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Перевірка
професійного рівня



**PROFICIENCY TESTING PT.UA.1.3.2016
ANIMAL FEEDING STUFFS (QUALITY)
PROFICIENCY TESTING REPORT
ROUND 18 JUNE 2026**

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2. SUMMARY

2.1. The purpose of proficiency testing in animal feeding stuffs is to demonstrate the laboratory's competence (as described in ISO/IEC 17043:2023[1]) and improve the reliability of test results.

2.2. This proficiency testing involves the use of inter-laboratory comparisons to confirm the performance of individual laboratories' abilities and/or identify areas of improvement.

2.3. This is the final report on the PT.UA.1.3.2016 Round 18 held in May - June 2026. This report is issued according to ISO/IEC 17043[1] and PT.UA.1.3.2016 Round 18 Programme. The report is issued in two languages – Ukrainian and English. English should be considered as the basic language of the report. Both versions of this report can be found at: <http://www.metrologyservice.com.ua>.

2.4. A total of 8 participants have reported. Their results are presented in the next clauses.

2.5. Technical experts list and/or subcontractors for this round can be provided to the Participant by request.

2.6. Any calculations, formulas, raw and intermediate data used in this round can be provided to the Participant by request, except confidential information about other participants and information that may contain commercial secret.

2.7. If the Participant does not agree with the proficiency testing results or has any comments on the Provider's work, one can submit a complaint or appeal within 10 days. More information on the complaint procedure can be found at <https://www.metrologyservice.com.ua/> or by contacting the Provider.

2.8. The Provider declares that all results presented in this report are confidential. Each participant is identified by a unique number assigned to them based on their registration application for each round of the program separately. This number is confidential information and may only be disclosed at the participant's request.

2.9. Where applicable, the metrological traceability of assigned values is ensured, as confirmed by the use of measurement equipment properly calibrated in accordance with current EA and NAAU policies.

2.10. The uncertainty of the assigned values (for quantitative evaluation) may be provided upon the participant's request.

2.11. All users of this report are prohibited from copying or reproducing it, in whole or in part, without the written consent of the Provider.

2.12. Provider is accredited by NAAU in accordance with the requirements of ISO/IEC 17043. The list of parameters is specified in the scope of accreditation, which can be found on the website <https://www.metrologyservice.com.ua/> or obtained upon request from the Provider.

3. GENERAL PROTOCOL FOR PROFECIENCY TESTING

3.1. MANAGEMENT SYSTEM.

3.1.1. The functioning management system of Metrology Service Ltd. (further - Provider) complies with ISO/IEC 17043[1] requirements and covers all aspects of proficiency testing (further - PT) for all proficiency tests.

3.2. SAMPLES PREPARATION, HOMOGENITY AND STABILITY

3.2.1. Provider has used IIII 7.3.1 procedure and appropriate technical experts and contractors for the samples' selection, production, homogenization and division designs that is proved to be satisfactory for the purposes of PT programme PT.UA.1.3.2016 Round 18. Details of test material preparation and homogenization are not published in the report, though can be provided to the Participant by request. Tests, required to prove (validate) homogeneity and stability of samples were performed by competent contracting laboratories according to [1].

3.2.2. Participants may contact the Provider to request details of test material selection, preparation, homogenization and division of those test material samples, for which they tested in PT. Such information can be provided to the Participant in confidence and only if it cannot compromise other Participants and/or is not a commercial secret.

3.2.3. During sample preparation, all necessary procedures (where applicable) were performed, such as the removal of impurities. Sample preparation report can be provided upon request.

3.3. DISPATCH AND RECEIPT OF SAMPLES

3.3.1. Samples of test material – **Meat and bone meal for feed** were dispatched 18.05.2026 according to schedule of proficiency testing programme PT.UA.1.3.2016 Round 18

3.3.2. Each produced and identified sample was hermetically sealed.

3.3.3. A total of 8 participants received one sample. Results were returned from 8 participants.

3.3.4. The samples were shipped to participants via the commercial delivery service “Nova Poshta” LL, the delivery to abroad was done by courier delivery.

3.4. FOLLOW-UP SERVICES

3.4.1. If a participant wishes to obtain advice/consultation on any aspect of their performance, one should contact the Provider. Provider can (with agreement with Participant) pass on the Participant's inquiry to a technical expert and/or contracting laboratory.

3.4.2. Surplus samples from this round are available for sale as certified reference materials (CRM) with the certified values and uncertainties. Please e-mail Provider for details.

3.5. PERFORMANCE ASSESSMENT

3.5.1. Provider expressed Participant's results as traditional z-scores according to [1].

3.5.2. The assigned value for each analyte was calculated as the robust mean of the trial data using Huber H15 method [2] or Algorithm A variation, Annex C.3 [4].

3.5.3 The target standard deviation for each analyte was chosen from either the appropriate form of the Horwitz equation, method trial standard deviation (if stated in the method from inter-laboratory comparisons), standard deviation from the previous trials (PT rounds), or the robust trial standard deviation, after the removal of outliers. The choice was made using current industry practices used in other collaborative trials and proficiency testing schemes.

3.5.4. z-Scores were deemed satisfactory if $|z| \leq 2$. z-Scores were deemed questionable if $2 < |z| \leq 3$ (marked yellow in tables). If $|z| > 3$, the results were considered to be unsatisfactory (marked red in tables). The calculations were made according to [1,3,5]. Provider recommends corrective actions if $|z| > 3$ and preventive actions if $2 < |z| \leq 3$.

3.5.5. Only 3.45% (2 results) of all results in this round are considered to be unsatisfactory. All results in the previous round are considered to be satisfactory.

3.5.6. Participant №1 stated the result for «Nitrogen and crude protein content, % (Expressed as a mass fraction of the product as received)» according to «ISO 5983-1» method instead of the «ISO 5983-2:2009» proposed by the Provider. This result was assessed by the Provider but was not taken into account when calculating robust mean and robust SD.

3.5.7. Participant №3 stated the result for «Crude fat content, % (Expressed as a mass fraction of the product as received)» according to «ДСТУ ISO 6492:2003(без гідролізу)» method instead of the «ГОСТ 13496.15-97 п.4» proposed by the Provider. This result was assessed by the Provider but was not taken into account when calculating robust mean and robust SD.

3.5.7. Participant №7 stated the results for: «Moisture content,%» according to «ПІБ 7.2-259» method instead of the «ДСТУ ISO 6496:2005 (ISO 6496:1999, IDT)» proposed by the Provider; «Crude fat content, % (Expressed as a mass fraction of the product as received)» according to «ПІБ 7.2-118» method instead of the «ГОСТ 13496.15-97 п.4» proposed by the Provider; «Crude ash content, % (Expressed as a mass fraction of the product as received)» according to «ПІБ 7.2-04» method instead of the «ДСТУ ISO 5984:2004» proposed by the Provider; «Nitrogen and crude protein content, % (Expressed as a mass fraction of the product as received)» according to «ПІБ 7.2-126» method instead of the «ISO 5983-2:2009» proposed by the Provider; «Peroxide value of fat, % I₂» according to «ПІБ 7.2-04» method instead of the «ДСТУ 4695:2006» proposed by the Provider. These results were assessed by the Provider but were not taken into account when calculating robust mean and robust SD.

