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Review

of doctoral dissertation submitted by **Mr Talal Saeed Hameed, MSc**,
entitled: '*Adoption of sustainable agriculture principles by potato farmers in the south-eastern Poland*'

The review was prepared as requested by the Council of the Faculty of Agrobiotechnology,
the University of Natural Sciences in Lublin
as well as the Dean, Professor Krzysztof Kowalczyk.

The doctoral dissertation was prepared under the guidance of the supervisor, Professor
Barbara Sawicka, and auxiliary supervisor, Dr Dominika Skiba

Topic selection and justification

In pursuit of increasing incomes, industrial production means are used in excess on many agricultural holdings. Frequently, mineral fertilisers applied are only partially taken up by crop plants; the balance undergoes dispersion in the environment causing its degradation. Moreover, crop rotation is more and more often abandoned and substituted by only the most profitable cash crops, as a consequence of which only one or two species are cultivated. Under such conditions, a rapid build-up of weeds occurs accompanied by an increased occurrence of diseases and pests, which makes it necessary to apply an increasingly wider range and a greater amount of chemical control products.

For these reasons, it seems justifiable to search for such husbandry methods which will allow farmers to effectively produce safe food of high quality, using methods which protect and improve the natural environment status, social and economic living conditions of the farmer and his or her family as well as of local communities. This idea is the backbone of sustainable agriculture. Standards of integrated production (IP) of crop plants, implemented on the 1st of January, 2014, have established a modern system of food and animal feed

production which sustainably utilises technological and biological progress in crop plant cultivation, protection and fertilisation, and pays special attention to the protection of the environment and human health.

Potato is one of major species of agricultural plants cultivated all over the world, including Poland, and is a staple food in many regions of the world. Therefore, the United Nations announced 2008 as the International Year of the Potato, and the celebrations were meant to increase the role of this vegetable and agriculture in solving global food-related problems (hunger).

In the past, the share of land cropped to potato in Poland was 20% of all the area under crop plants. The recent years have seen a decline in the area cropped to potato which at present represents approximately 3%. Also, the number of farms on which potatoes are grown is on the decline but there are more and more holdings which specialise in potato production and whose levels of crop protection and fertilisation are very high. However, potatoes produced on both types of farms and offered on the market, are unrecognisable because they are neither labelled nor certified, excluding a narrow range of organically produced potato. As a result, there is an urgent need to introduce a system of integrated potato production making it possible to distinguish potatoes produced in this system which will be safe to consume and produced while respecting the agricultural environment.

Taking the above into consideration, I believe the title of the dissertation, '*Adoption of sustainable agriculture principles by potato farmers in the south-eastern Poland*,' fully reflects the research topic and properly informs about the study subject and scope. Moreover, the topic of the dissertation is apt and up-to-date, and has both cognitive and practical value. Also, the succinct and well-phrased title of the dissertation adds to its value, which should be considered an achievement of both the doctoral candidate and his supervisor.

Dissertation structure

The doctoral dissertation submitted for review by Mr Talal Saeed Hameed, entitled as indicated above, consists of 249 pages of standard typewritten text (including tables, figures, **References, Abstract and Appendices**). From the formal perspective, the dissertation is appropriately structured, contains eight main chapters with logical progression of thought (**Introduction, Review of the literature, Material and methods, Research conditions, Results and discussion, Conclusions, Recommendations, References**) as well as four chapters in the form of appendices (**List of tables, List of figures, Appendices, List of appendices**), chapters 2, 3, 4 and 5 being further divided into sub-chapters. Such a structure

improves readability, makes it easier to analyse the content and follows the generally accepted structure of research papers and doctoral dissertations. The dissertation is carefully written and no substantive objections can be made.

Choice and Utilisation of Literature

A total of 517 source materials were cited in the dissertation, all of them relevant in terms of subject area (the number of sources is truly impressive for this type of work) The references cited include research papers, chapters from monographs, books and popular science literature. It should be stressed that many references are recent publications, including foreign language literature, which indicates that the candidate has a good knowledge of and is familiar with the current literature relevant to the subject matter of the research.

