company, in terms of focus on instruments.

2020s

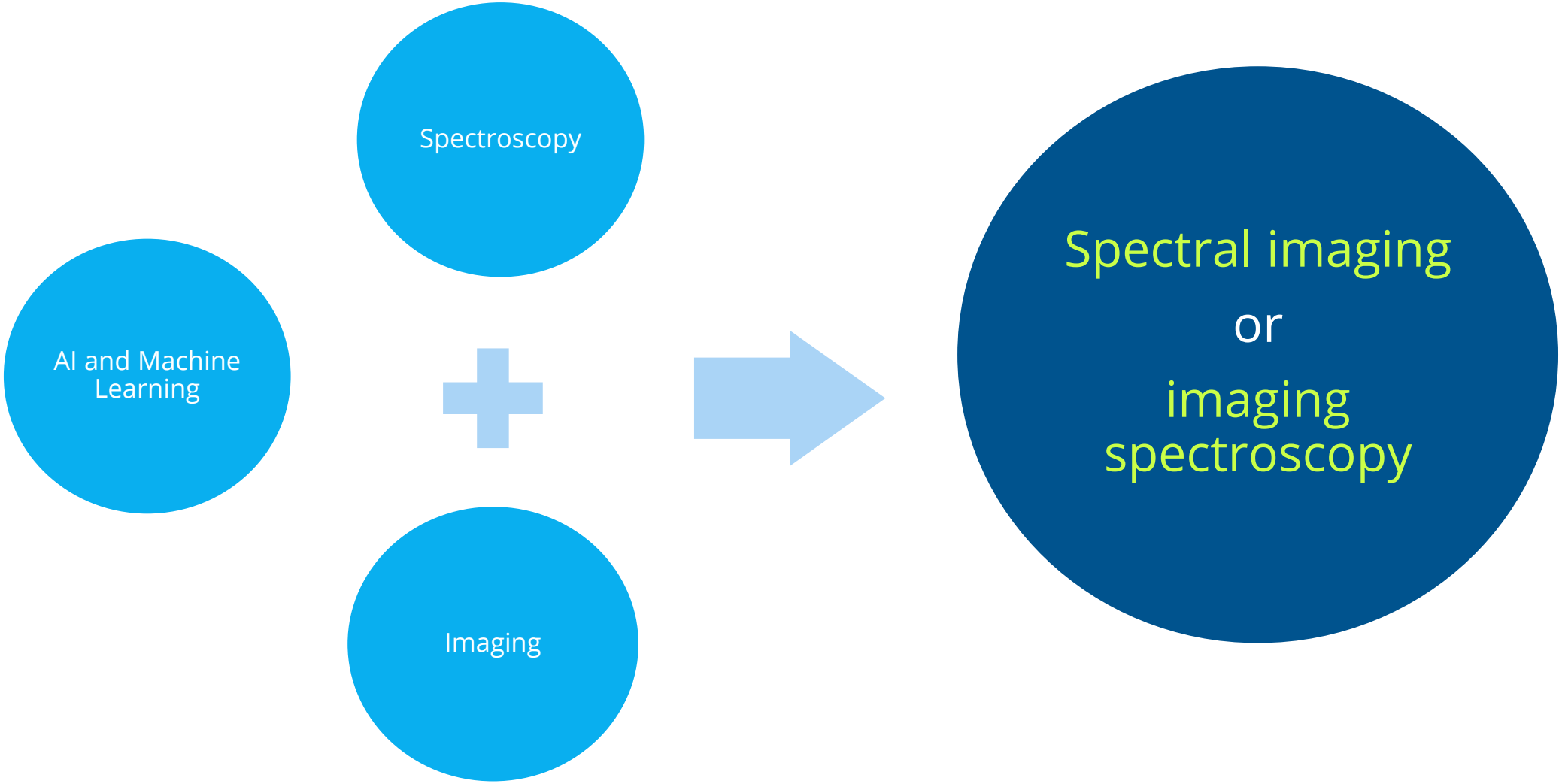
Today

Today, Videometer is a leading provider of spectral imaging solutions worldwide, selling both spectral imaging instruments and custom-made vision systems. Videometer is synonym of excellence and innovation in its field.





SPECTRAL IMAGING



WHAT COLOR IS THE CAR?