3.5.8. Participant №9 stated the result for «Nitrogen and crude protein content, % (Expressed as a mass fraction of the product as received)» according to «ДСТУ 7169:2010» method instead of the «ISO 5983-2:2009» proposed by the Provider. This result was assessed by the Provider but was not taken into account when calculating robust mean and robust SD.

4. DATA SUMMARY

Method	ДСТУ ISO 6496:2005 (ISO 6496:1999, IDT)	ГОСТ 13496.15-97 п.4	ДСТУ ISO 6492:2003 (ISO 6492:1999, IDT)	ДСТУ ISO 5984:2004	ISO 5983-2:2009	ДСТУ ISO 6655:2004 (ISO 6655:1997, IDT)	ДСТУ 8048:2015	ДСТУ 4695:2006
	Moisture content, %	Crude fat content, % (Expressed as a mass fraction of the product as received)	Fat content, % (Expressed as a mass fraction of the product as received)	Crude ash content, % (Expressed as a mass fraction of the product as received)	Nitrogen and crude protein content, % (Expressed as a mass fraction of the product as received)	Soluble protein content after treatment with pepsin in dilute hydrochloric acid, %	Acid value of fat, mg KOH/g	Peroxide value of fat, % I ₂
No of Results	8	7	6	8	8	5	8	8
No of Results z >3	0	0	0	0	0	1	1	0
No of Results z >3, %	0,000	0,000	0,000	0,000	0,000	20,000	12,500	0,000
Mean	2,433	12,656	13,657	23,983	58,533	49,278	3,545	0,025
Min	2,150	12,480	13,020	23,810	57,000	42,820	1,960	0,019
Max	2,650	12,810	13,960	24,120	59,670	51,280	8,630	0,040
SD	0,171	0,139	0,336	0,109	0,742	3,642	2,313	0,009
Median	2,450	12,680	13,765	24,000	58,640	51,010	2,475	0,020
Robust mean (assigned value)	2,463	12,640	13,729	24,008	58,642	50,519	3,057	0,020
Robust SD	0,153	0,145	0,182	0,089	0,135	0,963	1,253	0,0002
SD from method (Tr.SD)	N/A	0,332	N/A	0,19	1,21	2,23	N/A	N/A
SD from Horwitz eq.	0,086	0,345	0,370	0,490	0,766	0,711	0,146	N/A
Target SD	0,110	0,345	0,370	0,490	1,210	2,230	1,253	0,012
Source of target SD of PT	Trial SD	Horwitz	Horwitz	Horwitz	Method Tr SD	Method Tr SD	Trial SD	Trial SD

5. RAW DATA

Method	ДСТУ ISO 6496:2005 (ISO 6496:1999, IDT)	ГОСТ 13496.15-97 п.4	ДСТУ ISO 6492:2003 (ISO 6492:1999, IDT)	ДСТУ ISO 5984:2004	ISO 5983-2:2009	ДСТУ ISO 6655:2004 (ISO 6655:1997, IDT)	ДСТУ 8048:2015	ДСТУ 4695:2006
Laboratory number	Moisture content, %	Crude fat content, % (Expressed as a mass fraction of the product as received)	Fat content, % (Expressed as a mass fraction of the product as received)	Crude ash content, % (Expressed as a mass fraction of the product as received)	Nitrogen and crude protein content, % (Expressed as a mass fraction of the product as received)	Soluble protein content after treatment with pepsin in dilute hydrochloric acid, %	Acid value of fat, mg KOH/g	Peroxide value of fat, % I ₂
1	2,15	12,81	13,81	24,10	59,67		2,73	0,02
2	2,45		13,84	23,93	58,79		2,16	0,020
3	2,32	12,79	13,96	24,03	58,71	51,28	2,10	0,02
4	2,50	12,48	13,59	24,12	58,63	51,01	2,22	0,02
5	2,45	12,60	13,72	23,97	58,65	51,20	1,96	0,02
6								
7	2,30	12,75		23,81	58,58		8,63	0,039
8	2,64	12,48	13,02	24,03	57,00	42,82	5,17	0,04
9	2,65	12,68		23,87	58,23	50,08	3,39	0,019

