



agraTronix 01210 Portable Silage Tester Owner's Manual

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**Operator's Manual
Model 01210
Portable Silage Tester**

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INTRODUCTION

Congratulations on your purchase of a new AgraTronix Model 1210 Silage Tester. 1210 is an accurate, portable unit designed for testing the moisture of green and ensiled forages. Using the grain tray provided, it also tests high and low moisture grains.

Your 1210 is a precision electronic instrument. Handle it with reasonable care and operate it according to the instructions in this booklet, and it will give you years of reliable use.

PRE-INSPECTION

When you receive your 1210, immediately check for the following:

1. That the tester is complete with sample bags, log charts, grain tray, and thermometer.
2. That there is no visible damage.

BATTERY INSTALLATION

Before using your tester, one (1) nine-volt alkaline battery (not included) must be installed as follows:

1. Turn your tester over so that the back is facing up. Remove the base by unscrewing the four (4) screws.
2. Remove the protective bag (if any) from the battery and snap the battery clip onto the terminals.
3. If replacing the battery, make sure to place the battery snugly under the retaining spring.
4. Re-install the back of the case.

BATTERY TESTING

Press the "TEST" button on the front panel. The display will read 90.0 (indicating 9 volts) when the battery is fully charged. The battery should be replaced when the display reads 70.5 (70.5 volts) or below.

SAMPLING PROCEDURE

It is important to understand that even though the result of a particular reading may be very accurate, it may be of little or no value unless the reading is representative of the entire mass being tested. Always take several samplings in various locations. The greater the variations in readings, the greater the number of samples that should be tested.

1. Select material considered typical of the batch.
2. Do not test badly chopped forages.

3. Make sure that the samples are as free from dust and foreign matter as possible.
4. Take three (3) to five (5) samples at various locations of the batch and average the results.
5. Thoroughly mix each sample before taking material to fill the sample bag.
6. Do not mix material that is obviously very dry with similar material where the bulk is much wetter; for example, the layer of forage or grain on top of a wagon which has traveled some distance.
7. **DO NOT DELAY TESTS FOR MORE THAN 30 MINUTES ON FRESH CHOPPED FORAGE. DO NOT ATTEMPT TESTS ON MATERIAL WHERE FERMENTATION OR HEATING HAS TAKEN PLACE OR WHERE MOLD FORMATION HAS STARTED.**

IMPORTANT SILAGE TESTING NOTES AND REMINDERS:

1. **Repeated tests on the same sample or a sample left in the tester longer than a normal test duration (1 minute), may result in false readings.**
2. **If the sample is too thick (less than 4 turns), or too thin (more than 5-1/2 turns), it must be rejected, as false readings are inevitable.**
3. **Remember, green material must be tested within 30 minutes of chopping and before heating or fermentation has taken place.**
4. We recommend the use of only Agratronix 1210 sample bags, which are tested and made to standards that will produce reliable results.
5. If two decimal points show, one between each digit of the display, the tester is overloaded. The most likely cause is that the sample is too wet and outside the operating range of the tester. Check that no liquid has been squeezed from the sample bag and contaminated the electrodes in the test chamber. Clean out the sample chamber if necessary.

TEST PROCEDURE – GRAIN

1. Select a representative sample of grain to be tested.
2. Fill clean grain tray with grain. Compact the sample by lightly patting and smooth off level with the top.
3. Insert the full tray into the test chamber and center the tray in the chamber.
4. Apply pressure to the sample by turning the control knob clockwise until the yellow indicator band appears and the lower edge is level with the knob face.
5. Press the “BATTERY” button to confirm that the battery voltage is within the working limits. The digital display must read more than 75.0 (7.5 volts) or the battery should be replaced.
6. Press the “SAMPLE” button and note log reading from the digital display.
7. Unwind the pressure knob and remove the sample tray. Check the temperature of the sample using the tester’s thermometer.
8. Refer to the temperature correction table for grains on the log charts. Apply the temperature correction factor to the log reading according to the chart.

IMPORTANT: APPLY TEMPERATURE CORRECTION TO LOG READING BEFORE LOOKING UP MOISTURE %.

9. Refer to the appropriate log chart of the grain under test and read moisture content against the CORRECTED log reading.

NOTES:

1. Keep hands away from the ends of test chamber when taking readings, and never place the tester on a metal surface when testing, or false readings will result.
2. If the sample of grain is to be held for even a short period before being tested for moisture content, the grain should be placed in tightly closed, air-tight containers, such as a zip-lock plastic bag or a jar.
3. Variations between readings from your 1210 and your local elevator are inevitable and normal. (Readings from two or more elevators will vary.) We recommend that you take samples of grain at different moisture levels to your elevator and note any variations between your 1210 and your elevator's readings. Apply these variations as a correction factor to the appropriate log charts.

MAINTENANCE AND CARE

1. The Agratronix 1210 is a precision-built, electronic instrument. Do not subject it to prolonged periods of heat, cold or excessive moisture. Never immerse 1210 in water and leave it out in the rain.
2. Your 1210 must be kept clean. When cleaning is necessary, wipe the tester with a slightly damp cloth. Make sure to clean the electrodes in the test chamber. Bearing in mind that your 1210 is designed to detect moisture, cleaning should be done at least 12 hours before use.
3. If the digital display reads below 75.0 (7.5 volts) when the "TEST" button is depressed, the battery must be replaced. (See Battery Installation).

