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STATE AGRICULTURAL COLLEGE.

The Agricultural Experiment Station.

SPECIAL BULLETIN "A."

CONCERNING SUBJECTS

INVESTIGATED BY

THE EXPERIMENT STATION.

FORT COLLINS, COLORADO.

JANUARY, 1892.

Bulletins are free to all residents of the State interested in Agriculture in any of its branches, and to others as far as the edition will permit. Address, The Experiment Station, Fort Collins, Colorado.

SPECIAL BULLETIN "A."

The announcements from the sections of the Agricultural Experiment Station, contained herein, have a two-fold object.

First, that of conveying information as to the investigations conducted, and giving instructions to those desiring to communicate with the Station, or who wish to send samples or specimens for identification or analysis, or to file in the museums and cabinets of the institution. Second, to invite, through the proper channels, co-operation in experiments and investigations in the most available condition, and such information as may be of value to the Station and the State of Colorado.

The sections of the Experiment Station are: (1) Agriculture; (2) Botany and Horticulture; (3) Chemistry; (4) Meteorology and Irrigation Engineering; (5) Entomology.

Address ALL correspondence to

The Agricultural Experiment Station,
Fort Collins, Colorado.

DISTRIBUTION OF SEEDS AND PLANTS.

The law provides for a limited distribution of seeds and plants from the College, which may be procured by addressing HON. FRANK J. ANNIS, Secretary State Board of Agriculture, Fort Collins, Colorado. Garden seeds, grains, grasses and seeds of some other plants we would be glad to supply the farmers from this Station. We wish, as recompense, a careful report of results, whether successful or unsuccessful, with treatment and conditions.

Walter J. Quick

Director.

The Agricultural Section.

In this section of the Experiment Station we solicit information respecting the success or failure of the various crops tried, or being introduced into Colorado, and will be glad to correspond with farmers so interested, or who can impart or desire information respecting the most advantageous crop rotations for the different sections of the State.

We desire to consider with the farmers the practicability of certain feeding rations and crop rotations.

In making up feeding rations it is important to know what feeding stuffs you have at hand; what can be procured in your vicinity, and the price commanding them; also, whether the cost shall figure in the ration decided upon, that is, the best and cheapest, or simply the best, cheapness not taken into consideration.

In deciding the best rotation of crops for a certain locality, we desire to know the altitude, kind of crops, amount of water supply, and any other information bearing upon the successful and profitable cultivation of the soil in question.

Often we are enabled to supply correct names of grains, and we will gladly give any information in our possession. In sending grains for identification, we prefer to have the entire plant just as it grew. Especially is this desirable in the smaller grains and grasses. Often we can tell from simply the grain, or grain and head.

This Section will gladly test any new varieties of farm crops as to adaptability, productiveness and for comparison, and report the results for the benefit of the farmers.

We are supplied with apparatus for testing the

quality of milk, and for the separation of cream from milk. Those desiring their cow's tested can have it done by sending one pint of milk, when they live in close proximity to the College. Good results can not be obtained from old samples. Several trials are better in all cases. The milk for testing should be a fair sample of an entire milking well mixed.

SECTION OF BOTANY AND HORTICULTURE.

This Section is prepared to make tests of farm and garden seeds, to determine their vitality and purity, to determine plants that may be sent for name, to name and give information concerning the weeds of the farm and garden, and to enter upon the study of any diseases that may attack cultivated plants.

Seeds sent for testing should be average samples of the lot; the quantity should be sufficient for a fair test—of small seeds, 2 to 4 ounces; of the larger seeds, 4 to 8 ounces. Samples may be sent by mail in stout paper bags. Always write the name of the sender on the outside of the package, and send a letter of advise, giving name of variety, of whom purchased, and in what year grown, and such other information as may be thought desirable.

Plants for name may be sent by mail. If pressed and dried between sheets of paper, they should be protected from injury in the mail by pieces of heavy paste-board. Plants may be sent in the fresh state by packing with slightly moist moss in heavy paper.

Small plants should be sent entire, root, leaves, flowers and fruit. Of larger plants, send a portion of the stem, with leaves, flowers and fruit. In writing, give the height of plants thus sent in part,

and always give the character of the soil in which the plant grew, whether dry, moist or wet. It is also desirable to know the elevation, and any peculiarities that may have been observed.

CHEMICAL SECTION.

This section is prepared to analyze and test fertilizers, cattle-food, soils, milk, butter, water and other agricultural materials and products, and to give information on various subjects of agricultural science, for use and advantage of the citizens of Colorado.

These analyses are made free of charge for the citizens of Colorado, only on the following conditions:

1—That results are of use to the public, and are free to be published as a part of the Station report.

2—That all question in regard to the articles will be truthfully answered by the parties sending them.