6. Z SCORES

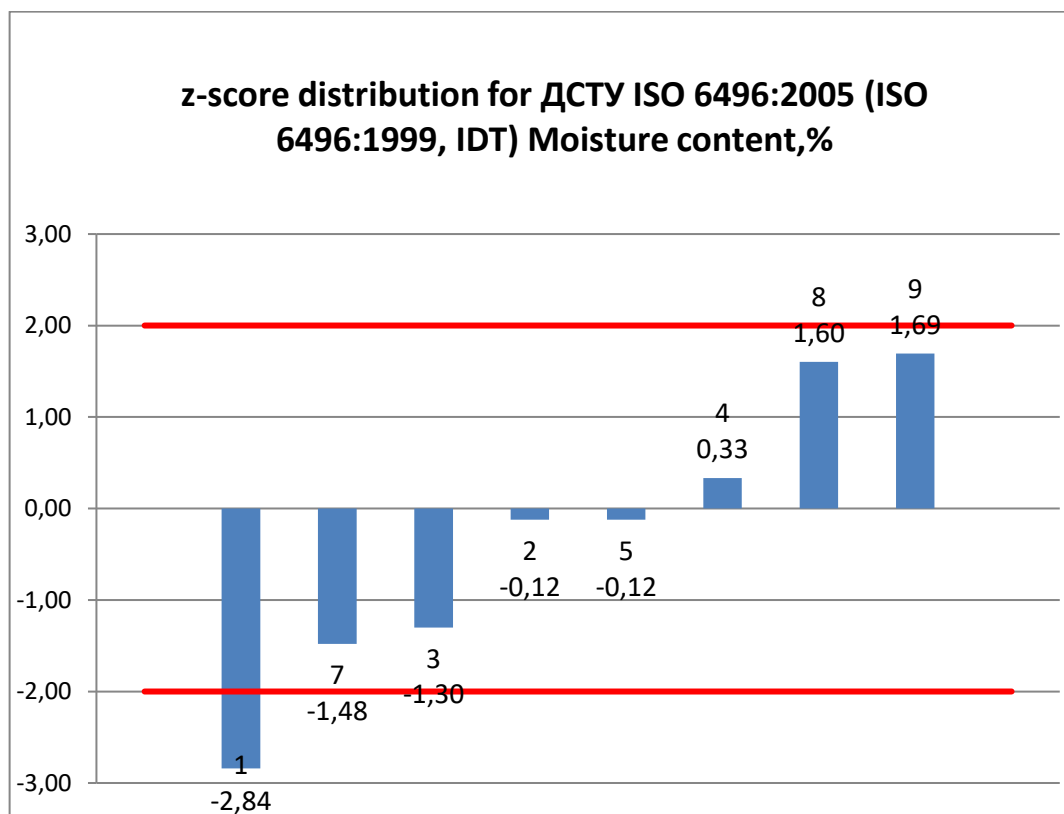
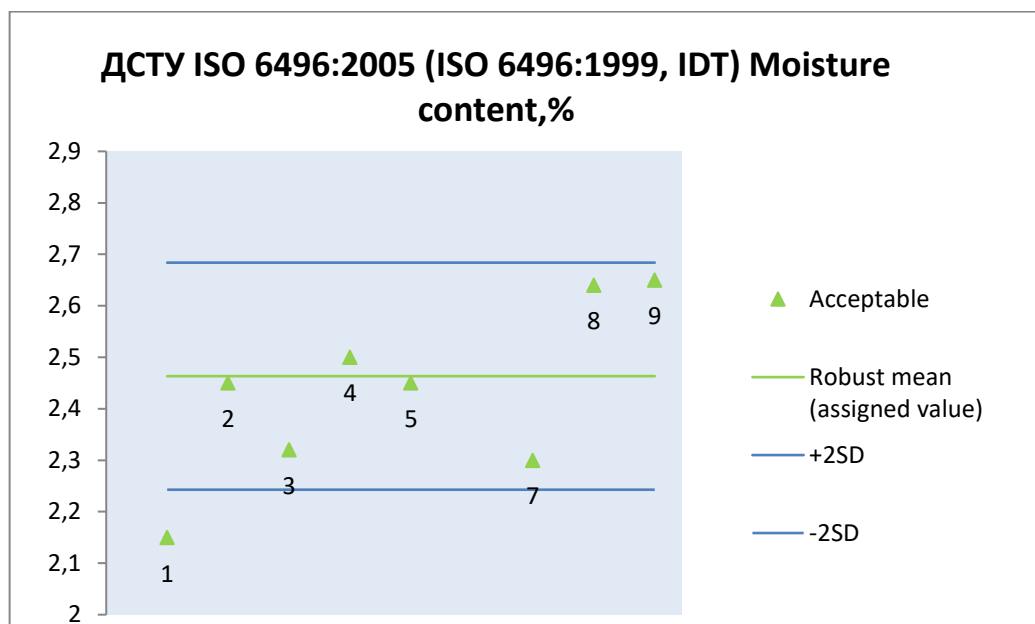
Method	ДСТУ ISO 6496:2005 (ISO 6496:1999, IDT)	ГОСТ 13496.15-97 п.4	ДСТУ ISO 6492:2003 (ISO 6492:1999, IDT)	ДСТУ ISO 5984:2004	ISO 5983-2:2009	ДСТУ ISO 6655:2004 (ISO 6655:1997, IDT)	ДСТУ 8048:2015	ДСТУ 4695:2006
Laboratory number	Moisture content, %	Crude fat content, % (Expressed as a mass fraction of the product as received)	Fat content, % (Expressed as a mass fraction of the product as received)	Crude ash content, % (Expressed as a mass fraction of the product as received)	Nitrogen and crude protein content, % (Expressed as a mass fraction of the product as received)	Soluble protein content after treatment with pepsin in dilute hydrochloric acid, %	Acid value of fat, mg KOH/g	Peroxide value of fat, % I ₂
1	-2,84	0,49	0,22	0,19	0,85		-0,26	0,00
2	-0,12		0,30	-0,16	0,12		-0,72	0,00
3	-1,30	0,43	0,62	0,05	0,06	0,34	-0,76	0,00
4	0,33	-0,46	-0,38	0,23	-0,01	0,22	-0,67	0,00
5	-0,12	-0,12	-0,02	-0,08	0,01	0,31	-0,88	0,00
6								
7	-1,48	0,32		-0,40	-0,05		4,45	1,60
8	1,60	-0,46	-1,92	0,05	-1,36	-3,45	1,69	1,68
9	1,69	0,12		-0,28	-0,34	-0,20	0,27	-0,08

Remarks

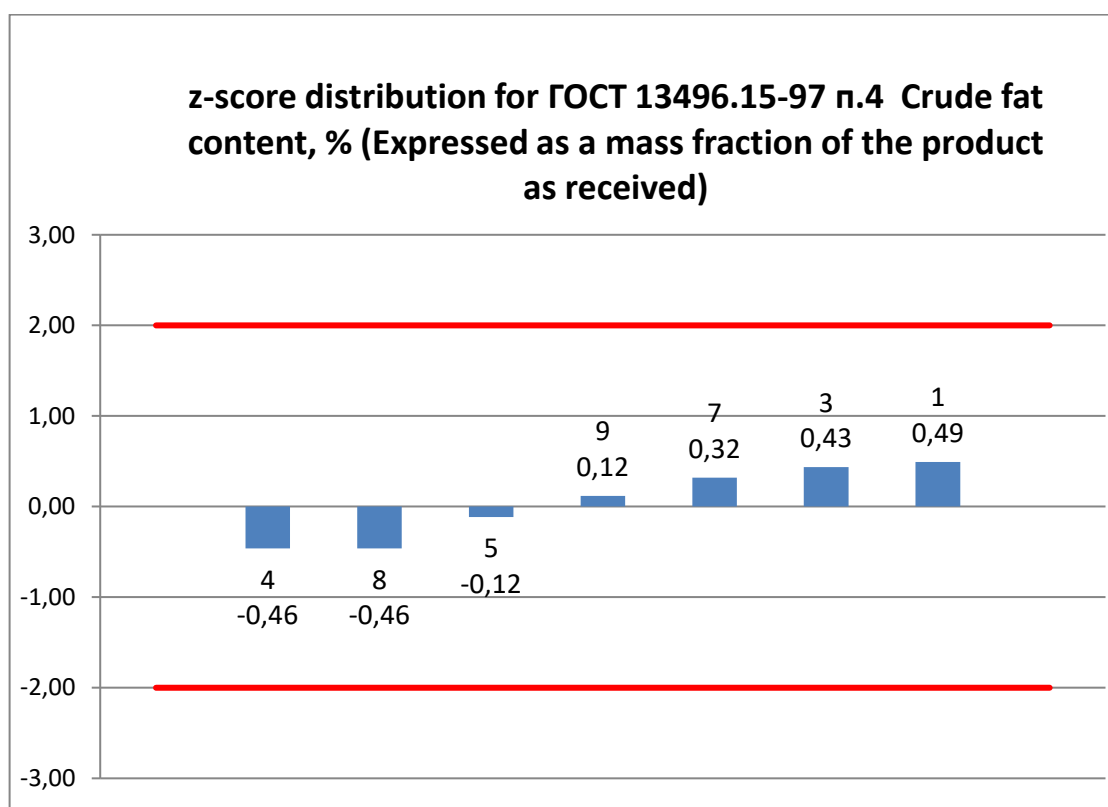
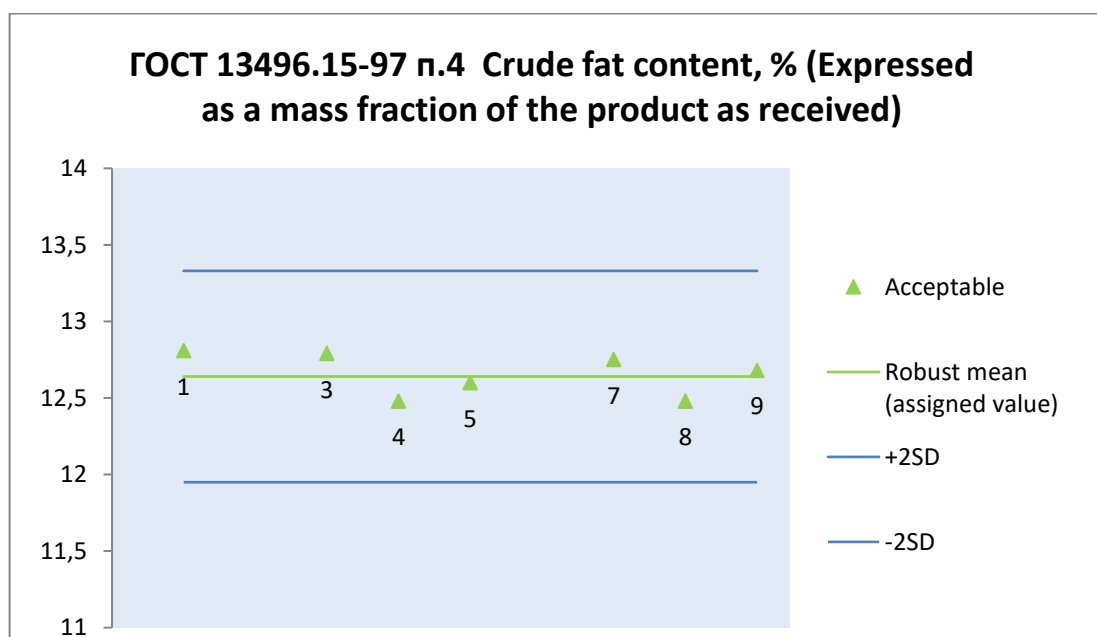
1. Green colored cells contain results that are considered to be satisfactory.
2. Red colored cells contain results that are considered to be not satisfactory.
3. Results that are considered to be questionable are marked by yellow colored cell.
4. Blank cell – results were not reported by the Participant