TEST PROCEDURE – SILAGE

1. Prepare the tester for use by LIGHTLY unwinding the pressure control knob counter-clockwise as far as it will go. The indicator mark (a small dot on the top of the knob) should be pointed toward the display panel.

IMPORTANT: DO NOT OVERWIND!

2. Remove a sample bag from the storage compartment in the tester and open it with a slicing action of your thumb and forefinger.
3. Select a representative sample of the material to be tested (refer to Sampling Procedure). Fill the sample bag with as much material as possible, gently compressing with your fingers.
4. Check that the bag seal is free from material. Pinch the end of the seal and draw fingers across to close the bag.
5. Make sure that the silage is uniformly packed and flattened in the bag by gently patting and pressing between your hands. The pack should be about 3/4" (20mm) thick.
6. Insert the sample pack into the test chamber and position it equally spaced between the two electrodes on the bottom of the test chamber.
7. Apply pressure to the sample by turning the control knob clockwise, carefully counting the number of turns. Continue turning and counting until the yellow indicator band in the center of the knob appears and its lower edge is level with the knob face. This indicates correct pressure. Stop turning.
 - The number of turns applied should be within the range of 4 to 5-1/2, indicating that the amount of material under test is correct. REJECT ALL TEST SAMPLES REQUIRING TURNS OUTSIDE THIS RANGE, OR FALSE READINGS WILL RESULT.
 - For optimum accuracy, aim for 4-1/2 to 5 turns by packing the bags accordingly.
8. Once the correct pressure has been reached, wait 20 to 25 seconds. During this waiting period, press the "BATTERY" button to confirm that the battery voltage is within the working limits. The digital display must read more than 75.0 (7.5 volts) or the battery should be replaced.

9. Press the "SAMPLE" button and record the log reading from the digital display.
10. Unwind the pressure knob and remove the sample bag. Check the temperature of the sample inside the bag using the tester's thermometer.
11. Refer to the temperature correction table on the log chart for the material being tested. Apply the temperature correction factor to the log reading according to the chart. **IMPORTANT: APPLY TEMPERATURE CORRECTION TO LOG READING BEFORE LOOKING UP MOISTURE OR DRY MATTER%.**
12. Refer to the proper log chart of the material under test. Read Moisture or Dry Matter content where the CORRECTED log reading and number of turns intersect.
 - **EXAMPLE:** When testing fresh green chopped alfalfa, the "Green Chopped Alfalfa Chart" should be used. If the sample log reading is 57.4, and the sample temperature is 81°F (27°C), first adjust the log reading for temperature by -3.5. (The temperature is halfway between a correction of -2 and -5). The corrected log reading is $57.4 - 3.5 = 53.9$. If the number of turns is just under 5, then the moisture content of the sample is about 54.5%.
 - As a helpful guide, all silage log charts for fresh, chopped forage are presented as % MOISTURE. Charts for ensiled silage are presented as % DRY MATTER.

WARRANTY AND REPAIR INFORMATION

1. THE WARRANTY ON YOUR TESTER IS NOT EFFECTIVE UNLESS YOU PROVIDE PROOF OF PURCHASE.
2. If your 1210 tester should display inaccurate readings or cease to operate, follow these steps:
 - Review the Operator's Manual to be sure correct testing procedures are being used.
 - Replace the battery.
 - Call our Customer Service department toll-free at 1-800-8219542 between 8:30 a.m. and 4:30 p.m. EST. Describe your problem to service personnel, so that a determination can be made as to what is wrong with your tester. If necessary, arrangements can be made for repair or replacement. Make sure to have your 1210's serial number available.
 - If service is required and return authorization has been obtained, pack the tester carefully and return it to Agratronix prepaid.
 - Enclose a brief note describing what is wrong with your tester, name, address, and phone number.
 - Do not return your 1210 without following the above procedure. There will be a handling charge made on all units returned and not found to be defective.
 - Repairs will be made free of charge during the warranty period. After the warranty expires, your tester will be repaired for the cost of materials, labor, and shipping.

WARRANTY


Your Agratronix 1210 is guaranteed to be free from defects in materials and workmanship for one year from the date of retail purchase. This warranty does not cover the battery or damage resulting from misuse, neglect, accident, or improper installation or maintenance. This warranty does not apply to any product which has been repaired or altered outside our factory.

The foregoing warranty is exclusive and in lieu of all other warranties of merchantability, fitness for purpose, and any other type, whether expressed or implied. Agratronix neither assumes nor authorizes anyone to assume for it any other obligation or liability in connection with its the product and will not be liable for consequential damages.

The accuracy of forage and grain moisture testing is influenced by many factors beyond the control of the manufacturer of this instrument, and Agratronix will not be responsible for the harvesting, storage, conditioning,

Ask your local retailer for more information on other Agratronix portable moisture testers or call us direct.





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INTRODUCTION
Congratulations on your purchase of a new agraTronix Model 01210 Silage Tester. This Tester is an accurate, portable and affordable device for determining the water-soluble carbohydrates (WSC) content of silage. The Tester is designed to be used in the field or in the laboratory. It is easy to use and requires no special training. The Tester is a portable, self-contained unit that can be used in the field or in the laboratory. It is easy to use and requires no special training. The Tester is a portable, self-contained unit that can be used in the field or in the laboratory. It is easy to use and requires no special training.

PRE-REQUISITES
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BATTERY INSTALLATION
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