A few aspects of the dissertation do leave some scope for improvement (these issues should be addressed before preparing the work for publication). They are as follows:

- Is it absolutely necessary to cite implementation works and methodological guides (item 74, 83, 96, 97, 188, 189, 234, 235, 236, 237, 272, 273, 274, 473, 495) in the section **Review of the literature**? Removal of the aforementioned works from the cited works list would not affect the substantive value of this chapter in any way.
- In **Review of the literature**, pp. 34³⁰, 38²⁰, 39⁵, 40²⁶, there is a mistake in the surname of the author cited: '[Matuszczak, 2011a 2011b, Matuszczak & Mościcki, 2002]' – the spelling should be Matuszak; item 272, 273 and 274 in **References** should be changed accordingly.
- The author cites '[GUS, 2015, FAO, 2009]' in **Review of the literature**, but in **References** there are two items corresponding to this source. As both have the same publication year, it is impossible to decide which one is the actual reference – hence, the need to add the letter 'a' and 'b' after the publication year.
- In the section **Material and methods**, sometimes too many sources are cited per single statement/sentence, e.g. on page 92^{25, 26} and 27 (8 items). It is customary not to cite more than five references in a sequence.
- The following references, cited in the main text, have not been included in the section **References**: Duffy (2001), Julia (2007), Kapsa & Osowski (2011, 2012), Kapsa (2014), Trawczyński & Lutomirska (2014), Cwalina-Ambroziak (2002), Kapsa (2002), Petros (2010), Lavison (2013), Bonny and Vijayaragavan (2001), Kaguongo et al. (2010), Al-Shadiadeh et al. (2012), Okunlola et al. (2011), Oktay et al. (1995), Zegeye and Haileye (2001), Źarski and Dudek (2003), Kozłowska-Szczęsna (1991), Bera et al. (2011), Hansen

(1982), Koźminski and Kalbarczyk (1999), Radzki et al. (2010), Okojie and Onemolease (2009), Sterve (2010).

- The following items included in the section **References** cannot be found in the remaining parts of the dissertation:

- Ahmad N., Fadhil M, Abu-Zahrah T.R. 2012. Factors influencing adoption of protected tomato farming practices among farmers in Jordan valley. *World Applied Sciences Journal* 17(5),572-578.
- Alqahtani S., Wamba F.S. 2012. Determinants of RFID Technology Adoption Intention in the Saudi Retail Industry: An Empirical Study. 45th Hawaii International Conference on System Sciences, Maui, Hawaii, January 4-7, IEEE Computer Society, 2-6.
- Armstrong K.P. 2010. *Principles of Marketing*, Prentice Hall Publishers. New York, 157-159. ISBN 0136912478.
- Omonona, B., Oni, O., and Uwagboe, O. 2005. Adoption of improved Cassava varieties and its impact on Rural Farming Households in Edo State, Nigeria". *Journal of Agriculture and Food Information* 7(1), 40-45.
- Potatoes marketing. Status and prospects. Market analysis. 2013. Ed. IAFE-NRI, AMA, MARD, 40, 1-24.
- Regulation of the Minister of Agriculture and Rural Development dated 11 March 2010. On minimum standards (Journal of Law No. 39, item. 211) and changes in the regulation in force since 2012 under the Regulation of the Minister of Agriculture and Rural Development dated 21 May 2012 amending Regulation on minimum standards, *Journal of Laws of 2012.*, position 746. (in Polish).
- Robert C., Spencer J. 2003. Ozone as a post-harvest treatment for potatoes. A Thesis Submitted to the College of Graduate Studies and Research in Partial Fulfillment of the Requirements for the degree of Master of Science in the Department of Plant Sciences University of Saskatchewan Saskatoon, SK, Canada, 4-7.