7. Z SCORE PLOTS AND RESULTS CHARTS.

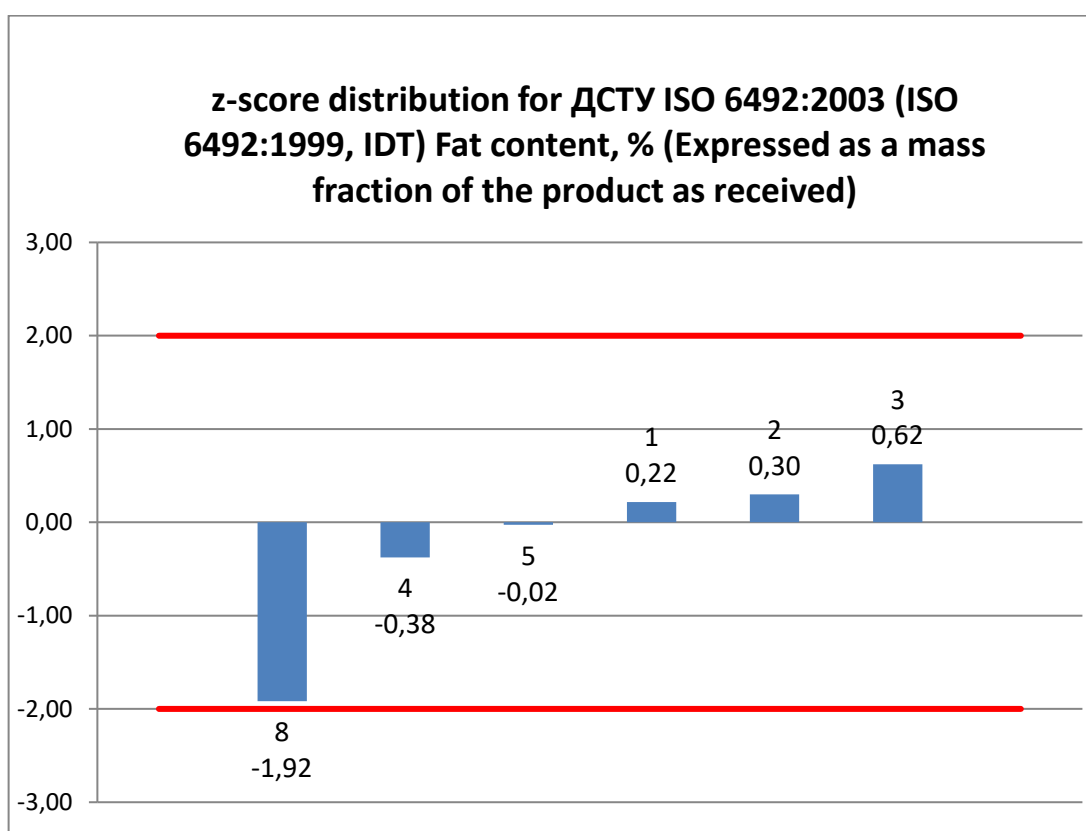
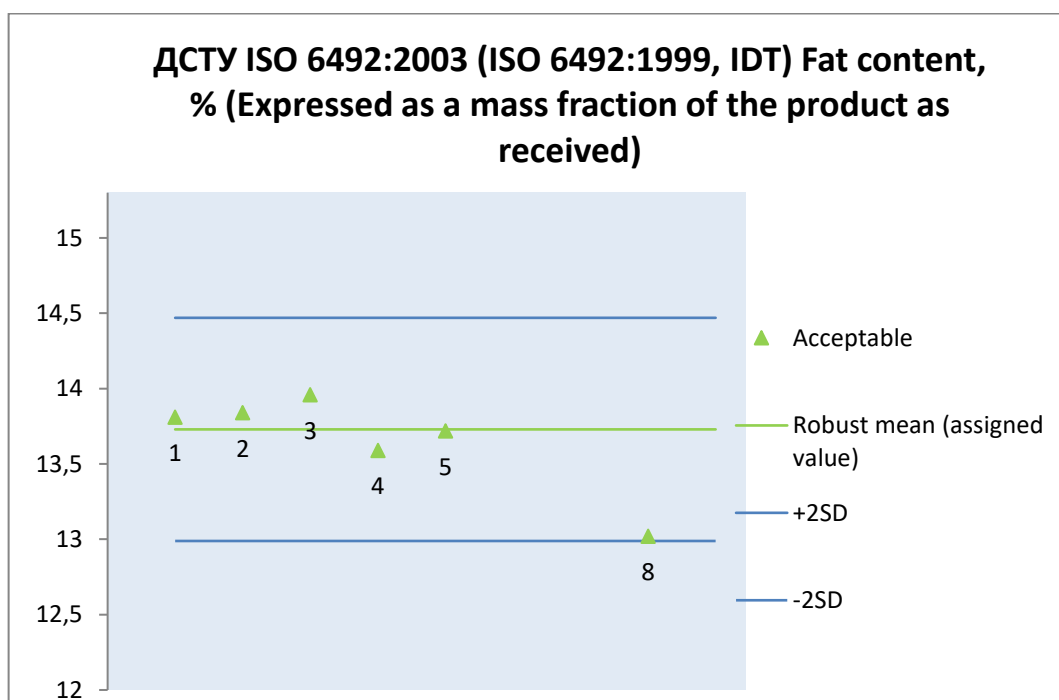
7.1. ДCTY ISO 6496:2005 (ISO 6496:1999, IDT) Moisture content, %



