

RE: protocols for growing Gaeumannomyces graminis var. tritici and using it to infect grain?

Gail Canning <gail.canning@rothamsted.ac.uk>

Fri 10/27/2023 10:41 AM

To: Tim Mauchline <tim.mauchline@rothamsted.ac.uk>

Cc: Waring, Bonnie G <b.waring@imperial.ac.uk>; Kim Hammond-Kosack <kim.hammond-kosack@rothamsted.ac.uk>

This email from gail.canning@rothamsted.ac.uk originates from outside Imperial. Do not click on links and attachments unless you recognise the sender. If you trust the sender, add them to your [safe senders list](#) to disable email stamping for this address.

Hi Tim,

Yes we use PDA and grow the isolates at 20C.

We don't use the method they describe in the paper as Gt inoculum but I think we should try it. We used to inoculate sterile polenta with agar plugs of Gt and use that as inoculum but for some unknown reason it stopped working well and the infection level was very poor after repeated attempts. So now we add a layer of mashed up Gt/PDA agar plugs as inoculum to our bioassays (which is what Li Liu has done). It works well but you need to set up at least 5 replicates per treatment as there can be variation – but that would be the same if they used the oat-infested inoculum as well.

Richard used oat infested seed to inoculate field trials years ago but with limited success.

Hope that helps and if they need any more advice happy to help.

Hopefully, you managed to hand over our Gt isolates to the Earlham successfully 😊

Thanks for that again,

Gail

From: Tim Mauchline <tim.mauchline@rothamsted.ac.uk>

Sent: 27 October 2023 09:26

To: Gail Canning <gail.canning@rothamsted.ac.uk>

Cc: Waring, Bonnie G <b.waring@imperial.ac.uk>; Kim Hammond-Kosack <kim.hammond-kosack@rothamsted.ac.uk>

Subject: RE: protocols for growing Gaeumannomyces graminis var. tritici and using it to infect grain?

Hi Gail, please see the message below. What is the best medium to grow Gt? I think we have used PDA but wanted to check with you.

Cheers, Tim.

From: Waring, Bonnie G <b.waring@imperial.ac.uk>

Sent: 26 October 2023 11:25

To: Tim Mauchline <tim.mauchline@rothamsted.ac.uk>

Subject: protocols for growing *Gaeumannomyces graminis* var. *tritici* and using it to infect grain?

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi Tim,

Hope you're well! Hoping to confirm the date of the Silwood-based meeting any time now - just awaiting feedback from interested folks at CABI around which day is best for them.

In the meantime, I was wondering if you could share any protocols for growing Ggt in culture (we're going to obtain a pure culture from CABI but would like to propagate it) and using it to infect oat or barley seeds. The latter is because a few papers (e.g. <https://www.frontiersin.org/articles/10.3389/fmicb.2018.02198/full>) seem to produce infested soils by blending up Ggt-infested seeds into a powder and mixing them with the soil at a 0.1-1% w/w ratio. I've reviewed about 10 papers now, but they never give exact culture conditions (media used, temperature, etc), nor the way to transfer a culture 'plug' into a grain-based medium and ensure it grows.

Thank you so much and look forward to seeing you in person relatively soon!

Best,
Bonnie

Senior Lecturer, Grantham Institute - Climate Change and Environment
Imperial College London
<http://www.waringecologylab.com>

Rothamsted Research is a company limited by guarantee, registered in England at Harpenden, Hertfordshire, AL5 2JQ under the registration number 2393175 and a not for profit charity number 802038.