APPEARANCE

=

CHEMISTRY

X

PHYSICS

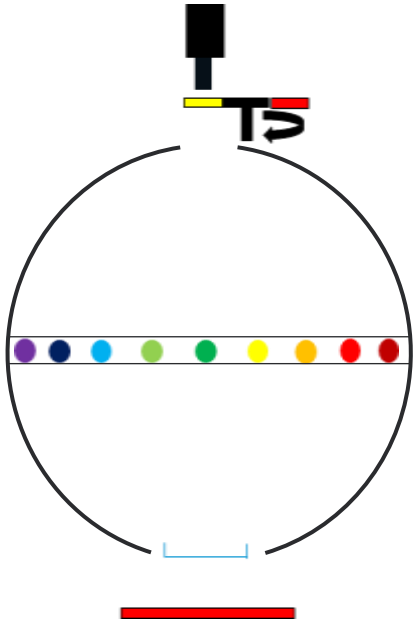
X

ENVIRONMENT

X

ILLUMINATION

LED BAND SEQUENTIAL SPECTRAL IMAGING



Camera and lens

Emission filter changer

Integrating sphere

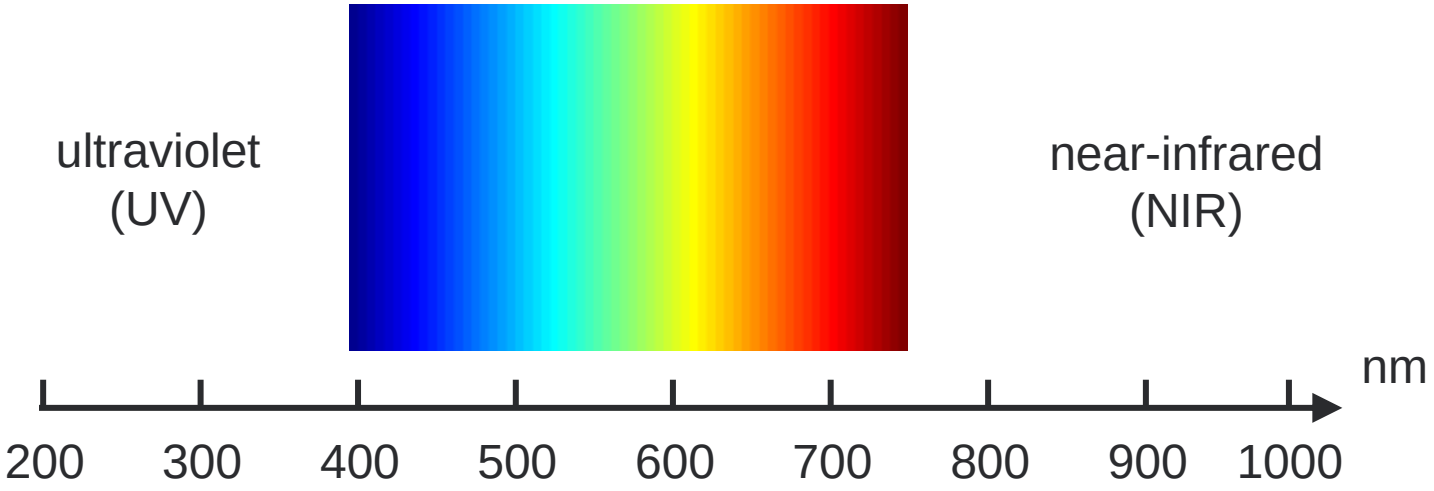
LEDs of multiple wavelengths

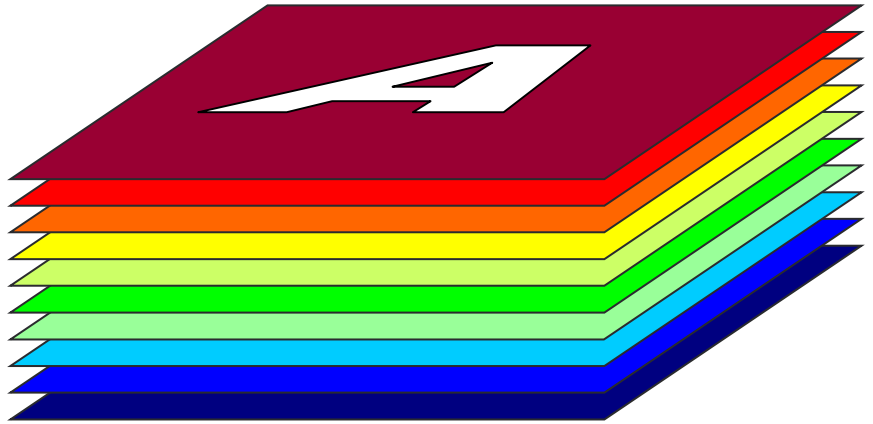
Sample is placed in target opening

Backlight or background

- LEDs: Stable, durable, large selection, rapidly developing technology
- Up to 20 different high-resolution bands acquired sequentially in 0.5-1.0 seconds
- May be combined with emission filters, backlight, and darkfield illuminant
- Combined reflectance spectral imaging and fluorescence spectral imaging possible!

