Autor	Comment	Solution
ZN	In the Czech abstract, I would recommend replacing the term "rez travní" with "černá rzivost trav"	Corrected.
ZN	In both versions of the abstracts, I would then add the latin name Puccinia graminis Pers.	Added in both abstracts.
ZN	What is the situation with the occurence of wheat stem rust in the Czech Republic (after all, the more harmful pathogens in our country are leaf rust of wheat yellow (stripe) rust of wheat) and what can be expected trends in the occurrence and harmfulness of this disease in the coming years?	In recent years stripe rust is becoming a bigger problem. Stem rust is not as common but its occurence is difficult to predict.
ZN	How does the author evaluate the benefits of gene banks for research work and breeding programmes?	The role of gene banks is crucial and accessibility of samples is a necessity for research in plant production.
ZN	In the tabular overview of 90 wheat varieties I missed some passport data that the author could have included, e.g. ECN (national accession number) if the sample was from Gene bank, year of registration in the Czech Republic or first registration in the EU, name of the maintainer and country of origin or pedigree.	I understand the table does not contain complete information about the cultivars. The thesis however contains information that the cultivars were sourced from and the information is publicly accessible in the respective sources. As the reviewer stated, the information about pedigree is not stated by breeders anymore.
ZN	For the description of the field resistance trials, I lack at least basic data on agrotechnics (forecrop, soil preparation, sowing date, pesticide use) and information on how many years of testing were used for the purpose of the work (if necessary, indicate the years of testing).	I understand that this is a common type of information in other types of field experiments and it would be good to specify (especially the sowing date, but then it would also be interesting to include weather data). I do not majority of the requested information and I did not include weather data because I was not working with this data in any way.
ZN	Would it not be preferable to standardise the rating of disease incidence and give the rating in the standard way, as is done in the trials by the Central Institute for Supervising and Testing in Agriculture?	This was a matter of decision at the start of my PhD. The rating system used by ÚKZÚZ is very uncommon in international publications and my work was presented in international journals so I opted for that. Either way I would have to convert ratings from sources abroad and sources in Czech Republic. I also did not want to have a different rating system in the journal publications and in the thesis.
ZN	Why do you think that a variety which is feed type and also suitable for the production of wafers and biscuits (category CK), which has a low level of falling number and lower bulk density, which has less resistance to yellow rust and which is a late variety, had the largest multiplication area in the Czech Republic for 2 years?	I do not know but I suppose it is profitable? High yield? The conditions for higher quality wheat cultivars are not good in recent years?
ZN	Here I would like to correct the author, the database of ÚKZÚZ provides information that according to provocation tests the LG Mocca variety is less resistant to wheat stem rust attack rating 5-4)	I do not know the source of this discrepancy. I have performed several experiments with LG Mocca and the reaction was never moderate.
ZN	I would like to ask from which grass was the Sr38 gene derived, which many of our registered varieties are said to carry, and whose resistance is surpassed by the Digalu race?	The gene comes from *Aegilops ventricosa* (syn. Gastropyrum ventricosum (Tausch) Á.Löve, *Triticum ventricosum* (Tausch) Ces.)
ZN	However, these markers used, as the author states, show inconclusive results and follow-up tests must be performed for their further use. What tests does the author have in mind?	Ideally I would pick several isolates virulent to Sr8a and several avirulent to Sr8a and perform greenhouse tests on a panel of wheats to see if any of the markers predict the presence of Sr8a resistance. Same with the other gene.
MS	Abstract - rewrite 8th sentence to „Quantification of disease severity is done ... learning, and assessment of fungal biomass based on chitin quantification“	Corrected
MS	p. 14 (I am using total paging of *pdf file) – do not use “enemy” but “pathogen” or “disease causal agent”	This was a stylistic choice, not an English mistake. I decide not to change it.
MS	p. 15 – better 2. Literature overview; insert taxonomical position of rust in 2.1 or 2.2 – do not use “under“ basidiomycota or 2.3. - use standard taxonomical classification (Pucciniaceae, Pucciniales, Pucciniomycetes, Pucciniomycotina, Basidiomycota, Fungi)	Added position in taxonomy.
MS	it would be useful to show Pgt lifecycle (and highlight phases (types of spores) important for epidemics during growing season and those playing role in global Pgt spread)	The life cycle is described in text. I decided not to include the figure.
MS	p. 18 – 2.3.1. - significant variation - of what? + Use „host range“, not „host-range “.	Changed to host range. Changed to "significant physiological variation".
MS	Comment to text on p. 19 which I suggest to rewrite. – Recent taxonomy and identification of fungi (esp.those microscopic) is based on so called polyphasic approach = combination of morphological together with molecular (+ sometimes other) characters. Both forma specialis as well as physiological race represent intraspecific categories, but physiological race (biotype or group of biotypes) is not officially recognized as a taxonomy unit while f. sp. is allowed by International Code of Botanical Nomenclature (and can of course include several races). All taxonomic categories could be found on https://www.indexfungorum. org/names/Names.asp - where also other Pg subspecies and formae speciales are listed	Rewritten.
