

**DEPARTMENT "TECHNOLOGY AND STANDARDIZATION"**

| <b>Scientific projects in progress 2020-2021</b> |                      |   |  |   |                              |
|--|----------------------|---|--|---|------------------------------|
| No   | FULL NAME.<br>leader | Topic name  | Customer and<br>funding source                                 | contract<br>number ,<br>date              | The<br>amount of<br>the deal |
| 1  | Omaraliyeva A.       | Development of technology for the production of gluten-free flour confectionery products using flour from seeds of leguminous crops grown in Kazakhstan   | MES RK   | AP095616<br>22                            | 7 233 263                    |
| 2  | Tarlykov P.V.        | Biomolecular analysis of archaeological remains of sheep from Western Kazakhstan (2020-2021)  | MES RK   | AP089558<br>54                            | 5000000                      |
| 3  | Khastaeva A.Zh.      | Development of technology for cereal "milk" drinks enriched with Omega-3 polyunsaturated fatty acids ( 2021-2023 )  | Ministry of<br>Agriculture of<br>the Republic of<br>Kazakhstan | No. UTB-<br>020/23<br>dated<br>15.09.2021 | 22 381250                    |
| 4  | Tultabayev M.Ch.     | Development of modern technologies for the production of dietary supplements, enzymes, starter cultures, starch, oils, etc. in order to ensure the development of the food industry ( 2021-2023 ) | Ministry of<br>Agriculture of<br>the Republic of<br>Kazakhstan |   |                              |

| <b>Participation of teaching staff in scientific projects 2020-2021</b> |                                  |   |                  |                               |
|---|----------------------------------|---|------------------|-------------------------------|
| No.<br>p/n  | FULL NAME.<br>teaching staff     | Topic name  | Project position | FULL NAME.<br>project manager |
| 1   | Botbayeva Zhanar<br>Turlybekovna | Development of technology for the production of gluten-free flour confectionery products using flour from seeds of leguminous crops grown in Kazakhstan | VNS              | Omaraliyeva<br>A.M.           |

|   |                   |   |                                     |  |
|---|-------------------|---|-------------------------------------|--|
| 2 | Safuani J.E.      | Scientific and technical program "Development of science-intensive technologies for deep processing of agricultural raw materials in order to expand the range and yield of finished products per unit of raw materials, as well as reduce the share of waste in production" // Research work "Development of modern technologies for the production of dietary supplements, enzymes, starter cultures, starch, oils, etc. in order to ensure the development of the food industry" | STS, Ph.D.,<br>Assoc .<br>Professor | Doctor of Technical Sciences, Professor, Corresponding Member NIA RK<br>Tultabaev<br>M.Ch. |
| 3 | Bekturganova A.A. | Scientific and technical program "Development of science-intensive technologies for deep processing of agricultural raw materials in order to expand the range and yield of finished products per unit of raw materials, as well as reduce the share of waste in production" // Research work "Development of modern technologies for the production of dietary supplements, enzymes, starter cultures, starch, oils, etc. in order to ensure the development of the food industry" | STS, Ph.D.,<br>Assoc .<br>Professor | Doctor of Technical Sciences, Professor, Corresponding Member NIA RK<br>Tultabaev<br>M.Ch. |
| 4 | Zhunussova G.S.   | Scientific and technical program "Development of science-intensive technologies for deep processing of agricultural raw materials in order to expand the range and yield of finished products per unit of raw materials, as well as reduce the share of waste in production" // Research work "Development of modern technologies for the production of dietary supplements, enzymes, starter cultures, starch, oils, etc. in order to ensure the development of the food industry" | STS, Ph.D. ,<br>assoc . Professor   | Doctor of Technical Sciences, Professor, Corresponding Member NIA RK<br>Tultabaev<br>M.Ch. |
| 5 | Bekturganova A.A. | Development of technology for grain "milk" drinks enriched with Omega-3 polyunsaturated fatty acids   | STS, Ph.D. ,<br>assoc . Professor   | Khastaeva A.Zh.  |

|   |                  |   |                                   |                  |
|---|------------------|---|-----------------------------------|------------------|
| 6 | Omaraliyeva A.M. | Development of technology for grain "milk" drinks enriched with Omega-3 polyunsaturated fatty acids | STS, Ph.D. ,<br>assoc . Professor | Khastayeva A.Zh. |
|---|------------------|---|-----------------------------------|------------------|

| <b>Scientific publications in international scientific journals Scopus for 2021</b> |   |  |   |                     |  |  |
|---|---|--|---|---------------------|--|--|
| No  | Author (s)  | Article title  | Publication imprint (journal, year, number, page, ISSN)                           | Volume in p.l.      | impact factor                            | Citation Index articles  |
| 1   | Khastayeva A. Zh  | Influence of the kappa casein genotype on the technological properties of cow milk of Simmental and Alatau breeds      | Functional and Integrative Genomics , 2021 , 21(2) , RR. 231-238, ISSN: 1438-793X |                     | 69                                       | Kazakh National Agrarian University<br><br>69th percentile<br>–<br>Quartile Q2 |
| 2   | Khastayeva A. Zh  | Qualitative indicators of milk of Simmental and Holstein cows in different seasons of lactation                        | VeterinaryWorld , 2021, 14(4). RR. 956-963 , ISSN: 0972-8988                      | 0.5                 | 79                                       | Kazakh National Agrarian University<br><br>79th percentile<br>–<br>Quartile Q1 |
| 3   | Khastayeva A.Zh<br>Karimov N.<br>Bekturganova A.A. ,<br>Omaraliyeva A.M. ,<br>Shegenov ST | Influence of the kappa-casein genotype on the biological value of milk from Holstein, Alatau, and black-and-white cows | VeterinaryWorld , 2021, 14( 5 ): 956-963.   | 0.5<br>In the press | 79                                       |  |
| 4   | Zholdybayeva E.,<br>Kozhahmetova S.,<br>Tarlykov P.                                       | Analysis of Bacteroides fragilis Clinical Strains Isolated in Kazakhstan   | Microbiology Resource Announcements. - 2021. - Vol.10, No. 5. – P.e01311-01320.   | 0.1                 | CiteScore Percentile in Scopus - 29th Q4 | RSE National Center for Biotechnology, Nur-Sultan, Kazakhstan                  |

