**1. Name of the scientific laboratory Scientific laboratory “Laboratory of biological research”**

**2. Tasks of the scientific laboratory.** Scientific developments in the field of biological sciences, applied research in the field of expert activities. Carrying out all types of biological research, which include: actual biological examinations and agricultural examinations.

Research within the framework of the project “Development of an ecological system for phytosanitary control of destructive biota (phytophages and phytopathogens) of spring wheat in the North-East of Kazakhstan” state budgetary research No. 66KMU2/4 dated February 24, 2021, headed by Ualieva R.M.

**3. List of laboratory equipment**

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| **№** | **Name of the equipment** | **Brief characteristics of the equipment** | **Tasks performed on the equipment** | **Year of manufacture** | **Certification (yes/no)** | **Date of equipment verification** | **Notes** |
| 1 | Histological thermostat with artificial ventilation SVF100 (Bio-Optica, Italy) | Function: for heating  Place of application: for laboratories, for histological plates  Configuration: desktop  Temperature range: MIN: 20 °C (68 °F) / MAX: 70 °C (158 °F). Forced ventilation histological oven SVF100 is designed for rapid drying of glass slides  and rapid heating of laboratory material. Digital display allows you to change  operating parameters, as well as turning programs on and off.  The chamber is equipped with two height-adjustable, perforated shelves and a collector tray, all removable. | For quick drying of glass slides  and rapid heating of laboratory material. | 2021 | no |  |  |
| 2 | Pharmaceutical refrigerator HF-250 (Russia) | Total volume, 250 l.; Height, 1300 mm; Depth, 610 mm; Width, 600 mm; Weight, 50 kg; Maximum rated power, 220 W; Voltage, 220 V; Temperature in the refrigerator compartment, +2... +15 °C.  Microprocessor temperature controller with ultra-sensitive temperature sensor; forced air circulation system; metal door with lock; automatic maintenance of temperature in the chamber; alarm when the temperature deviates from the set one; temperature display on the control panel display; fan shutdown when opening the door, plastic containers for pharmaceuticals - 2 pcs. | For storing nutrient media and other biological products that require storage in a temperature range below 5 °C | 2021 | no |  |  |
| 3 | Fume hood LK-1200 ShV (1245x690x2200), ceramics, with two built-in cabinets | The cabinet exhaust chamber (upper part) is made of laminated chipboard. The working chamber has three exhaust zones. The lower part is a collapsible metal frame with a gray polymer coating. The frame has adjustable supports in the range of 0-30 mm to compensate for uneven floors. Basic equipment: double lifting screen made of shockproof triplex glass 6 mm thick with the ability to be fixed at any height; when the screen is fully raised, the height of the cabinet does not change, the lifting mechanism is located outside the working area; LED lamp, 18 W, protection class IP-65 (located in the work area); splash-proof electrical sockets 220V, 16 A (2 pcs.) with grounding and a switch; electrical box o.u. with terminals KM-222 102x102x43.5 IP 44 and differential emergency power off circuit breaker 16A with RCD; steel flange for connecting ventilation (D=200 mm); anti-spill rim - polypropylene. | For most laboratory tests that involve toxic substances. | 2021 | no |  |  |
| 4 | Air sterilizer GP-10 SPU | The air sterilizer provides: uniform temperature distribution in the working chamber; temperature setting and regulation; automatic temperature control in the working chamber; digital indication of current and set temperature. Working chamber volume, 10 l  Operating temperature range, from 50 to 200 °C  Maximum temperature deviation at the control point of the working chamber from the set temperature, ±6 °C, no more  Accuracy of maintaining temperature in the working chamber in steady state, no worse than ±3 °C  Heating time to maximum temperature, 30 minutes.  Continuous operation time, 16 hours.  Installed power, 1.6 kW. | For drying and heat treatment of laboratory glassware. | 2021 | no |  |  |