MS	p. 34 – I would not use “immunity” but “resistance” if speaking about breaking by new races; update information in the last sentence as EU approach to NGT is changing recently - https://www.europarl.europa.eu/news/en/press-room/20240202IPR17320/new-genomic-techniques-meps-back-rules-to-support-green-transition-of-farmers	Changed to resistance in this case. That change is in progress since 7/2023, I changed the sentence but comments on current status on this legislation change are outside the scope of my thesis.
MS	p. 42 – “AUDPC“ from title is not explained in following text	Changed the title (no abbreviations in chapter titles)
MS	p. 43 – rewrite “Such trials need not to be isolated from the influx of new inoculum from the atmosphere”	Rewritten.
MS	p. 48 – in hypotheses - No. 2 is listed twice	Corrected.
MS	p. 51 – citation “Dumalasová et al., currently under review“ – any updates? Can you put provisional citation in the list?	No updates. Was rejected in Euphytica, now submitted to CRC.
MS	p. 55 – do not use APR in name of chapter, give full text	Corrected.
MS	p. 62 – “data...were” (not was)	Changed elsewhere in the text too, however currently the singular form is also widely accepted. It is not a mistake.
MS	p. 68 – “moderate effect ... resistance”- replace text to previous page; Fig. 9 – “Number of observations is indicated above each group.” – I cannot see it in graph? The following text (contrasting reactions in greenhouse tests) is more discussion than results	I was asked to move some text from discussion to results by another opponent. The distinction between discussion and results is not perfectly clear here but I believe the final version makes the most sense.
MS	p. 72 – do not use “x” but “-“ Michigan Amber – Pgt TRTTF interaction	Corrected.
MS	p. 75 – Fig. 10 – how do you mean „This graph includes data for both flag and flag-1 leaves.“ – is it an average value? Rewrite	Added "shows a mean value".

MS	p. 78 – do not use “Germany’s outbreak” but “disease outbreak in Germany”; rewrite “races TTRTF and TTKTF in recent samples from Slovakia and Austria that are both virulent to Sr38.“ - Race is not virulent to a gene! Please, speak about “cultivar/line/genotype bearing the gene ...” – also in the following text of discussion... „Results shown here indicate it is not present in current day cultivars in Czech Republic and it would not be effective against today’s important races (notably TKTTF and TTRTF).“ – better „Our results indicate that wheat cultivars recently grown in the Czech Republic do not contain Sr36 and it would not be effective against currently important Pgt races (notably TKTTF and TTRTF).“	Rewritten.
MS	p. 85 – please rewrite „It appears that the results from the two methods correspond less with higher disease severity“ ?	Rewritten.
MS	Figs. 14 and 15 – the axis Y should start with 0% - you cannot use negative percentages! Fig. 16 – I would name it “Image segmentation in infected leaves photographs of wheat cultivars Evina and Rivero“	No datapoint has a negative value. It is only the trendline.
MS	p. 88 – “and virulence to those races”? Term virulence / avirulence refers to pathogen, not to the host!	Corrected.
MS	p. 89 – Chapter 9 – better use “Future perspectives”	Changed.
MS	Do not use in names of chapters Annex together with its synonym Appendix – I recommend to keep “12. Appendices” (or “Supplementary data”) for presentation of figures and to rename chapter 11 e.g. to “Information about PhD candidate” starting with 11.1. Author´s name and identifiers” (normally those in details are part of separate Summary of Ph.D. thesis or CV of a Ph.D. applicant which are sent to reviewers), 11.2. List of author´s papers – I miss statement of authors´ contribution which is essential to judge input of a PhD candidate – please add!!!, 11.3. List of conference contributions – authors are missing, do use standard citation, 11.4. Internship	Added statement of author's contribution, changed citation style of conference contributions, Changed Annex to Information about Ph.D. candidate
MS	Part 11.5 – the text should be replaced to page 3 - it has no sense to have 2 acknowledgement parts!	Renamed this section.
MS	Chapter 12. . be more careful in captions to , do not use general terms, be specific!!! 12.1. does not show mycelium (which is hidden within tissues) but pycnidia and aecia; fungal colonies? I suggest to use standard description under figure, avoid repeating “Following image...“	Kept the captions, I did not want to have them in the main figure list. Deleted repeated sentences.
MS	What I really miss is citing four student´s own papers in the text – please add those citations to relevant parts of results and discussion!	I do not understand this comment, the PhD thesis is a work on its own and parts of the results are also published in journals. Citing the publications would be like citing itself. There is a list of publications in the appendix.
MS	With global climate change do you expect that P. graminis ssp. graminis would meet in CZ conditions favourable for overwintering? This would increase genetic variability in Pgg populations.	I do not expect that. Many conditions would have to be met.