- Minor editorial mistakes have been found: the words 'Figure' and 'Table' placed in brackets are typed either as an abbreviation or full word (Fig., Figure) (Tab. Table), items in **References** are not in alphabetical order, different conventions of referencing style are used, e.g. Nie and Singh (2003), Wszelaczyńska & Pobereżny (2011), there are mistakes in authors' surnames, e.g. 'Gregor & Jones (1999)' in **References** versus 'Gregorand & Jones (1999)' in the body.

Materials and Methods

In the section **Material and methods**, the author clearly presented methodological assumptions of the studies he had carried out. Surveys were conducted from 2014 to 2016. A representative group of 152 potato producers in the Lublin Region and the Mazowsze Region completed them, the number being sufficient to analyse the results using statistical methods and draw correct conclusions.

Analysis of the content of this chapter yielded the following questions:

- Would it not be better to combine section 4, **Research conditions**, and section 3, **Material and methods**, to obtain one coherent chapter?
- What criterion did the author of the study and dissertation use when he chose to conduct surveys on 140 farms (located in a total of 19 districts) in the Lublin Region and on only 12 farms (all of them in Koziénice Commune located in Koziénice District). In my opinion, at least two more communes in Koziénice District (Sieciechów Commune and Gniewoszków Commune) should have been included in the study as they are administrative neighbours of the Lublin Region.

Results and discussion

In the next section of the dissertation, **Results and discussion**, subject matter is arranged chronologically, and presented in a consistent and in-depth manner. The chapter is the principal part of the dissertation and an original accomplishment of the author, Mr Talal Saeed Hameed. The section includes 60 pages and is divided into 8 subchapters.

The author analyses the results of his research in great detail. They are correctly described and skilfully interpreted, which indicates that the author has been well prepared for the analysis of the results of his research. Moreover, the candidate in an appropriate and accurate manner referred his findings to the results reported in the literature he cited, which is indicative of the candidate's good knowledge of the issues he researched.

Conclusions

The author of the dissertation summarised it by drawing 11 conclusions which contain the most important results of the study. They are logical, succinct, and fully correspond to the objective of the study. Furthermore, the author put forward three pertinent recommendations to be directly used in agricultural practice.

Summary and evaluation of the dissertation as a whole

In sum, the doctoral candidate conducted time-consuming studies which are interesting in terms of practical application. Numerous references and exhaustive results which were accurately interpreted indicate that the author is a hard-working and mature researcher. The dissertation is written using appropriate English, and careful and clear structure of the work deserves recognition. The dissertation as a whole indicates that Mr Talal Saeed Hameed successfully completed his assignment, and the dissertation makes a valuable original contribution to science and practice. The suggestions outlined above are in large part a matter of discussion and editorial in character and in no way affect the substantive and scientific quality of the doctoral dissertation.

Final conclusion

In summary, I affirm that the doctoral dissertation by Mr Talal Saeed Hameed, entitled '*Adoption of sustainable agriculture principles by potato farmers in the south-eastern Poland,*' submitted to me for evaluation meets all the standards required to justify the award of a PhD, that is, the requirement of originality of results obtained in surveys, appropriate statistical analysis, exhaustive interpretation and discussion of the results as well as logical and appropriate inference. Moreover, the studies conducted are up-to-date and contribute direct guidelines for practical application in agriculture. Taking the above into consideration, my evaluation of the dissertation is unequivocally positive and, following Art. 13 of the *Act on Academic Degrees and Academic Title and Degrees and Title in Art of 14 March 2003* (Dziennik Ustaw [Journal of Laws] No. 65 item 595, as amended), I recognise it as an original solution of a scientific problem in the field of Agricultural Sciences, in the discipline of Agronomy.

On the basis of what is stated above, I recommend to the High Council of the Faculty of Agrobioengineering, the University of Natural Sciences in Lublin, that Mr Talal Saeed Hameed is granted permission to proceed with the public defence of his dissertation.

Siedlce, 26 May 2017



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