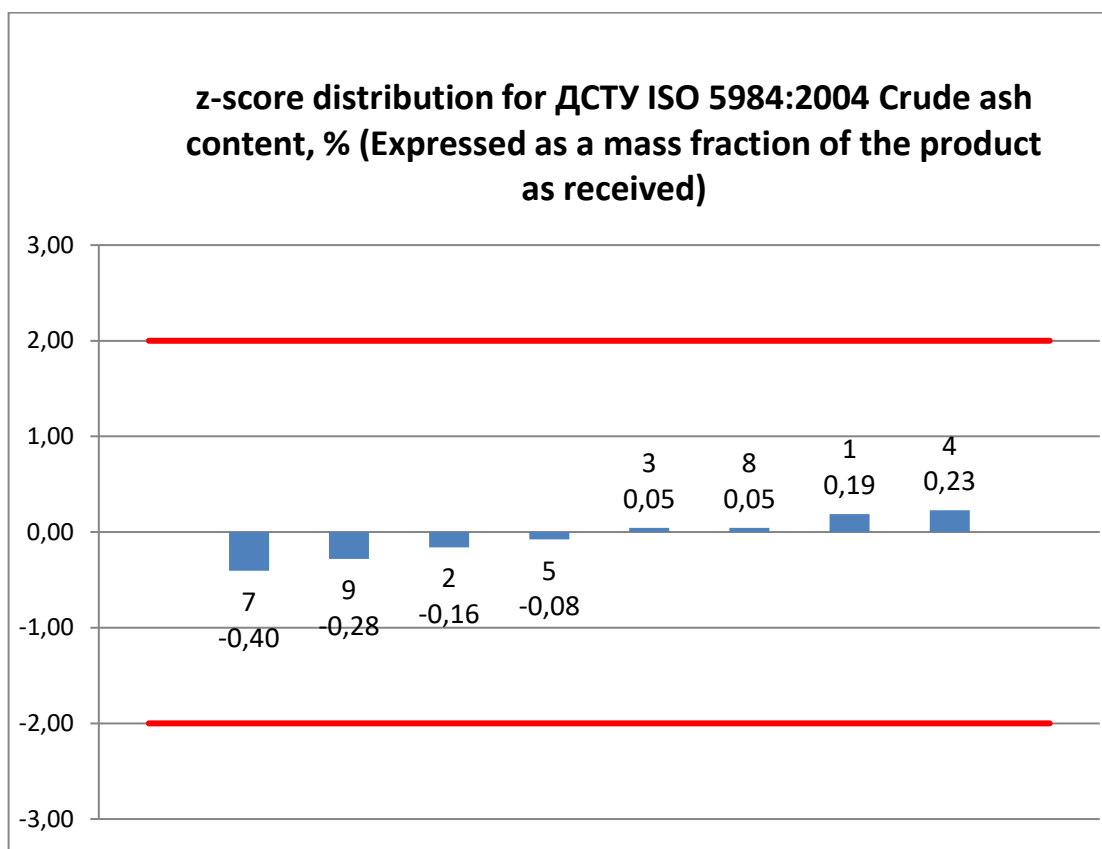
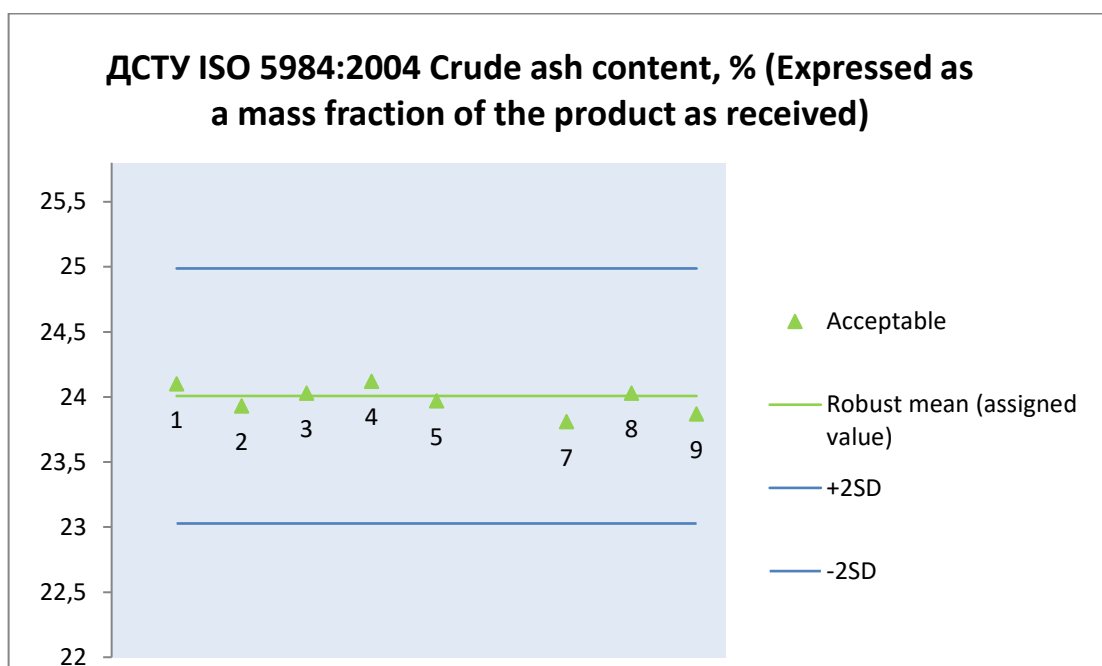
7.2. ГOCT 13496.15-97 п.4 Crude fat content, % (Expressed as a mass fraction of the product as received)



