

**Candidate (first name – last name): Samuele Bumbaca**

**Title of the Thesis: Geomatic Techniques to Support Phytosanitary Products Tests within the EPPO Standard Framework**

**Supervisor (first name – last name): Enrico Corrado Borgogno Mondino**

**Name of the reviewer: Giovanna Sona**

**Reviewer's institution: Università degli Studi di Milano - DiSAA**

**Please rate the following points**

	<b>Insufficient</b>	<b>Sufficient</b>	<b>Good</b>	<b>Excellent</b>
<b>Overall scientific merit</b> (originality, relevance, completeness)		X		
<b>Introduction and bibliography</b> (sufficient information provided by the introduction, appropriate cited references)	X			
<b>Methodology</b> (clearly described methods, adequate and exhaustive data analysis (if applicable))	X			
<b>Results</b> (convincing and clearly presented results, adequate number and quality of tables and figures)		X		

**Overall evaluation (please check one)**

- ☐ **The candidate can be admitted to the final examination**
- ☐ **The candidate can be admitted to the final examination but the thesis requires minor revision; further evaluation by the reviewer is not required**
- ☒ **To be admitted to the final examination the thesis requires extensive revision; the revised version must be provided within 6 months and must be re-evaluated by the reviewer (*even not the same*)**

### Specific comments and suggestions [mandatory]

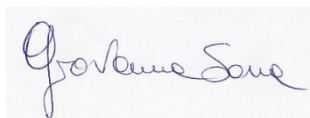
The thesis needs a deep revision.

It has a very confused structure, that makes it very difficult to understand the relevance and originality of the research, and the results.

Here follows a short non-exhaustive list of remarks.

- The thesis is missing of real introductory chapter, a first one that is a summary, to make the reader understand the main topic or the research, the purpose of the work and the workflow of the research.
- Then should follow a state of the art and literature review part, with a focus of the open issues and motivation and structure of the thesis.
- Chapter 1 indeed is not an introduction, but a list of methods and techniques that will be used to develop the thesis work, I suppose.
- Paragraph 1.4 must be moved at the beginning
- Many different statistical methods are mentioned in different paragraphs, and this also is confusing.
- Ch.1.3 could be splitted in a geostatistic part, and in a part that describe methods that make use of digital images, common RGB or Multispectral, in a photogrammetric processing workflow.
- The products (DEM and Orthophotos) then can be used to build indices, and so on.
- Vague definitions should be replaced with more appropriate and technically correct ones (f.i. : ‘Photogrammetry is a technique used to obtain reliable information about physical objects and the environment...’)
- At page 23 in the description of the principal steps of a photogrammetric processing workflow, there is a substantial **big mistake** : the Exterior Orientation of images cannot be ‘achieved by identifying and matching common points (tie points) in overlapping images and using these points to solve or the camera parameters.’  
In fact, E.O. parameters cannot be determined by using tie points only!
- If some parts are already published in a journal (as Ch.2.2) this should be mentioned. (is there any supplementary material ?)
- The Reference lists are in a very weird format : a mix of numbers and alphabetical order. Some documents are missing of true reference (f.i. [8] Alan Agresti. Analysis of Ordinal Categorical Data., in 2.2)
- Last : many typos have been found, starting from the title itself! Please revise the English language.

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**Date and Signature : 17 June  
2025 -**

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