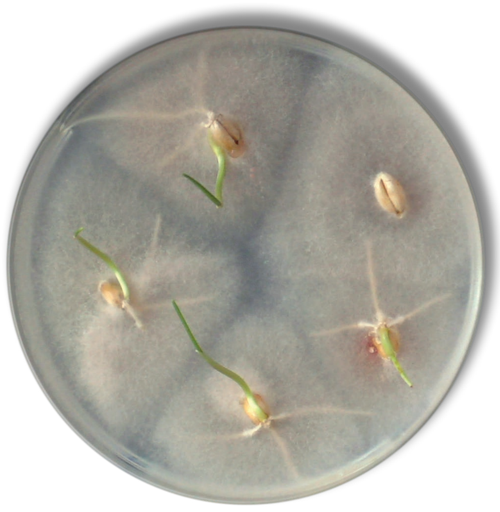
world-class experience, skills and resources

WHEAT SEED-BORNE DISEASE TESTING

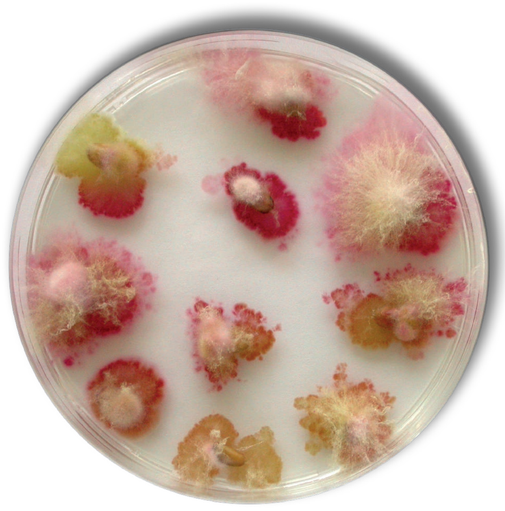
Seedling blight testing

Seedling blight is generally caused by *Microdochium nivale* on the seed. Depending on the season and soil conditions, infected seeds may be killed before or soon after emergence leading to thinning of the plant stand and reduction in yield. Seed treatments control seedling blight, but may not be needed if there is less than 10% infection on the seed.

NIAB LabTest determines the % of seeds infected with *Microdochium nivale* and other Fusarium species such as *Fusarium graminearum*. Seed is placed onto agar and incubated at 20°C for 5-7 days. Trained mycologists examine the colonies on the plates and identify *Microdochium nivale* from other fungi present.



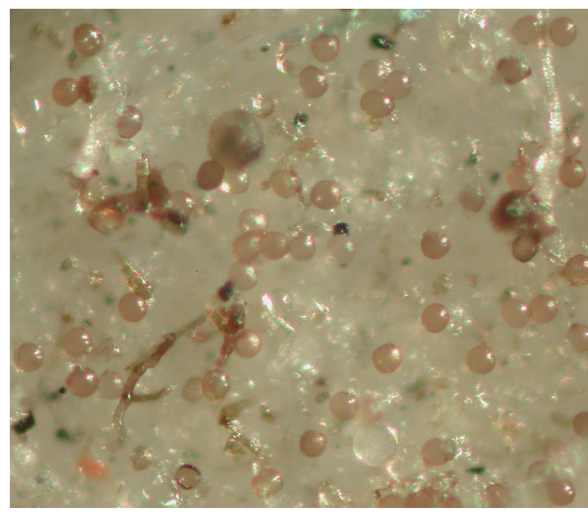
Microdochium nivale on seed



Fusarium graminearum on seed

Seedling blight on wheat

Bunt ball forming in wheat ear



Bunt spores (x200 magnification)

Bunt testing

Bunt is caused by *Telletia tritici* and is seed-borne. The grain is replaced by a mass of spores – a bunt ball. The spores can rapidly contaminate everything they come into contact with – crop, combine, trailers etc. Bunt will germinate alongside the growing seed and infected seedlings are indistinguishable from healthy seedlings. Plant growth is virtually unaffected until after ear emergence.

Trained analysts identify and count individual spores and determine the number of spores per grain. Any seed lot with a bunt spore level of more than one spore per grain should be treated with an appropriate fungicide.

Photo (right): Analysing seed samples at NIAB

NIAB LabTest

NIAB LabTest is one of the longest established services at NIAB, providing commercial and statutory analytical services across a range of crops. These include potato virus testing, grain quality tests, variety identification, seed health, germination, plant disease identification and DNA fingerprinting.

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