3—That the sample be selected according to the instructions of the Station for sampling the same, and the person sending it sign the certificate.

Work done for individual benefit will be charged for at moderate prices.

All other chemical work proper to the Experiment Station, that can be used for public benefit, will be made free of charge.

The Station will undertake no work, the result of which is not at its disposal to use or publish, if deemed advisable for the public good.

INSTRUCTIONS FOR PROCURING SAMPLES.

Samples of water to be analyzed should be, for ordinary water analysis, one gallon; for mineral analysis, three gallons, and should be put up in

clean glass vessels, with a clean, new cork, and completely filled and sealed.

Samples of milk should not be less than one pint. and should be thoroughly mixed before being taken.

Samples of rock, coal or minerals should be selected by pulverizing twenty pounds to the size of hickory nuts, and selecting from these one pound.

Samples of fertilizers are made by taking a sample from the unbroken package at the top, middle and bottom; these are intimately mixed on paper, and a quart selected and put in a clean, dry bottle, and well corked.

Each sample for gratuitous analysis must be accompanied by a description made by filling out, legibly and as fully as possible, the blanks below.

1—Samplers mark, or name.
2—Brand.
3—Name and address of manufacturer.
4—Name and address of dealer.
5—Date of taking this sample.
6—Price per ton, pound or package.
7—For what purpose it is used.
8—The percentage of valuable ingredients, if known.
9—Such other information as the Station may require.

ALL EXPENSES MUST BE PAID TO THE STATION.

Samples of soil are taken according to the object of analysis, either (1) from one or from several spots in the field. (2) In case several portions of earth are taken from points distributed in a regular manner over the field, all of which are carefully mixed together, and ten to fifteen pounds of the mixture, free from any large stones, are preserved as the average sample.

"Have a wooden box made, six inches long and wide, from nine to twelve inches deep, accord-

ing to the depth of the soil and sub-soil of the field. Mark out in the field a space of about twelve inches square; dig round in a slanting direction a trench, so as to leave undisturbed a block of soil, with its sub-soil, from nine to twelve inches deep; trim this block, so as to make it fit into the wooden box; invert the open box over it, press down firmly, then pass a spade under the box and lift it up, gently turn over the box and nail on the lid. The soil will then be received in the exact position in which it is found in the field. In case of very light sandy and porous soils, the wooden box may be at once inverted over the soil and forced down by pressure, and then dug out."

The above directions are issued by the Royal Agricultural Society for samples of soil for analysis.

Samples will be analyzed as promptly as possible, in the order in which they are received.

FOR SUGAR BEETS—

Give the name, date of planting and harvesting, method of cultivation, yield per acre in tons, the kind of soil upon which the beets are grown and all other facts that will throw light upon the subject.

ENTOMOLOGICAL SECTION.

Inquiries concerning insects should always be accompanied with specimens, and, when possible, with samples of the injuries that are being done. The sender should also give such information as he can in regard to the circumstances, location and date of capture, and of the nature and extent of the injuries.

When insects are sent, whether by mail or express, it is necessary that they should be enclosed in strong, tight boxes, and there should be no holes made for air. When sent long distances there should be inclosed with them some of their natural food, if obtainable: if not, put in a little grass, or other green leaves. If dead insects are sent, there should be enough cotton added to the box to prevent their shaking about and becoming broken.

Packages may be sent by mail at the rate of one cent an ounce or fraction thereof, if no writing is inclosed.

The Entomologist is always glad to receive insects, whether injurious or not, from any part of the State; but it is especially desirous that he shall be promptly notified of all depredations of injurious species.

SECTION OF METEROLOGY AND IRRIGATION ENGINEERING.

This section invites correspondence upon the topics included within its lines of investigation, and especially solicits information bearing upon irrigation; information regarding canals already constructed, or to be constructed; reservoirs; seeped and alkalied lands, and methods attempted for improving them; data as to the amount of water used, etc. This section contemplates the preparation of a description of the irrigation system and practice of the State, and would be obliged for any information in regard thereto.

It would be glad to receive plans or photographs of irrigation structures, and will, if desired, make exchanges of similar nature for them.

It desires to enter into correspondence with any farmer who is willing to co-operate in experiments to determine the amount of water which is actually used in the irrigation of any crop. The area available should be one acre or more, served from one lateral. A fall of twelve inches or more is needed. The section will co-operate with canal organizations, furnishing instruments for a few canals for this purpose. The experiments would take but little time on the part of those co-operating, and would not interfere in any way with the unrestricted use of water.

If fields of alfalfa, of wheat, and other field crops can be obtained in various parts of the State, the data obtained will be of much value. Some orchards and small fruit plantations are also desired. Full credit will be given in the printed reports to those co-operating.