|    |  |  |   |      |  |   |
|----|--|--|---|------|--|---|
| 5  | Kozhakhmetova S., Zholdybayeva E., Tarlykov P., Atavliyeva S., Syzdykov T., Daniyarov A., Mukhtarova K., Ramankulov Y. | Determinants of resistance in <i>Bacteroides fragilis</i> strain BFR_KZ01 isolated from a patient with peritonitis in Kazakhstan   |   |      | Percentile - 55th<br>Q2  | RSE National Center for Biotechnology, Nur-Sultan, Kazakhstan |
| 6  | Omaraliyeva A.M. Botbayeva Zh.T., Agedilova M.T., Abilova M.B. Zhanaidarova A.   | Determining the optimal parameters of ultra- high-frequency treatment of chickpeas for the production of gluten-free flour         | Eastern-European Journal of Enterprise Technologies Vol. 5 no. 11 (113) (2021) 51-60 p ,                    | 0.6  | The percentile of the journal in the Scopus database is 54. Q2 | Nur-Sultan, Kazakhstan  |
| 7  | Aknur Muldasheva , Gulmira Zhakupova , Dulat Ibrayev , <u>Omaraliyeva A.</u> and Zhuldyz Satayeva                      | Comparative Characteristics of the Amino Acids Composition of Sheep Milk from Breeds of Northern Kazakhstan                        | Current Research in Nutrition and Food Science Volume 9   Number 3  | 0.4  | Percentile - 35th  | Nur-Sultan, Kazakhstan  |
| 8  | Tultabayeva M.Ch., Zhunussova G.S., Safuani J.E., Dodoyev K.A., Azimov Z.N.  | Comparative analysis of physical and chemical characteristics of safflower seed varieties growing in different climatic conditions | ISSN 2308-4804. science and world. 2021. No. 12 (100). Vol. II, r . 43-45                                   | 0.17 | 0.325  |   |
| 9  | Tultabayeva T.Ch., Zhumanova U.T., Tultabayev M.Ch., Safuani J.E.  | Physical and chemical indicators of honey in the East Kazakhstan region  | ISSN 2308-4804. science and world. 2021. No. 12 (100). Vol. II, r . 46-49                                   | 0.23 | 0.325  |   |
| 10 | <u>F.Dikhanbayeva</u> , E.Zhaxybayeva, Zh. Dimitrov, M. Baiysbayeva, G. Yessirkep, N. Bansal                           | Studying the effect of the developed technology on the chemical composition of yogurt made from camel milk                         | Eastern-European Journal of Enterprise Technologies ISSN 1729-3774, pp. 36-48. Vol. 3 no. 11 (111) (2021) : |      | By DB Scopus - percentile 52.                                  |   |

| <b>Publications in scientific publications of the Republic of Kazakhstan, recommended Committee for Control in Education and Science of the Ministry of Education and Science of the Republic of Kazakhstan</b> |  |  |   |               |                                      |
|---|--|--|---|---------------|--------------------------------------|
| No  | Full name of the teacher   | Name Articles  | Output ( name of journal, number, year, ISBN page )   | Volume , p.l. | impact factor according to (NC NTI), |
| 1   | Khastayeva A.Zh.   | Composition and physical and chemical properties of milk of Holstein and Alatau cows   | News of science of Kazakhstan. No. 1 (148). 2021, pp.156-164  | 0.56          |                                      |
| 2   | Kurmangaliyeva D.B.<br>Bekturganova A.A.<br>Omaraliyeva A.M.<br>Yussupova G.T.<br>Shadyarova Zh.K. | Development of technology for dry fermented milk product                               | Bulletin of Science of the Kazakh Agrotechnical University named after S.Seifullin No. 2 (109) 2021   | 0.35          |                                      |
| 3   | Khastayeva A.Zh.,<br>Omaraliyeva A.M.,<br>Bekturganova A.A.  | Rationale for the choice of raw materials for the production of vegetable milk         | Bulletin of the Almaty Technological University No. 4 (134) 2021. 53-58 p.  | 0.37          |                                      |
| 4   | Omaraliyeva A.M.,<br>Botbayeva Zh.T.,<br>Agedilova M.T.,<br>Abilova M.B.,<br>Zhanaidarova A.       | The effect of microwave processing of legumes on the properties of gluten-free flour   | Bulletin of L.N. Gumilyov. Series Biological Sciences №4(137)2021. 75-83s.  | 0.37          |                                      |
| 5   | Yesirkep G.E.  | Characterization of the texture profile of curd mass from camel milk for gerodietics   | Vestnik ATU, No. 4 (2021) 2021.C.5-9<br><a href="https://doi.org/10.48184/2304-568X-2021-4-5-9">https://doi.org/10.48184/2304-568X-2021-4-5-9</a> | 0.4           |                                      |
| 6   | Zhunussova G.S.  | Comparative analysis of the amino acid composition of camel milk                       | Mechanics and Technologies. Taraz, No. 1 (67) January-March 2020 P. 104-111   | 0.44          |                                      |
| 7   | Zhunussova G.S.  | Use of vegetable oils in the production of cottage cheese                              | Mechanics and Technologies . Taraz , No. 2 (72), 2021. P. 61-68   | 0.4           |                                      |
| 8   | Zhunussova G.S.  | Research of innovative technology of whole milk substitute based on secondary raw milk | Bulletin of the Tajik Technological University No. 3 (46) 2021 C.37-44 (RSCI)   | 0.5           |                                      |

| <b>Scientific publications of teaching staff in the Bulletin of KazUTB</b> |                          |   |   |               |  |
|--|--------------------------|---|---|---------------|--|
| No   | Full name of the teacher | Name articles   | Number, year  | Volume , p.l. | Full name of the co-author ( s )                         |
| 1  | Bekturganova A.A.        | Justification of the expediency of using oatmeal and buckwheat flour in the production of fermented milk products | Bulletin of KazUTB , Nur -Sultan, KazUTB . No. 1 (2021) Page _ 7-22 | 1.1           | Omaraliyeva A.M., Khastayeva A.Zh., A.K. Dyusembayev     |
| 2  | Yesirkep G.E             | Development of technology for bakery products based on composite products   | Bulletin of KazUTB , Nur -Sultan, KazUTB No. 1 (2021) P.32-37       | 0.4           | S.Zh. _ Umyanova , L.Zh. _ Bairon                        |
| 3  | Dzhandarbekova D.        | Research of a new type of national dietary flour product boursak  | Bulletin of KazUTB , Nur -Sultan, KazUTB No. 1 (2021) P.32-37       |               | A.Yu. Beisenbaev , Z.A. Beisenbaeva , A.M. Rakhimzhanova |
| Total 3  |                          |   |   |               |  |

| <b>Foreign scientific publications (far and near abroad)</b> |                          |   |  |               |  |
|--|--------------------------|---|--|---------------|--|
| No   | Full name of the teacher | Name articles   | Output ( name of journal, number, year, ISBN page )  | Volume , p.l. | Full name of the co-author ( s )                     |
| 1  | Khastayeva A.Zh.         | Qualitative composition of milk of cows of the Alatau breed and its variability during the year | III International scientific and practical conference: "Issues of the development of modern science and technology." Melbourne: ICNR Scientific View, 2021, pp.57-63                   | 0.44          | Bekturganova A.A., Ostrovsky A.S.                    |
| 2  | Khastayeva A.Zh.         | Analysis of grain production in the Republic of Kazakhstan for 2016-2020                        | Modern problems of science and education: collection of articles of the II International scientific-practical conference. - Penza: ICNS "Science and Education". - 2021. - from 43-47. | 0.31          | Bekturganova A.A., Omaraliyeva A.M. Asylkhan A.      |
| 3  | Yesirkep G               | Research of innovative technology of  | Bulletin of the Tajik Technological  | 0.5           | Dikhanbaeva F.T., Kekibaeva A.K., Zhaksybaeva E.Zh., |