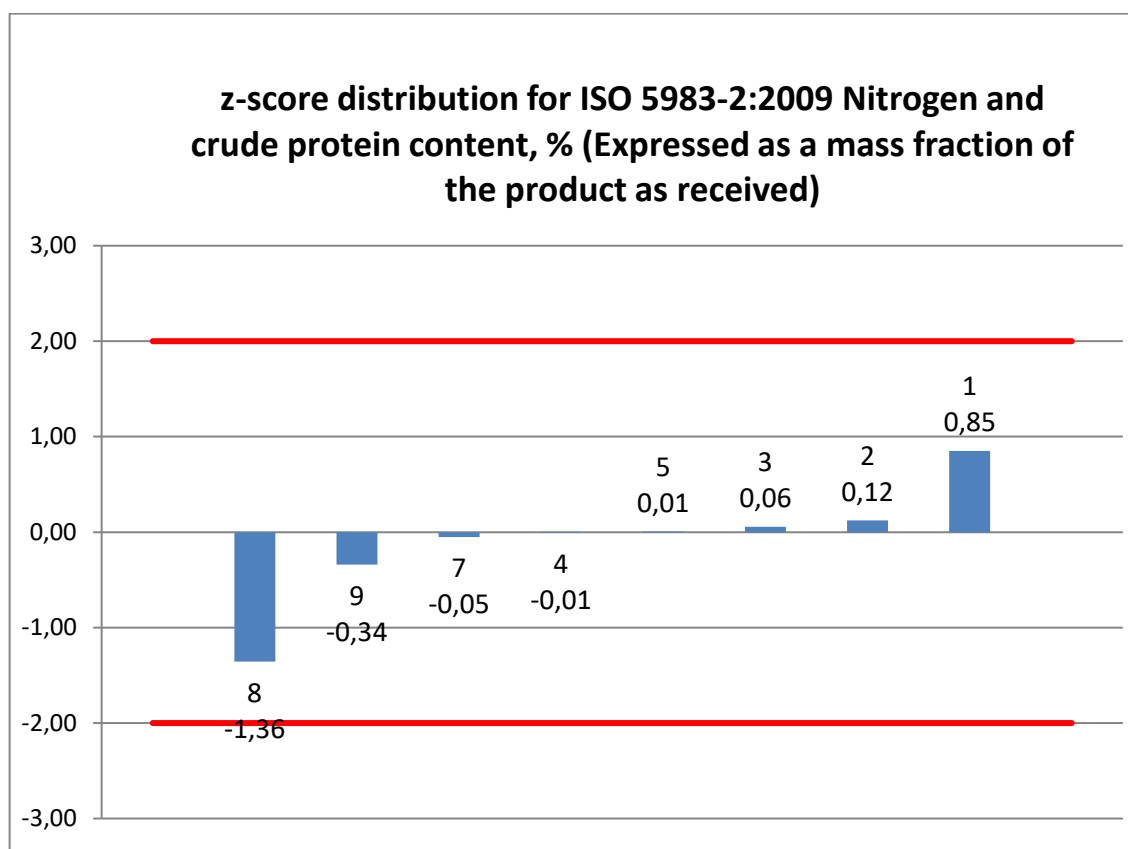
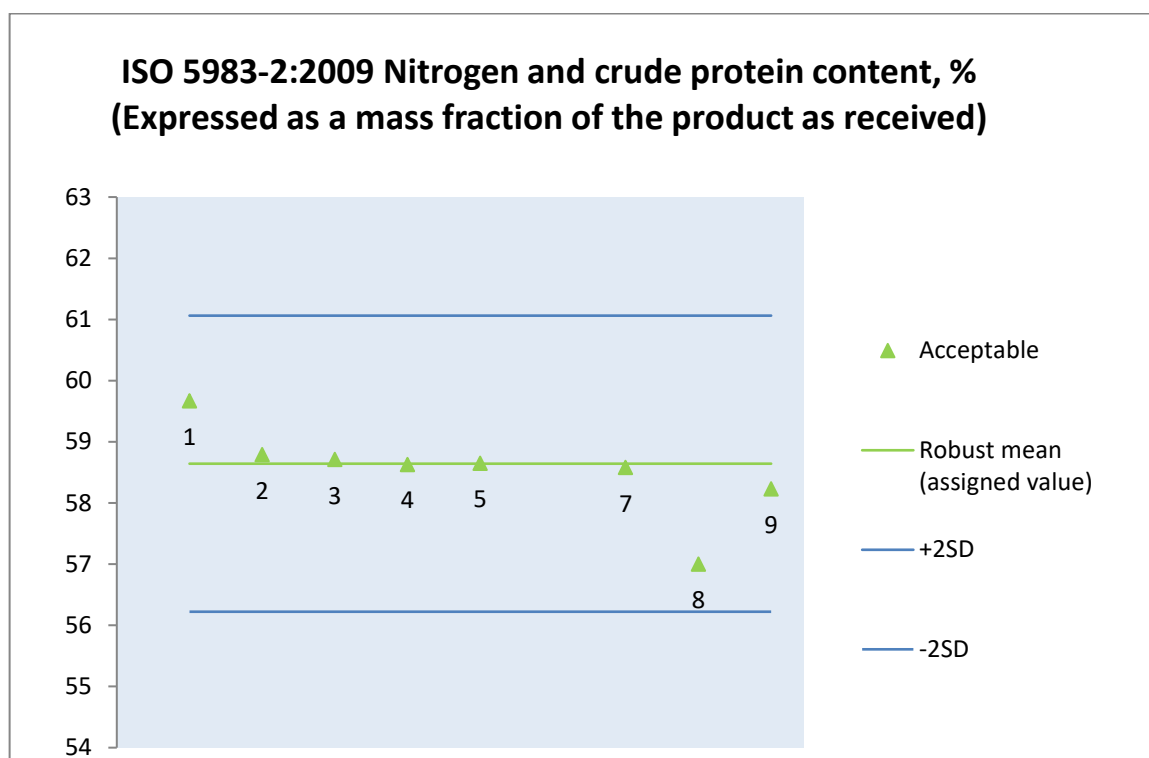
7.3. ДCTY ISO 6492:2003 (ISO 6492:1999, IDT) Fat content, % (Expressed as a mass fraction of the product as received)



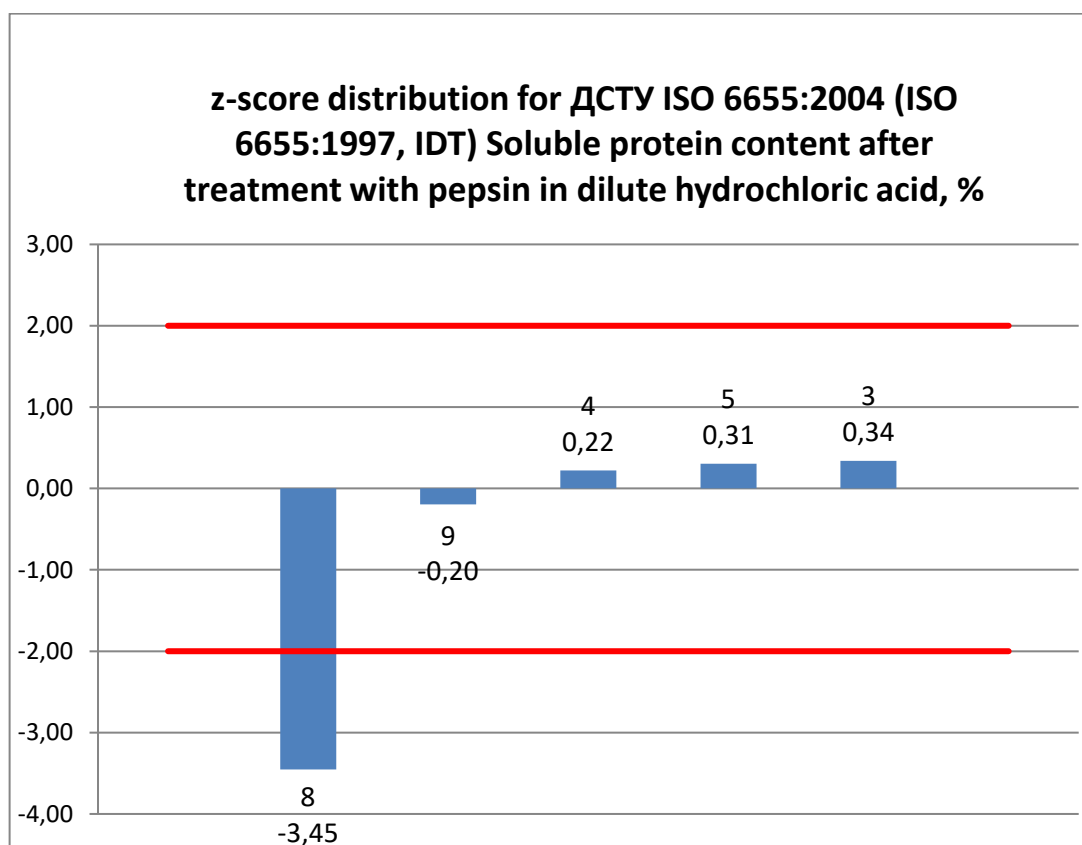
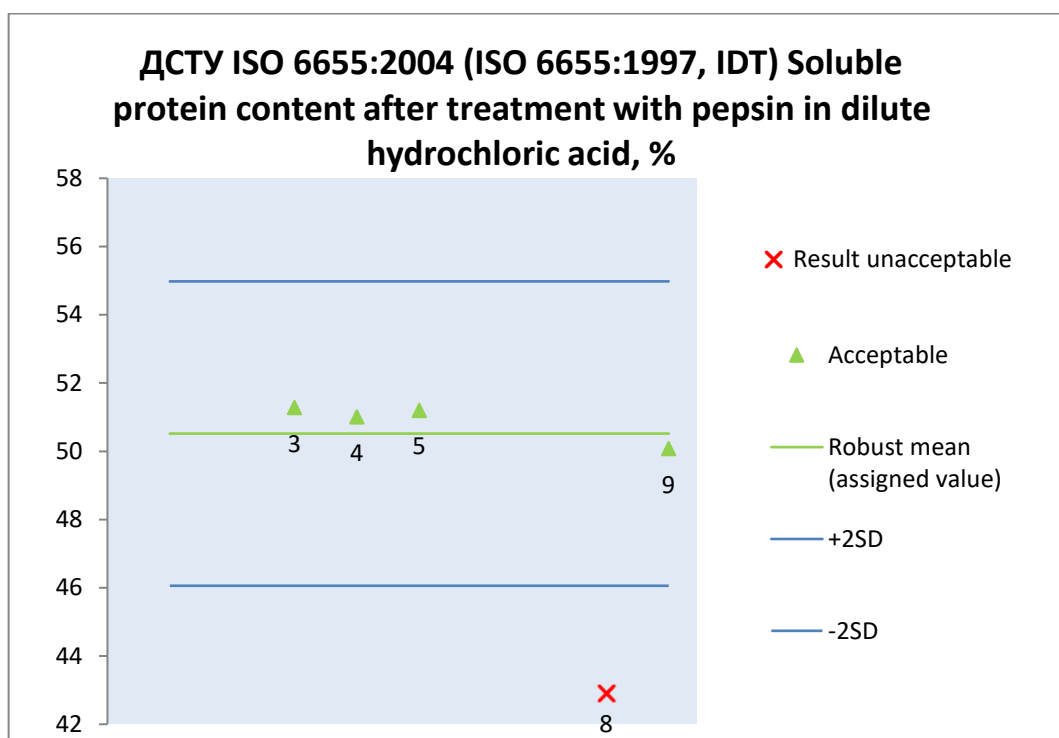
7.4. ДCTY ISO 5984:2004 Crude ash content, % (Expressed as a mass fraction of the product as received)