MS	Are there information on mixed infections in countries where both Pg ssp. (graminis and graminicola) are present? In case when both subspecies would be present on Berberis to complete their sexual process – what are the consequences? Are you aware of studies to assess gene flow in Pg or other rusts?	I have no information like that from recent studies. It would be an interesting thing to study but someone would have to pay for it. I would ask Julian Rodriguez-Algaba first though.
MS	Physiological races of biotrophic fungi and oomycetes have been designated according to various systems over the time. With increasing number of host differential lines used to identify pathogen races the number coding has become popular (instead of letter code nomenclature used traditionally in Pgt research) – what do you see as their advantages?	I would prefer the codes to be as short as possible. Once the letter codes have 5 letters it takes a lot of time to get used to the nomenclature. Then again, only few people in the world can properly characterize the race.
JM	I miss whole taxonomical classification of rusts. I mean main taxonomical categories.	Added.
JM	Is it necessary for Pt and Pst to complete the entire life cycle in conditions of the Czech Republic? How do Pt and Pst overwinter in the Czech Republic?	It is not necessary. Influx of inoculum.
JM	I would recommend to add graphical life (disease) cycle of Pgt (e. g. use it from Agrios: Plant Pathology).	I decided not to include this image. The life cycle is described thoroughly in the text.
JM	Physiological races are not taxonomical units, but are still intraspecific categories that differ in virulent pattern.	This is added to the text according to review by MS
JM	Page 9-10, chapter 2. 3. 3.: There is no information on how many phylogenetic clades of Pgt (genetic groups) have been identified so far.	Added a sentence with this information.
JM	Page 21, chapter 2. 6. 5.: I would prefer to use "resistance to different pathogens" instead of "resistance to different diseases".	Changed.
JM	Page 21, chapter 2. 6. 5.: I would prefer to show the split Table 3 on one page.	Added page break.
JM	Page 22, chapter 2. 6. 5.: The acronym CRISPR is not explained in the text.	Added an explanation for the acronym.
JM	Page 22, chapter 2. 6. 5.: Could you explain the difference between "immunity" and "resistance"? I know that in English-written papers it is common to use "plant immunity" as PTI, ETI; however, I would prefer to use "resistance" instead of "immunity".	Immunity in traditional phytopathology is the incompatibility between the species, while resistance is a quantitative scale.
JM	Page 30, chapter 2. 8. 1.: AUDPC is not explained in the text.	I deleted it from the title of the chapter. I decided not to include it previously but forgot to delete it from the chapter title.
JM	Page 33, chapter 2. 8. 4., Table 5: I would prefer to add "5' to 3'"" to the cell called primers. There is no explanation of the abbreviation "F:/R:"	Edited.
JM	Page 35, chapter 2. 9. 2.: Rewrite "15 samples with gained virulence" to "Fifteen samples with gained virulence" (beginning of the sentence).	Edited.
JM	Page 40, chapter 5. 4.: There is no information regarding the concentration of DNA, ethidium bromide, agarose gel and primers.	I followed protocols from the sources of the markers. I prefer that researchers go to the original source of information.
JM	Page 42, chapter 5. 4. Change units of volume "0.14 µl of primer mix, 2 µl of DNA sample" to units of concentration.	I understand why that would make more sense but this is not wrong and it is stated like this in the protocol by the manufacturer.
JM	Page 55, chapter 6. 1., Figure 8: There is no information on the molecular marker that was used for agarose electrophoresis.	I assume this was regarding the size ladder? I added the info.
JM	Page 66, chapter 7. 1.: Rewrite "all of them were virulent to Sr38" to "all of them were virulent to wheat cultivars with Sr38 gene".	Amended

JM	Page 66, chapter 7. 1.: Rewrite "they are both virulent to Sr38" to "they are both virulent to wheat cultivars with Sr38 gene". Check the other sentences with "virulent to gene". Page 76, chapter 9: Rewrite "virulence to those races".	Rewritten.
JM	I would prefer to move tables and figures from chapter "Discussion" to chapter "Results", because they collect and describe the obtained results of the candidate; however, in the tables and figures, there is no comparison with the research of other studies.	I moved 1 table and 1 figure from results to discussion according to the initial review. I put as much discussion as I could while avoiding unreliable sources and studies.
JM	I would recommend using a dash instead of a hyphen to specify numerical ranges. Generally, I would recommend to check legends and captions of figures and tables to improve the text. Some of the sentences in the table and figure legends are in bold, others are not. Regarding Pgt name, I would recommend unifying figure legend. Readers can read: stem rust, Puccinia graminis, P. graminis, Puccinia graminis f. sp. tritici or Pgt.	found hyphens where it indicates a range and changed to dash. I unified the table and figure titles, used non-bold letters everywhere, unified the Puccinia graminis f. sp. tritici across figures.