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|--|---|---|--|---|
|  | whole milk substitute based on secondary raw milk | University No. 3 (46) 2021 C.37-44 (RSCI) |  | Smailova Zh.Zh., .., Zhunussova G.S., Zievudinov S.Z. |
|--|---|---|--|---|

| <b>Scientific publications in collections conferences held in the Republic of Kazakhstan for 2021</b> |                          |  |  |               |                                      |
|---|--------------------------|--|--|---------------|--------------------------------------|
| No  | Full name of the teacher | Name articles  | Collection imprint ( number, year, ISBN page )   | Volume , p.l. | Full name of the co-author ( s )     |
| 1   | Omaraliyeva A            | Development of technology for the production of low-lactose fermented milk product with probiotic properties | International scientific and theoretical conference " Seifullinskie readings - 17: "Modern agricultural science: digital transformation", dedicated to the 30th anniversary of the independence of the Republic of Kazakhstan, 2021 , 1 volume 2 part, pp. 131-132 ISBN: 978-601-257-217-9 | 0.18          | Baikenov A.M.                        |
| 2   | Mamirova N.A.            | The effect of phytohormones on the growth and accumulation of dry mass of wheat                              | Collection of materials International scientific and practical conference "Integration of science, education and Production of the industrial state» 202 1 pp _ 20-22 .  |               | Khasenova B.B., Akzholtaeva Sh.N.    |
| 3   | Bekturganova A.A.        | The use of nanotechnology in the food industry   | Collection of materials of the International scientific-practical conference. "Innovations and problems of development of modern science".   |               | Aldabergenova M.A. , Kenetaeva N.O., |

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|---|----------------------|--|---|--|--|
|   |                      |  | - Nur -Sultan:<br>Master By<br>ZhShS, 2021. -<br>210 b. pp.8-9  |  |  |
| 4 | Khastayeva<br>A.Zh.  | Prospects for the<br>use of cereals for<br>the production of<br>vegetable milk in<br>the Republic of<br>Kazakhstan | Materials of the<br>international<br>scientific and<br>practical<br>Conference<br>"Innovative<br>development of<br>food,<br>Light industry<br>and hospitality<br>industry»<br>Dedicated to the<br>30th anniversary<br>of independence.<br>Republic of<br>Kazakhstan<br>October 21-22,<br>2021. 28-30 s. |  | Bekturganova<br>A.A.,<br>Omaralieva<br>A.M.              |
| 5 | Omaraliyeva<br>A.M., | Peas for the<br>production of<br>gluten-free<br>confectionery<br>Study of the<br>selection variety<br>"Miras 07"   | Materials of the<br>international<br>scientific and<br>practical<br>Conference<br>"Innovative<br>development of<br>food,<br>Light industry<br>and hospitality<br>industry»<br>Dedicated to the<br>30th anniversary<br>of independence.<br>Republic of<br>Kazakhstan<br>October 21-22,<br>2021. 30-32 s. |  | Botbaeva Zh.T.,<br>Abilova M.B.,<br>Zhanaidarova<br>A.E. |
| 6 | Botbayeva<br>Zh.T.   | Efficiency of use of<br>secondary raw<br>materials of grain<br>crops in food<br>production                         | Collection of<br>materials<br>International<br>Scientific and<br>Practical<br>Conference "<br>Innovative<br>Development of<br>Food , Light<br>Industry and<br>Hospitality<br>Industry "   |  | A.M.<br>Omaralieva ,<br>M. Abilova                       |



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|--|--|--|-----------------------------------|--|--|
|  |  |  | October 21-22,<br>2021 page 20-22 |  |  |
|--|--|--|-----------------------------------|--|--|

| <b>Scientific publications in scientific conferences, symposiums, seminars , etc. Abroad :</b> |  |   |  |   |               |
|--|--|---|--|---|---------------|
| No   | Full name of the teacher                             | Name report   | Collection imprint ( number, year, ISBN page )   | Country, city organization, event name  | Volume , p.l. |
| 1  | Dyusembaev A.K., Bekturganova A.A., Khastayeva A.Zh. | The relevance of the production of combined products for functional nutrition                               | 2021, pp.66-67. ISBN 978-5-6045535-9-6   | Moscow XXXIV international scientific and practical conference: "Research and publishing center "Actuality. RF"   |               |
| 2  | Bekturganova A.A. Dyusembaev A.K. Tuyakova A.R.      | Analysis of the technological process of production of adding fillers to the fermented milk protein base    | p . 75-77<br>Elibrary . en<br><a href="https://elibrary.en/item.asp?id=44639716">https://elibrary.en/item.asp?id=44639716</a>  | L International Scientific and Practical Conference. World science: problems and innovations . January 30 , 2021 _ CIPHER MK -1003 _ Penza  |               |
| 3  | Tuyakova A.R., Amanzholov S.A., Bekturganova A.A.    | Prospects for the production of dry dairy products based on camel milk received by different methods drying | 2021. -p.53-56.<br>0.25 RSCI<br><a href="https://cyberleninka.ru/article/n/perspektivy-proizvodstva-suhih-molochnyh-produktov-na-osnove-verblyuzhiego-moloka-poluchennyh-raznymi-metodami-sushki">https://cyberleninka.ru/article/n/perspektivy-proizvodstva-suhih-molochnyh-produktov-na-osnove-verblyuzhiego-moloka-poluchennyh-raznymi-metodami-sushki</a><br><br><a href="https://na-konferencii.ru/conference/iii-mezhdunarodnaja-nauchno-prakticheskaja-konferencija-voprosy-razvitiya-sovremennoj-nauki-i-tehniki">https://na-konferencii.ru/conference/iii-mezhdunarodnaja-nauchno-prakticheskaja-konferencija-voprosy-razvitiya-sovremennoj-nauki-i-tehniki</a> | Questions development contemporary science and technology : collection articles III of the International scientific and practical conferences . – Melbourne Australia , ICNR " Scientific look ." - link to RISC. |               |