SPECTRAL IMAGE

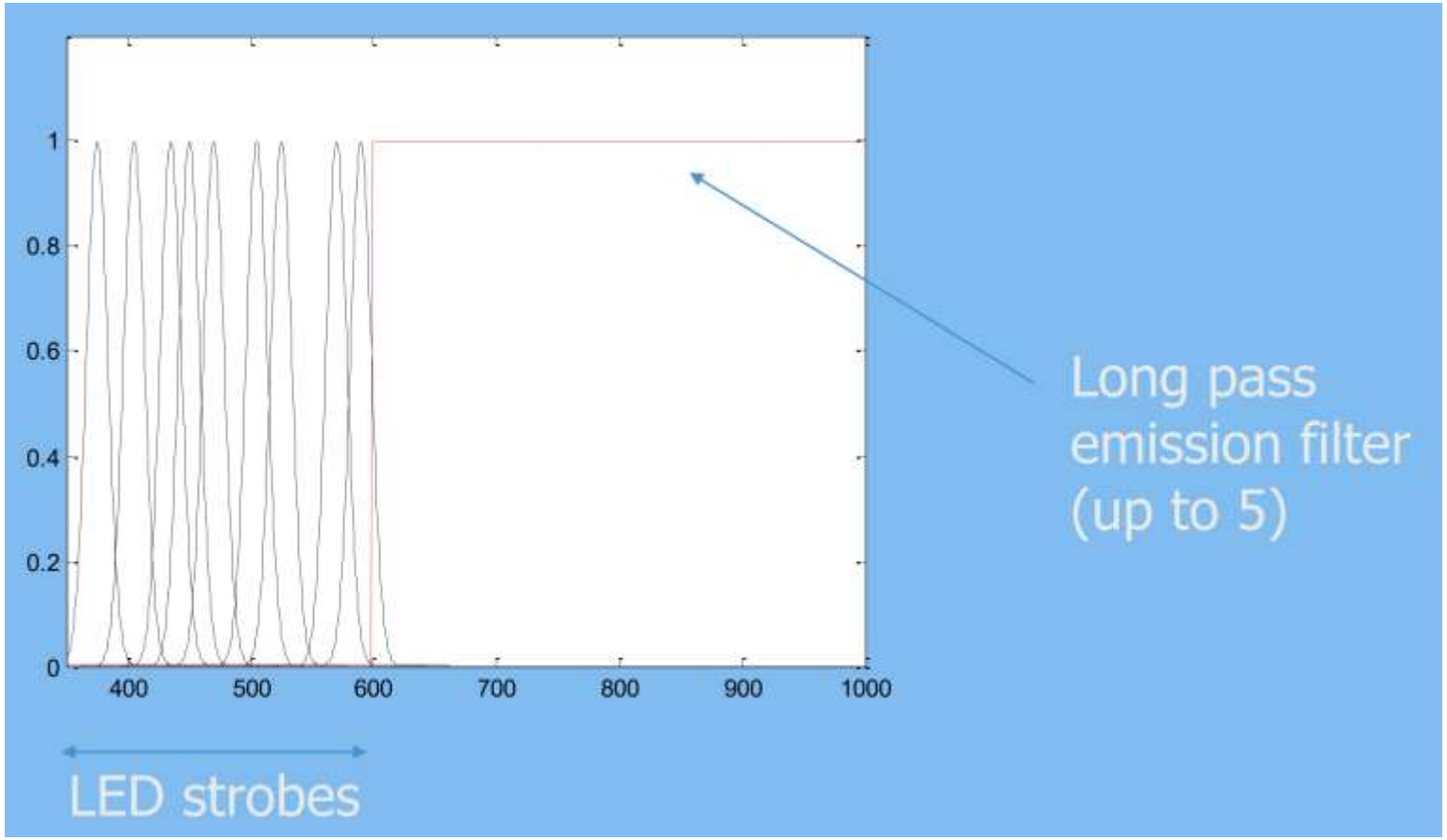




N images obtained at N wavelengths

Microbial and plant metabolites	Accurate color assessment and pigment concentration	Pigment baseline, moisture, fat, etc.	Spectral image is typically a large data structure of 100 MB to 10 GB