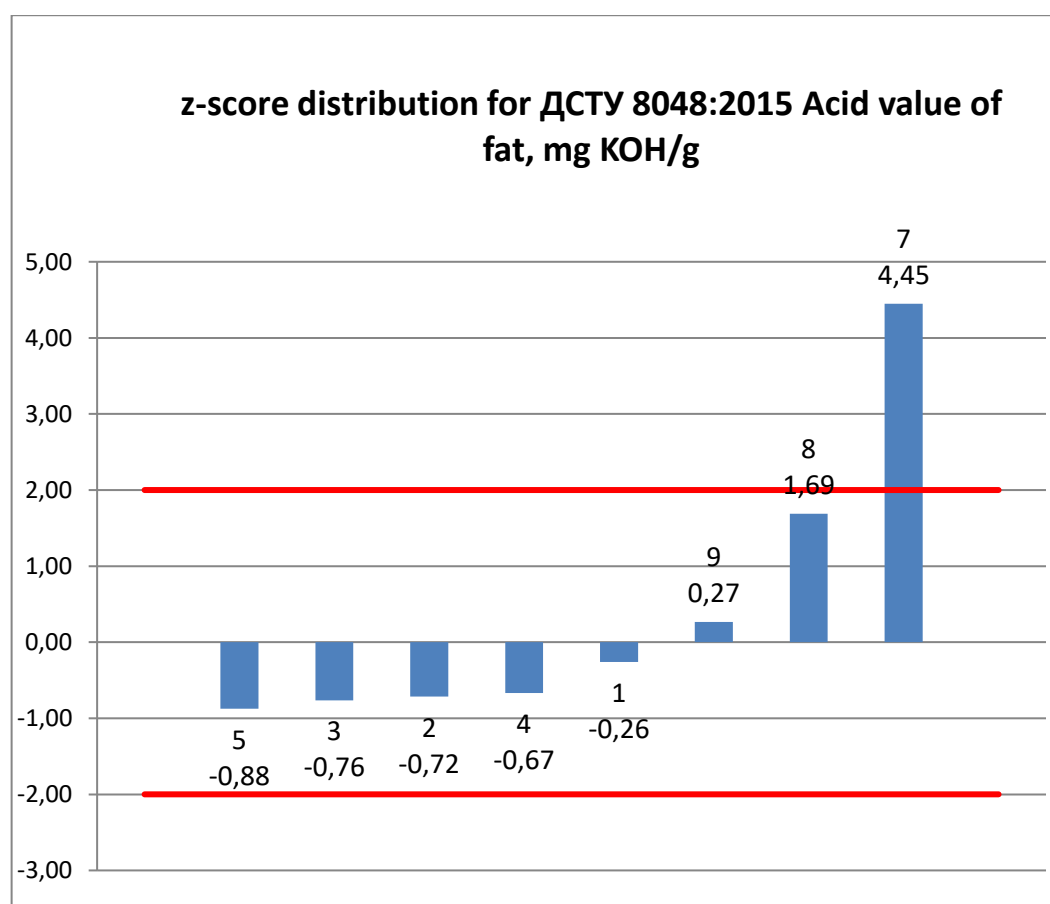
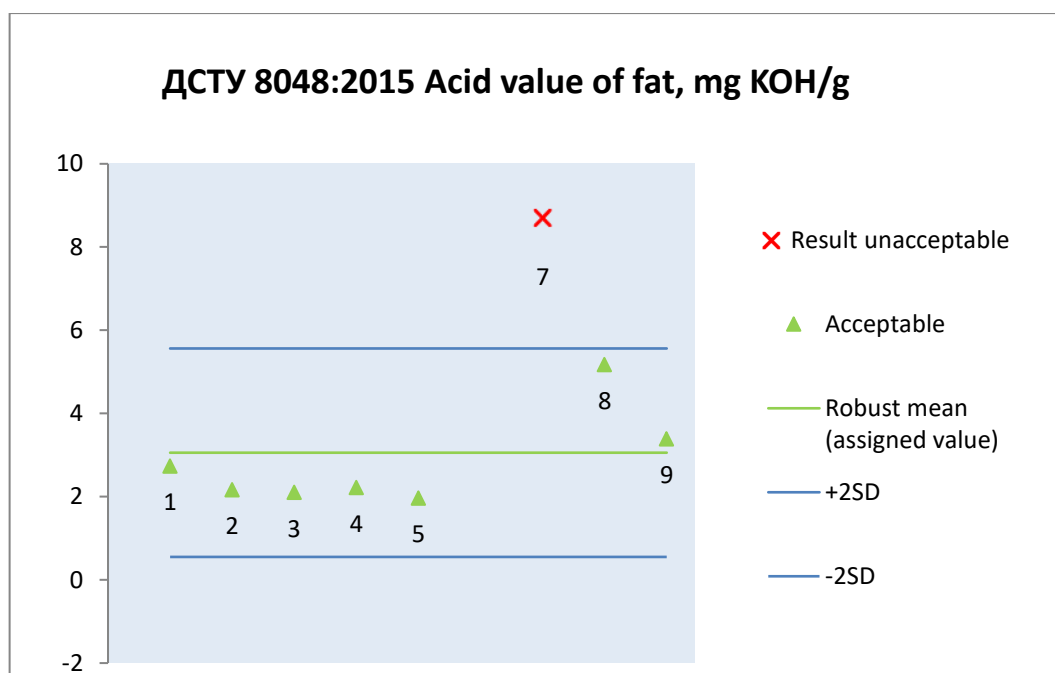
7.5. ISO 5983-2:2009 Nitrogen and crude protein content, % (Expressed as a mass fraction of the product as received)