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|---|--|--|---|--|------|
| 4 | Khastayeva<br>A.Zh.<br>Bekturganov<br>a A.A.<br>Ostrovsky<br>A.S.          | Qualitative<br>composition of milk<br>of cows of the Alatau<br>breed and its<br>variability during the<br>year                 | – 2021. –p.57-<br>63 RSCI<br><a href="https://xn--e1aajagscdbhlf4c6a.xn--plai/events/v-mezhdunarodnaya-nauchno-prakticheskaya-konferentsiya-voprosy-razvitiya-sovremennoj-nauki-i-tehniki/">https://xn--<br/>e1aajagscdbhlf4<br/>c6a.xn--<br/>plai/events/v-<br/>mezhdunarodna<br/>ya-nauchno-<br/>prakticheskaya-<br/>konferentsiya-<br/>voprosy-<br/>razvitiya-<br/>sovremennoj-<br/>nauki-i-tehniki/</a> | ISSUES OF<br>DEVELOPMENT<br>OF MODERN<br>SCIENCE AND<br>TECHNOLOGY:<br>collection of articles<br>of the III<br>International<br>Scientific and<br>Practical<br>Conference. –<br>Melbourne<br>Australia,<br>International Center<br>for Research and<br>Development<br>“Scientific View”. |      |
| 5 | Bekturganova<br>A.A.<br>Zavgorodnyaya<br>M.V.<br>Popova V.S.<br>Malik D.B. | Prospects for the<br>development of<br>technology of broths<br>with prebiotics from<br>bone and meat and<br>bone raw materials | , 2021 Penza .<br>Code K-280.<br>Elibrary . ru<br>p.21-23<br><a href="https://elibrary.ru/item.asp?id=44684704">https://elibrary.r<br/>u/item.asp?id=4<br/>4684704</a>  | VII International<br>Research<br>Competition. Digest<br>of articles.<br>Competition of the<br>best student works.  |      |
| 6 | Khastayeva<br>A.Zh.,<br>Malik D.B.,<br>Yelemessova<br>M.B.                 | Influence of the<br>season of the year on<br>the fatty acid<br>composition of cow 's<br>milk Simmental breed                   | C88. April 26 ,<br>2021 p. 13-21,<br>ISBN 978-5-<br>00174-212-8   | Russian Federation,<br>Petrozavodsk , ICNP<br>"New Science",<br>STUDENT-<br>RESEARCH 2021.<br>Collection of articles<br>of the International<br>Research<br>Competition  | 0.56 |

| <b>Participation of teaching staff (directly) with reports in scientific conferences, symposiums, seminars, etc. abroad for 2021</b> |                          |   |  |  |               |
|--|--------------------------|---|--|--|---------------|
| No   | Full name of the teacher | Name report   | Collection imprint ( number, year, ISBN page ) | Country, city organization, event name                                       | Volume , p.l. |
| 1  | Omaraliyeva A.M.         | Functional foods as a guarantee of the health of the nation |  | Republic of Uzbekistan, Tashkent, Tashkent University of Chemical Technology | 0.3           |

**Number of registered applications for titles of protection**

| No | The authors)   | Name of copyright certificates  | Registered title number   |
|----|--|---|---|
| 1  | Muslimov N. Zh.,<br>Omaraliyeva A.M.<br>Sultanova M.Zh.<br>Kizatova M. E.<br>Abdrakhmanov Kh. A.<br>Borovsky A. Yu.<br>Ospanov A. A. | Method for obtaining micronized composite flour from leguminous crops | Patent for invention No. 34879 02/12/2021                         |
| 2  | Omaraliyeva A.M.,<br>Abilova M.B.,<br>Botbayeva Zh.T.,<br>Baishugulova Sh.K.   | Method for preparing a dietary custard semi-finished product          | Utility model patent No. 5031. 2021                               |
| 3  | Zhunussova G.S.  | Method for producing fermented milk drinks using lactulose            | Application No. 202 2 dated 10 . 0 2.202 2 . utility model patent |

| <b>Introduction of scientific research into the educational process (attach a copy of the act)</b> |  |   |              |  |
|--|--|---|--------------|--|
| No   | FULL NAME. the authors)  | The name of the result  | Organization | Implementation act                     |
| 1  | Omaraliyeva A.M.,<br>Botbayeva Zh.T.                                   | Implementation act materials of research work AR09561622 on the topic "Development of technology for the production of gluten-free flour confectionery products using flour from seeds of leguminous crops grown in Kazakhstan" in the educational process of the department "Technology and standardization" | JSC KazUTB _ | Act of implementation dated 13.09.2021 |
| 2  | Omaraliyeva A.M.<br>Botbayeva Zh.T.<br>M. Abilova ,<br>A. Zhanaydarova | The act of production tests of the method for preparing gluten-free muffins   | Kun-bel LLP  | Implementation act                     |
| 3  | Omaraliyeva A.M.<br>Botbayeva Zh.T.<br>M. Abilova ,<br>A. Zhanaydarova | The act of production testing of the method for preparing gluten-free custard semi - finished product   | Kun-bel LLP  | Implementation act                     |
| 4  | Omaraliyeva A.M.<br>Botbayeva Zh.T.<br>M. Abilova ,                    | The act of implementing the developed technology  | Kun-bel LLP  | Implementation act                     |

|   |  |   |             |         |
|---|--|---|-------------|---------|
|   | A. Zhanaydarova  | for the production of gluten-free flour confectionery products  |             |         |
| 5 | Omaraliyeva A.M.<br>Botbayeva Zh.T.<br>M. Abilova ,<br>A. Zhanaidarova | ACT of pilot-industrial approbation of the developed technology for the production of gluten-free flour confectionery | LLP PO ECOS | ODA act |

| <b>Implementation of scientific research into production</b> |                                      |  |                 |                    |
|--|--------------------------------------|--|-----------------|--------------------|
| No   | FULL NAME. the authors)              | The name of the result   | Organization    | Implementation act |
| 1  | Omaraliyeva A.M.,<br>Botbayeva Zh.T. | ACT pilot testing of the developed technology for the production of gluten-free flour confectionery products | LLP "PO" Ekos " | Implementation act |
| 2  | Omaraliyeva A.M.,<br>Botbayeva Zh.T. | ACT pilot testing of the developed technology for the production of gluten-free flour confectionery products | SPK " Kunbel "  | Implementation act |