MULTISPECTRAL IMAGING



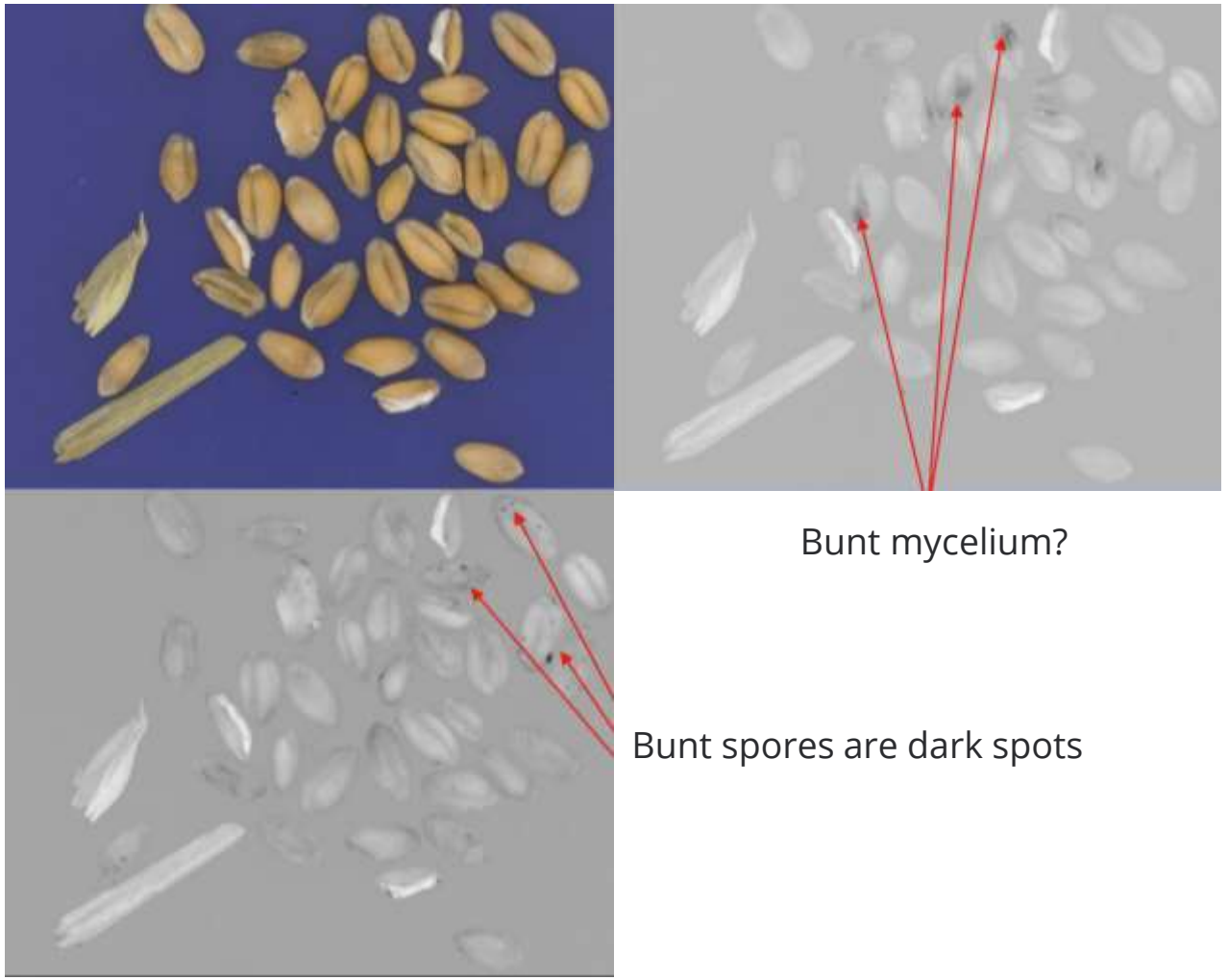
EMISSION FILTER CHANGER

- 5 emission filter apertures where the first is usually left empty for reflectance imaging
- Typically 4 apertures for long pass (LP) filters (fluorescence) or short pass (SP) filters (upconversion). Band pass filters (BP may also be used)
- All filters must be 25 mm diameter and up to 3 mm thickness. Possible suppliers are e.g.
  - Andover Corporation (thickness is typically 1.5 mm unmounted)
    http://www.andovercorp.com/Web_store/Edge_Filters/steep_edge_filters.php
  - Semrock (be aware that mounted filters are 3.5 mm thick)
    http://www.semrock.com/filtersRefined.aspx?id=21&page=1&so=0&recs=100
  - Edmund Optics (thickness is typically 3 mm unmounted)
    http://www.edmundoptics.com/optics/optical-filters/longpass-edge-filters/highperformance-od-4-longpass-filters/3044