| 5 | Microscope Altami BIO 8 (Digital 3 MP trino 160 HAL) | The microscope is equipped with a trinocular attachment, to which a 3 MP digital camera is connected. The interpupillary distance is smoothly adjustable (range from 48 to 75 millimeters), and there is also a diopter adjustment from -5 to +5, which allows you to accurately adjust the microscope to the physiological characteristics of the user. The tilt angle of the nozzle is thirty degrees, and the rotation angle is 360 degrees. The microscope comes with four semi-planachromatic objectives having a magnification/aperture of 4X/0.1, 10X/0.25, 40X/0.65, 100X/1.25 MI. Altami BIO 8 has a 4-socket revolving device with smooth reverse motion. The device ensures precise fixation of lenses in relation to the optical axis, as well as their easy replacement. A standard microscope kit includes two eyepieces (wide-angle). They have magnification: 10X (linear field of view 18 millimeters) and 20X (linear field of view 11 millimeters). | For optical studies in various fields of biology and for research work | 2021 | no |  |  |
| 6 | Scales VK-600 | Laboratory scales "Massa-K" VK-600 with a division value of up to 0.01 g provide high stability of readings when operating from the network and from a battery. Electronic laboratory scales VK II accuracy class are intended for static measurements of the mass of various substances and materials at enterprises and in research and production laboratories of various industries.  Electronic laboratory scales VK have the ability to work in several units of weight measurement and weighing modes. |  | 2021 | no |  |  |
| 7 | Steam sterilizer (CEFLA autoclave) with  accessories, version B  Classic-17 | Main characteristics: Chamber volume 17 l; Number of doors 1; Voltage 220 V; Power 1600 kW; Chamber dimensions 250x350 mm;  Width 480 mm; Depth 560 mm; Height 420 mm; Weight (without packaging) 53 kg;  The homeland of the brand is Italy. The sterilization effect is achieved through the combined action of steam and high temperature; currently this is one of the most effective methods of sterilization. | An autoclave is used to sterilize nutrient media. | **2021** | no |  |  |
| 8 | Air conditioner ACH-12AS | Split system; Class A; auto restart; I-Feel; self-cleaning; anti-mold; R410A; copper installation. Specifications:  Cooling capacity, BTU/h 12000; Cooling power, W 3500; Heating power, BTU/h 12950; Heating power, W 3600; Weight (internal/external), kg 9/28; Packaged weight (internal/external), kg 11/33; Power consumption (cooling), W 1120; Power consumption (heating), W 1080; Noise level (Internal/External), dB(A) 41/52. | To maintain temperature conditions when performing research work. | 2022 | no |  |  |
| 9 | Laboratory water bath Stegler WB-4 | Steel body made of cold rolled stainless steel, powder coated; Microprocessor control with synchronization function; Digital display; A system of 3 concentric steel rings allows you to place various flasks up to 1 liter in volume, glasses, evaporation cups, etc. in the bath; The heating element is protected from overheating; Indication of heater status and emergency protection. Number of seats: 2 rows x 2 seats  Heating: (Troom+5) … +100 °C  Volume:14.62 l  Accuracy: Volume temperature gradient: ±1.0 °C  Timer:0 ... 999 min  Accuracy: installation: ±0.1 °С maintenance: ±0.5 °С. | Used for distillation, concentration, drying and thermostatic heating of samples and specimens. | 2022 | no |  |  |
| 10 | Microscope Altami BIO 1 (Trino LED (1015) + U3CMOS14000KPA) | Infinity Corrected Optical System (ICCOS) allows for high contrast and bright images, excellent performance, advanced technology, a wide range of additional options (phase contrast, dark field, polarized light), additional eyepieces and objectives, phase contrast research kit , dark field, etc.  The microscope is equipped with a 5- slots revolving arrangementv, which ensures easy change and precise fixation of lenses relative to the optical axis, and a wide range of options makes this microscope a universal biological microscope. The biological microscope Altami BIO 1 has a large convenient stage with overall dimensions of 175 by 145 millimeters with two-coordinate movement. Thanks to the special design of the table, it is possible to rotate it counterclockwise and clockwise. This is necessary for the convenience of conducting research. The limit of clockwise rotation is 90 degrees, counterclockwise - 20 degrees. Thanks to the trinocular attachment, a digital USB camera is attached to the microscope to transfer images of the observed object to a computer monitor. | For optical studies in various fields of biology and for research work | 2022 | no |  |  |

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