| <b>Organization and holding of scientific events for 2021</b> |  |                  |  |   |
|---|--|------------------|--|---|
| No  | event title  | Timing           | Members  | Registration of the result (protocol, collection) |
| 1   | Round table on the topic "Innovative technologies for healthy food products" | December 3, 2021 | Teaching staff, students of the department "TiS" | Protocol  |

| <b>Advanced training of teaching staff</b> |                                     |   |                     |
|--|-------------------------------------|---|---------------------|
| No   | account degree, position            | Name  | Period              |
| 1  | Bekturganova Almira<br>Anuarbekovna | Innovative approaches in technology and food safety KINEU . Interstate technical committee for standardization MTK-534 "OBSPPS". Kostanay city 72 hours | January 11-22, 2021 |
| 2  | Bekturganova Almira<br>Anuarbekovna | Current state and new technologies of public catering products Nur-Sultan   | 16-28.08.2021       |

|    |  |   |                                      |
|----|--|---|--------------------------------------|
|    |  | Scientific and methodological center<br>"ZIAT"<br>72 hours  |                                      |
| 3  | Bekturganova<br>Almira<br>Anuarbekovna | A course on training experts in<br>evaluating textbooks and educational<br>and methodological complexes.<br>Nur-Sultan, A STANAKITAP . 72<br>hours  | August September 2021                |
| 4  | Omaraliyeva<br>Aigul<br>Makhmudovna    | Ensuring quality and safety in the<br>production and sale of food products<br>- Scientific and Methodological<br>Center " ZIAT ", Nur -Sultan 72<br>hours                                 | from August 16 to<br>August 30, 2021 |
| 5  | Safuani Zhanar<br>Yessenkulkyzy        | Trends and prospects for the<br>development of oilseeds processing  | 22.11 – 03.12.2021                   |
| 6  | Safuani Zhanar<br>Esenkulkyzy          | Technology, organization and design<br>of food production enterprises<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours  | 02-14.08.2021                        |
| 7  | Umyanova S.Zh.                         | Innovative technologies in the food<br>industry and food security .<br>Scientific and Methodological<br>Center " Ziat ", Nur -Sultan 72 hours   | August 16-30, 2021                   |
| 8  | Byron L.J.                             | Current state and prospects for the<br>development of microbiology and<br>biotechnology ,<br>Nur - Sultan, Scientific and<br>methodological center " ZIAT "<br>advanced training 72 hours | 1 August 6 to August<br>28, 2021     |
| 9  | Zhunussova<br>Gulzat<br>Skendirovna    | Qualimetric quality assessment,<br>standardization and conformity<br>assessment of food products<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours             | 02-14.08.2021                        |
| 10 | Isa Perneculus                         | Qualimetric quality assessment,<br>standardization and conformity<br>assessment of food products<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours             | 02-14.08.2021                        |
| 11 | Dzhandarbekova<br>Dekhkankul           | The theory of mechanisms and the<br>development of modern machine<br>parts. Strength of materials   | 19-30.07.2021                        |

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|    |  | Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours  |               |
| 12 | Yesirkep<br>Gulmira<br>Esirkepkyzy     | Theoretical foundations of<br>commodity science of food products<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours    | 02-14.08.2021 |
| 13 | Agedilova<br>Mereke<br>Tuyakovna       | Patenting and science: from theory to<br>practice<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours                   | 18-30.07.2021 |
| 14 | Agedilova<br>Mereke<br>Tuyakovna       | International standard and quality<br>management system.<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours            | 05-17.07.2021 |
| 15 | Botbayeva<br>Zhanar<br>Turlybekovna    | General and molecular genetics of<br>biotechnological productions<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours   | 02-14.09.2021 |
| 16 | Botbayeva<br>Zhanar<br>Turlybekovna    | Modern standards of sanitation and<br>food hygiene<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours                  | 02-14.08.2021 |
| 17 | Botbayeva<br>Zhanar<br>Turlybekovna    | Physical methods of processing<br>bakery and confectionery products<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours | 16-28.08.2021 |
| 18 | Karmanova<br>Gulbanu<br>Kabdykalykovna | Materials Science and Technology of<br>Structural Materials<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours         | 16-30.08.2021 |
| 19 | Aubakirova<br>Alfiya<br>Kabylovna      | Technical regulation, control and<br>evaluation of food products quality   | 02-14.08.2021 |

|        |   |  |                    |
|--------|---|--|--------------------|
|        |   | Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours  |                    |
| 20     | Mukanova<br>Kuralai<br>Aitzhanovna      | Examination and control on the<br>safety of products of food and<br>processing industries<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours   | 02-14.08.2021      |
| 21     | Akzholtayeva<br>Shynar<br>Nurshabekovna | Standardization, certification,<br>metrology and accreditation of food<br>production<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours        | 05-17.07.2021      |
| 22     | Akzholtayeva<br>Shynar<br>Nurshabekovna | Food safety system<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours  | 02-14.08.2021      |
| 23     | Akzholtayeva<br>Shynar<br>Nurshabekovna | Food safety system management<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours   | 16-28.08.2021      |
| 24     | Olzhabayev<br>Shyngys<br>Kenzhetaiuly   | Standardization and certification<br>Fundamentals of product and document<br>identification<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours | 02-14.08.2021      |
| 25     | Olzhabayev<br>Shyngys<br>Kenzhetaiuly   | Materials Science. Strength of<br>materials.<br>Nur -Sultan<br>Scientific and methodological center<br>"ZIAT"<br>72 hours  | 02-14.09.2021      |
| 26     | Kulakhmedova<br>B.D.                    | Innovative techniques and<br>technologies in the food industry<br>Scientific and methodological center<br>" ZIAT " C-02711<br>Nur-Sultan 72 hours                        | August 02-14, 2021 |
| Total: |   | 26   |                    |

| <b>MONOGRAPHS, TEXTBOOKS, TEACHING AIDS</b> |  |   |  |  |
|---|--|---|--|--|
| No  | FULL NAME of the authors                         | Title where published   | The year of publishing, number of p.l. | The presence of the signature stamp of the Ministry of Education and Science of the Republic of Kazakhstan |
| 1   | Kurmanbayev A.A., Zhunussova G.S., Mamirova N.A. | Short course of lectures "Ecological biotechnology" textbook. Publishing house Techno Erudite, Almaty . 224str  | in print p.l.14                        | -  |
| 2   | Yesirkep G. Dikhanbayeva F. Bekturganova A.      | Workshop on general technology of food products 160 p.  | In the press p.l.10                    |  |
| 3   | Omaraliyeva A.M.                                 | Physical methods of food processing. Printing " Z - PRINT " Nur- Sultan   | 2021, 12.5 p.l. _                      | -  |
| 4   | Byron L.J.                                       | Textbook on the subject "Fundamentals of Genetic Engineering". - Nur-Sultan. - 2021-2022 academic year (in the process of development)                          |  |  |
| 5   | Umyanova S.Zh.                                   | Basics of processing of raw materials and food products (textbook on practical work). - Nur-Sultan. - 2021-2022 academic year (in the process of development)   |  |  |
| 6   | Orazkhanova M.A.                                 | Equipment for the production of confectionery and automation of current lines. Textbook - Nur-Sultan. - 2021-2022 academic year (in the process of development) |  |  |
| 7   | Rakhimzhanova A.M.                               | Sausage production design: Textbook. - Nur-Sultan. - 2021-2022 academic year (in the process of development)  |  |  |