EMISSION FILTER SET

- Standard emission filter sets
  - LP OD4 400 nm, 500 nm, 600 nm, 700 nm
  - LP OD4 450 nm, 550 nm, 650 nm, 700 nm
- Customized filter sets available
- Easy filter set configuration in software
- Adaptive setting of exposure time and optimal dynamic range
- One image obtained from each combination of LED excitation strobe and emission filter. LED strobes in the pass band of emission filters are usually omitted.

WHEAT WITH BUNT 4 SPORED PER SEED

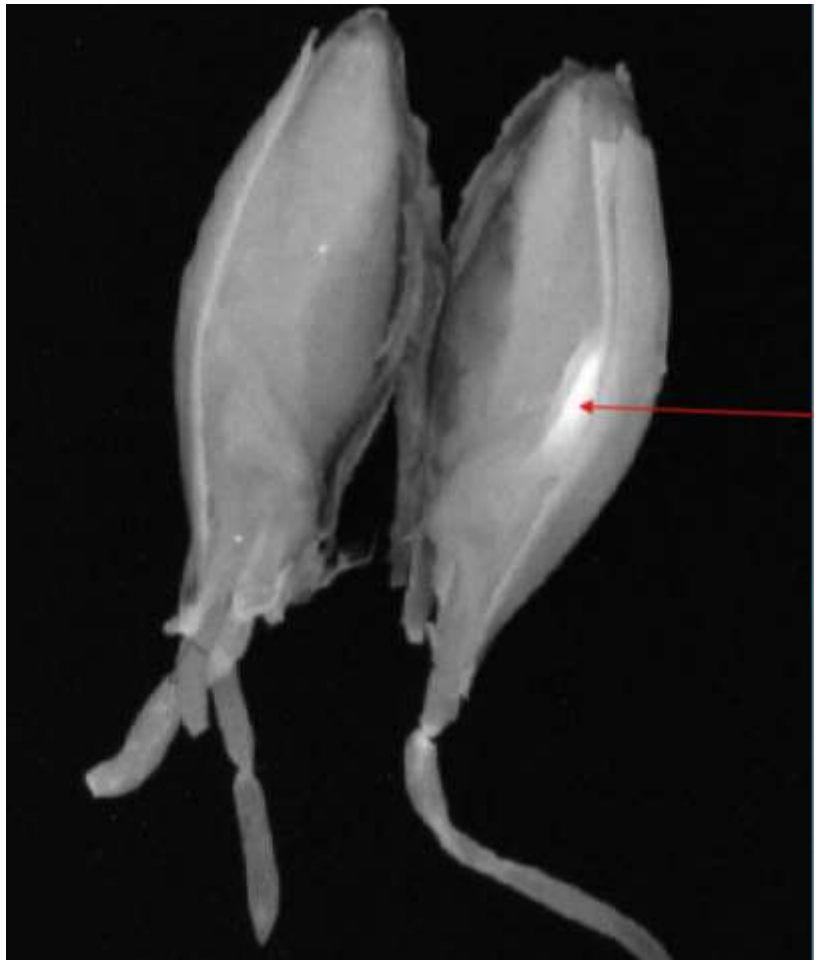


Bunt mycelium?

Bunt spores are dark spots

FUSARIUM FLUORESCENCE

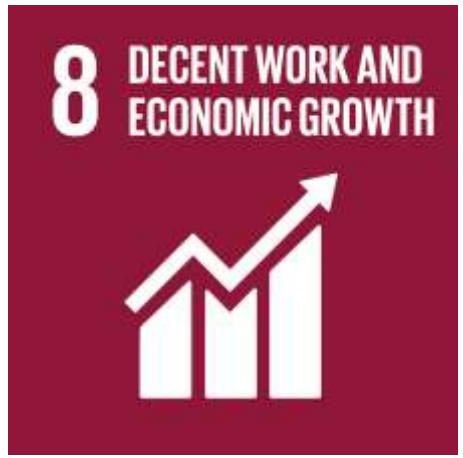
ACROSPIRE IN BARLEY MALT



OUR VALUES

Zero Hunger and
Food Security

Good Health and
Well-Being



Decent Work and
Economic Growth

Responsible Consumption
and Production

Life Below Water

Partnership for
the Goals

THANK YOU!

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