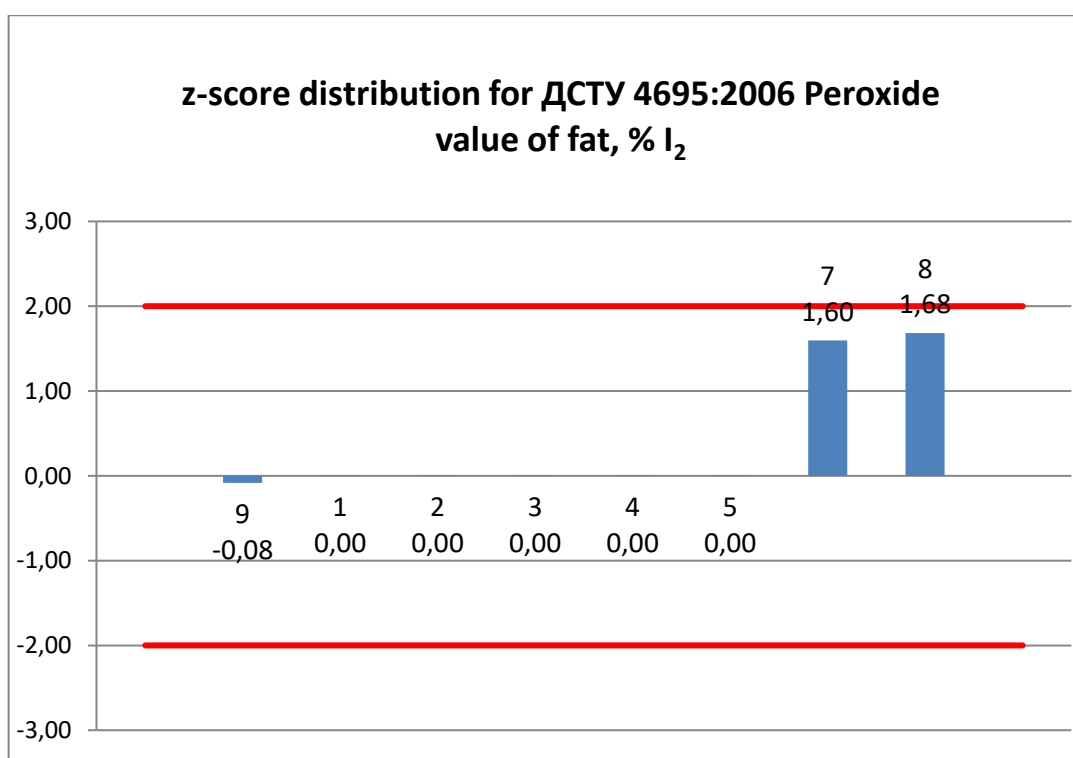
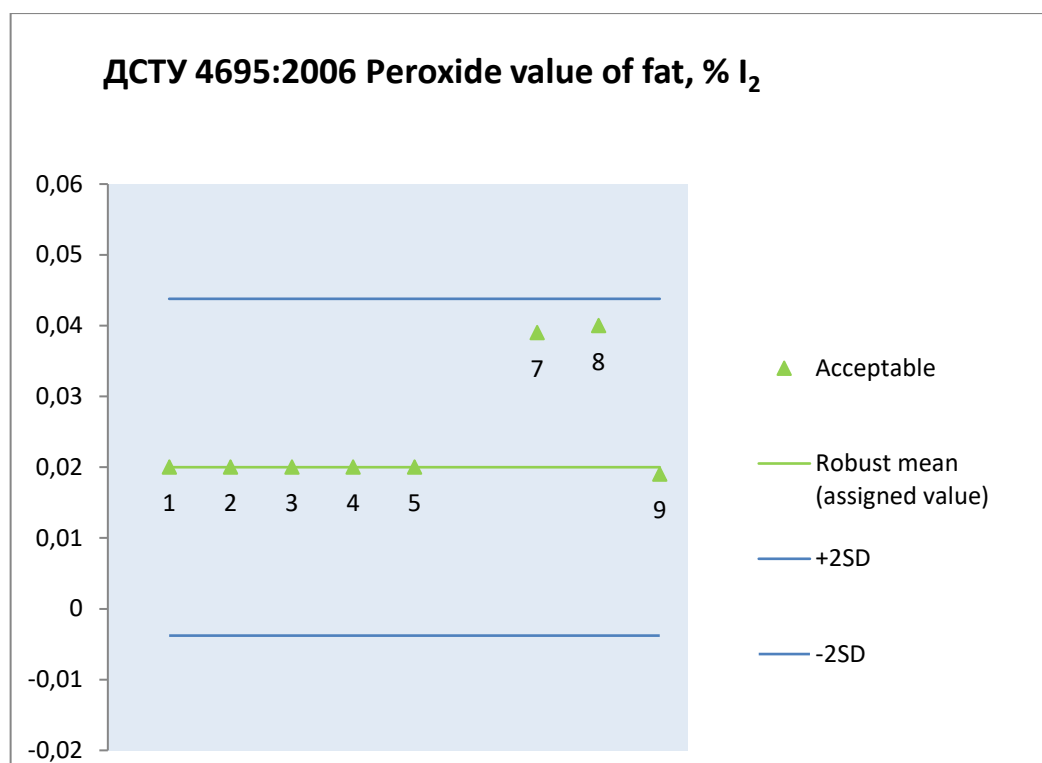
7.6. ДCTY ISO 6655:2004 (ISO 6655:1997, IDT) Soluble protein content after treatment with pepsin in dilute hydrochloric acid, %



7.7. ДСТУ 8048:2015 Acid value of fat, mg KOH/g



7.8. ДСТУ 4695:2006 Peroxide value of fat, % I₂



8. NORMATIVE REFERENCE

1. ISO/IEC 17043:2023 Conformity assessment – General requirements for the competence of proficiency testing providers.
2. Analytical Methods Committee, Robust Statistics – How not to reject outliers Part 1. Basic Concepts, Analyst, 1989, 114, 1693-1697.
3. Fearn, T. and Thompson, M, A new test for ‘sufficient homogeneity’, Analyst, 2001, 126, 1414-1417.
4. ISO 13528:2022 Statistical methods for use in proficiency testing by interlaboratory comparison.
5. ISO Guide 35:2017 Reference materials – Guidance for characterization and assessment of homogeneity and stability.
6. ILAC Discussion Paper on Homogeneity and Stability Testing, April 2008.