| <b>STUDENT R&amp;D for 2021</b>                                 |  |                                  |   |   |
|---|--|----------------------------------|---|---|
| <b>Scientific publications students in scientific magazines</b> |  |                                  |   |   |
| No.   | Full name of the student (course, group) | Theme of the project, supervisor | Name of scientific event, date and place of holding | Diploma, certificate, diploma (with indication of prize place and nomination) |
| 1   | Malik Diaz, 3rd                          | Influence of the season of the   | "Student-   | Diploma of  |



|   |   |   |   |                           |
|---|---|---|---|---------------------------|
|   | year student, BT-182                      | year on the fatty acid composition of the milk of Simmental cows , Dr. Phd Khastayeva A.Zh.                                   | researcher 2021", 04/26/2021, RF          | the 1st degree            |
| 2 | YelesovaMadina , 3rd year student, BT-182 | Influence of the season of the year on the fatty acid composition of the milk of Simmental cows . doctor phd Khastayeva A.Zh. | "Student-researcher 2021", 04/26/2021, RF | Diploma of the 1st degree |

| <b>Scientific publications of students in the collections of the conference held in the Republic of Kazakhstan</b> |  |  |  |               |                                     |
|--|--|--|--|---------------|-------------------------------------|
| No   | Full name of the student (course, group)               | Name articles  | Collection imprint ( number, year, ISBN page )   | Volume , p.l. | FULL NAME. <i>scientific leader</i> |
| 1  | Aldabergenova M.A., Kenetayeva N.O., 4th year student, | The use of nanotechnology in the food industry   | Collection of materials of the International scientific-practical conference. "Innovations and problems of development of modern science". - Nur -Sultan: Master By ZhShS, 2021. - 210 b. pp.8-9 | 0.1           | Bekturganova A.A.                   |
| 2  | Askarova Nuraim, 4 course                              | Technology of making high-value bakery products from secondary dairy and vegetable raw materials | Collection of materials of the International scientific-practical conference. "Innovations and problems of development of modern science". - Nur -Sultan: Master By ZhShS, No. 1, 2021 , pp. 6-8 | 3             | Esirkep G.E.                        |

| <b>Scientific publications of students in conference proceedings held abroad</b> |  |   |   |               |                                     |
|--|--|---|---|---------------|-------------------------------------|
| No   | Full name of the student (course, group) | Name articles   | Collection imprint ( number, year, ISBN page )  | Volume , p.l. | FULL NAME. <i>scientific leader</i> |
| 1  | Ostrovsky A.S., 3rd year student, BT-182 | Qualitative composition of milk of cows of the Alatau breed and its | III International scientific and practical conference: "Issues of the development of modern science and | 0.44 RSCI     | Khastayeva A.Zh. Bekturganova A.A.  |

|   |   |   |   |     |                   |
|---|---|---|---|-----|-------------------|
|   |   | variability during the year   | technology." Melbourne: ICNR Scientific View, 2021, pp.57-63  |     |                   |
| 2 | Zavgorodnyaya M.V.<br>Popova V.S.<br>Malik D.B. | Prospects for the development of technology of broths with prebiotics from bone and meat and bone raw materials | VII International Research Competition. Digest of articles. Competition of the best student works. February 5 , 2021 Penza .<br>Cipher K -280.<br>Elibrary.ru p.21-23 _ | 0.2 | Bekturganova A.A. |

| <b>Participation of students in scientific competitions, exhibitions in the Republic of Kazakhstan</b> |  |  |  |           |
|--|--|--|--|-----------|
| No. p/n  | FULL NAME, course, group                             | Name of the scientific competition, date and venue | Title of the submitted work  | Result    |
| 1  | Shaimergenova D.S.                                   | KazUTB .<br>Intrauniversity stage of NIRS          | Technology of making yogurt at home  |           |
| 2  | Aukenov E.A. 3 course, BT-181.                       | KazUTB .<br>Intrauniversity stage of NIRS          | Diseases of potatoes caused by microorganisms and their prevention                               | 1 place   |
| 3  | Meirambekov G. M. 3 course, BT-181.                  | KazUTB .<br>Intrauniversity stage of NIRS          | Growing warm date palms at home  | 2nd place |
| 4  | Askarova Nuraiym Askarkyzy. 4 course, TPProiz-171.   | KazUTB .<br>Intrauniversity stage of NIRS          | Technology of making high-value bakery products from secondary dairy and vegetable raw materials | 1 place   |
| 5  | Ayathan Fatima, Serikova Zhaina TPProd-191, 2 course | KazUTB .<br>Intrauniversity stage of NIRS          | Development of technology for new bakery products  | 2nd place |
| 6  | Daurenbekova A.E., TPProd-181, 3rd year student.     | KazUTB .<br>Intrauniversity stage of NIRS          | The current state and prospects for the production of koumiss                                    | 3rd place |
| 7  | Zharlgasynova A.A. TPProd-191, 2nd course.           | KazUTB .<br>Intrauniversity stage of NIRS          | Canned meat products. Preparation of canned beef (stew) at home                                  | 2nd place |
| 8  | Ardakh Asemgul                                       | KazUTB .<br>Intrauniversity stage of NIRS          | Comparative characteristics of wheat and rye flour   | 3rd place |
| 9  | Shayakhmetova A.Zh. TPProd-191, 2nd course.          | KazUTB .<br>Intrauniversity stage of NIRS          | Laws of proper nutrition of students   | 2nd place |
| 10   | Sabyr A.E. TPProd-181, 3 course.                     | KazUTB .<br>Intrauniversity stage of NIRS          | Technology for the development of a new fermented milk product                                   | 3rd place |

| <b>Participation of students in scientific competitions and exhibitions abroad</b> |  |  |  |  |
|--|--|--|--|--|
| No   | FULL NAME,<br>course, group  | Name of the scientific<br>competition, date and venue  | Title of the submitted<br>work   | Result   |
| 1  | 3rd year OP students<br>Zavgorodnyaya M.V.<br>Popova V.S.<br>Malik D.B.<br>Scientific supervisor:<br>Ph.D., Ass.Professor<br>Bekturganova A.A.   | VII International Research<br>Competition. Digest of articles.<br>Competition of the best student<br>works. February 5 , 2021 Penza .<br><br>Cipher K -280. Elibrary.ru p.21-<br>23 _  | Prospects for the<br>development of<br>technology of broths<br>with prebiotics from<br>bone and meat and<br>bone raw materials | Diploma<br>2nd place   |
| 2  | 3rd year students of the<br>EP "5B072700 -<br>Technology of food<br>products"<br>Daurenbekova Aigerim<br>Erbolovna , Sabyr<br>Aizhan Esetkyzy<br>Scientific supervisor:<br>Ph.D., Ass.Professor<br>Bekturganova A.A. | International competition of<br>professional presentations for<br>students, teachers and<br>professionals on the topic<br>"Education, Pedagogy, Training"<br>-<br>Project Interclovers . en http ://<br>pro . interclovers . ru / pr / educ .<br>html . Technical science..<br>Nizhny Novgorod, 10.02.2021 | Improving the<br>technology for<br>complex processing<br>of bone and meat and<br>bone raw materials<br>with prebiotics         | Diploma<br>of the 1st<br>degree<br>Competiti<br>on<br>Laureate |
| 3  | 3rd year student of the<br>specialty "6B07223 -<br>"Technology of<br>processing industries"<br>Ayathan Fatima<br>Talgatkyzy<br>Scientific supervisor:<br>Ph.D., Ass.Professor<br>Bekturganova A.A.                   | International scientific<br>competition "Technical<br>creativity"<br>Project Interclovers . en http ://<br>pro . interclovers . ru / pr / educ .<br>html . Technical science..<br>Nizhny Novgorod, 02/15/2021  | Development of a<br>new technology of a<br>functional product for<br>the correction of<br>children's diets                     | Diploma<br>3 degree  |

| <b>Students who received medals, diplomas, certificates, awards, etc.<br/>in various competitions, exhibitions, conferences</b> |  |                   |  |   |               |
|---|--|-------------------|--|---|---------------|
| No  | Full name                                    | course ,<br>group | Name of the event  | Time and place  | Type of award |
| 1   | Aldabergenova<br>M.A.,<br>Kenetayeva<br>N.O. | 4 course          | Collection of materials of<br>the International scientific-<br>practical conference.<br>"Innovations and problems<br>of development of modern<br>science". | Nur -Sultan: Master<br>By ZhShS, 2021. -<br>210 b. pp.8-9 | Certificate   |

| <b>R&amp;D for MASTER STUDENTS in 2021</b> |                                 |                           |  |                                     |
|--|---------------------------------|---------------------------|--|-------------------------------------|
| No   | FULL NAME<br>undergraduate      | Speciality                | Topic of dissertation<br>research      | supervisor                          |
| 1  | Dyusembayev<br>Almat Kanatovich | M07243-<br>Technology and | Development of<br>technology for a new | Candidate of<br>Technical Sciences, |

|    |                                  |                                       |   |  |
|----|----------------------------------|---------------------------------------|---|--|
|    |                                  | food products                         | product for school meals with probiotic properties  | Associate Professor Bekturganova A.A.                                  |
| 2  | Tuyakova Aigerim Rakhmetollaevna | M07239 - Technology and food products | Development of technology for the production of dried camel milk with long-term storage capacity                                | Candidate of Technical Sciences, Associate Professor Bekturganova A.A. |
| 3  | Zhanaidarova Aidana              | M07239 - Technology and food products | Development of technology for obtaining maltodextrin and its use in food production   | Candidate of Technical Sciences, Associate Professor Bekturganova A.A. |
| 4  | Kabdolova Aigerim                | M07243- Technology and food products  | Development of technology for deli meat products of increased biological value  | Candidate of Technical Sciences, Associate Professor Bekturganova A.A. |
| 5  | Bashirova Zh.K.                  | M07239 - Technology and food products | Development of technology for the production of fermented milk products using bioadditives.                                     | Doctor of Technical Sciences, Professor Tultabaev M.Ch.                |
| 6  | Satybaldiyeva M.T.               | M07239 - Technology and food products | Scientific and technological bases for the production of mass food products using fruit and vegetable raw materials             | Doctor of Technical Sciences, Professor Tultabaev M.Ch.                |
| 7  | Asylkhan Aygerim Asylkhankyzy    | M07239 - Food safety N/A 1 course     | Development of regulatory documents for the production of vegetable "milk" drinks   | Khastaeva A.Zh., PhD, senior lecturer                                  |
| 8  | Arynov Tamerlan Muratovich       | M07239 - Food safety N/A 1 course     | Study of the influence of technological factors on the production of vegetable milk and development of regulatory documentation | Khastaeva A.Zh., PhD, senior lecturer                                  |
| 9  | Boranbayeva Zhanbota Nurkenovna  | M07239 - Food safety N/A 1 course     | Comprehensive system for quality assurance and safety in the development of grain beverage technology                           | Omaralieva A.M. Ph.D., Assoc.Professor                                 |
| 10 | Khasenova Botagoz Bolatkyzy      | M07239 - Food safety N/A 1            | Analysis of the influence of methods  | Tultabaev M.Ch. Doctor of Technical                                    |

|    |                                |                                       |   |  |
|----|--------------------------------|---------------------------------------|---|--|
|    |                                | course                                | and parameters of cold pressing of safflower seeds on the preservation of quality indicators of all ingredients | Sciences, Professor                      |
| 11 | Balyqbaev Nardias Nurlanbekuly | M07239 - Technology and food products | Development of a technology for the production of fermented milk products using bioadditives of grain crops     | Omaralieva A.M. Ph.D., Assoc.Professor   |
| 12 | Бақыт Назерке Амangeldikyzy    | M07243- Technology and food products  | Development of technology for the production of protein paste with a probiotic factor                           | Bekturganova A.A. Ph.D., Assoc.Professor |

| <b>Scientific internships for undergraduates</b> |                          |                                      |  |             |
|--|--------------------------|--------------------------------------|--|-------------|
| No   | FULL NAME. undergraduate | Speciality                           | Country, university or research center and place of internship | Result      |
| 1  | Dyusembayev A.K.         | M07243- Technology and food products | Kazakhstan. Nur -Sultan. LLP " KazNIIPP " April 12-30, 2021    | Certificate |
| 2  | Tuyakova A.R.            | M07243- Technology and food products | Kazakhstan. Nur -Sultan. LLP " KazNIIPP " April 12-30, 2021    | Certificate |

| <b>Scientific publications of undergraduates in scientific journals, included in the Thomson Reuters and Scopus database</b> |  |  |  |                |               |                                    |
|--|--|--|--|----------------|---------------|------------------------------------|
| No   | Full name of the undergraduate (course, special) | Article title  | Publication imprint (journal, year, number, page, ISSN)                                  | Volume in p.l. | impact factor | <i>Full name scientific leader</i> |
| 1  | Zhanaidarova A.                                  | Determining the optimal parameters of ultra- high-frequency treatment of chickpeas for the production of gluten-free flour | Eastern-European Journal of Enterprise Technologies Vol. 5 no. 11 (113) (2021) 51-60 p , | 0.6            |               | Bekturganova A.A.                  |

| <b>Scientific publications of undergraduates in scientific journals of the Republic of Kazakhstan, abroad</b> |  |  |  |               |                                     |
|---|--|--|--|---------------|-------------------------------------|
| No.   | Full name of the undergraduate (course, special) | Name articles  | Log output ( number, year, ISBN page )                                     | Volume , p.l. | FULL NAME. <i>scientific leader</i> |
| 1   | Zhanaydarova A. 2 course                         | The effect of microwave processing of legumes on the properties of gluten-free flour | Bulletin of L.N. Gumilyov. Series Biological Sciences №4(137)2021. 75-83s. | 0.37          | Bekturganova A.A.                   |

| <b>Scientific publications of undergraduates in the collections of the conference held in the Republic of Kazakhstan</b> |  |  |   |               |                                     |
|--|--|--|---|---------------|-------------------------------------|
| No   | Full name of the undergraduate (course, special) | Name articles  | Collection imprint ( number, year, ISBN page )  | Volume , p.l. | FULL NAME. <i>scientific leader</i> |
| 1  | Kabdolova A.                                     | Development of technology for high-value delicacy meat products  | 2021<br>978-601-263-578-2   | 0.06          | Omaralieva A.M.                     |
| 2  | Bekturganova A.A.                                | Development of the main parameters of technological processes in the technology of fermented milk products | International scientific and practical online conference " Modern engineering innovations and technologies " , Kokshetau University named after Sh . Ualikhanov , Kokshetau. March 4, 2021. pp. 8-9 | 0.05          | Dyusembaev A.K.                     |
| 3  | Zhanaidarova A.E.                                | Research of selection "Miras 07" variety of legumes for the production of gluten-free confectionery        | Materials of the international scientific and practical Conference "Innovative development of food, Light industry and hospitality industry» Dedicated to the                                       |               | Bekturganova A.                     |

|  |  |  |  |  |  |
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|  |  |  | 30th anniversary of independence. Republic of Kazakhstan October 21-22, 2021. 30-32 s. |  |  |
|--|--|--|--|--|--|

| <b>Scientific publications of undergraduates in conference proceedings held abroad</b> |  |  |   |               |                                     |
|--|--|--|---|---------------|-------------------------------------|
| No   | Full name of the undergraduate (course, special) | Name articles  | Collection imprint ( number, year, ISSN page )  | Volume , p.l. | FULL NAME. <i>scientific leader</i> |
| 1  | Dyusembayev A.K.<br>Tuyakova A.R.                | Analysis of the technological process of production of adding fillers to the fermented milk protein base           | L International Scientific and Practical Conference. World science: problems and innovations . January 30, 2021 Code MK-1003, Penza . p . 75-77 Elibrary . en   | 1.2           | Bekturganova A.A.                   |
| 2  | Tuyakova A.R.,                                   | <u>Prospects for the production of dry dairy products based on camel milk obtained by different methods drying</u> | Questions of the development of modern science and technology: a collection of articles of the III International scientific and practical conference. – Melbourne Australia, International Center for Research and Development “Scientific View”. – 2021. –p.53-56 RSCI | 0.25          | Bekturganova A.A.                   |
| 3  | Dyusembayev A.K.                                 | Development of the main parameters of technological processes in the technology of fermented milk products         | International scientific and practical online conference " Modern engineering innovations and technologies " , Kokshetau University named after Sh . Ualikhanov , Kokshetau. March 4, 2021. pp. 8-9   |               | Bekturganova A.A.                   |
| 4  | Asylkhan A.A.                                    | Analysis of grain production in the Republic of Kazakhstan for 2016-2020   | Modern problems of science and education: collection of articles of the II International scientific-practical conference. - Penza:  | 0.31          | Khastayeva A.Zh.                    |

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|  |  |  | ICNS "Science and Education". - 2021. - from 43-47. |  |  |
|--|--|--|---|--|--|

| <b>Participation of undergraduates in the work of scientific projects</b> |  |   |   |
|---|--|---|---|
| No  | Full name, course, specialty, study group, Project position, degree of participation | Project name  | Full name, account. degree, title of research project manager   |
| 1   | Tuyakova A.R.<br>M07243- Technology and food products                                | 1.BR05236766 "Creation of healthy food products with a functional focus on the basis of agricultural raw materials" PTF MES RK 2018-2020. on the topic: " Development of technology for the production of cereals and flour confectionery mixtures corresponding to products labeled" gluten-free "   | Botbayeva Zhanar Turlybekovna, leading researcher of the laboratory "Deep processing of crop products", candidate of biological sciences.       |
| 2   | Tuyakova A.R.<br>M07243- Technology and food products                                | 2. BR06249336 Ensuring the technological development of enterprises in the starch - treacle , fat-and-oil, compound feed, sugar industries of the agro-industrial complex based on innovative technologies for the storage and processing of plant-growing raw materials. on the topic: " Development of technology for drying starch syrups" | Project manager: Baikenov Alibek Omirserikuli, head of the laboratory "Deep processing of crop products", master of engineering and technology. |
| 3   | Tuyakova A.R.<br>M07243- Technology and food products                                | 3.AP08052539-OT-20 on the topic: " Improving the technology for separating the pulp of melon fruits for the production of dried fruits and healthy breakfasts " GF MES RK 2020-2022.  | Project leader: Kizatova Marzhan Yerzhanovna, head of the laboratory "Primary processing of plant raw materials", PhD .                         |
| 4   | Zhanaydarova A., 1st year Master's student of Food technology – junior researcher.   | Development of technology for the production of gluten-free flour confectionery products using flour from seeds of leguminous crops grown in Kazakhstan   | Omaraliyeva A.M., Ph.D.   |
| 5   | Kabdolova A.M.   | Development of technology for grain "milk" drinks enriched with Omega-3 polyunsaturated fatty acids   | Khastayeva A.Zh. , phd  |