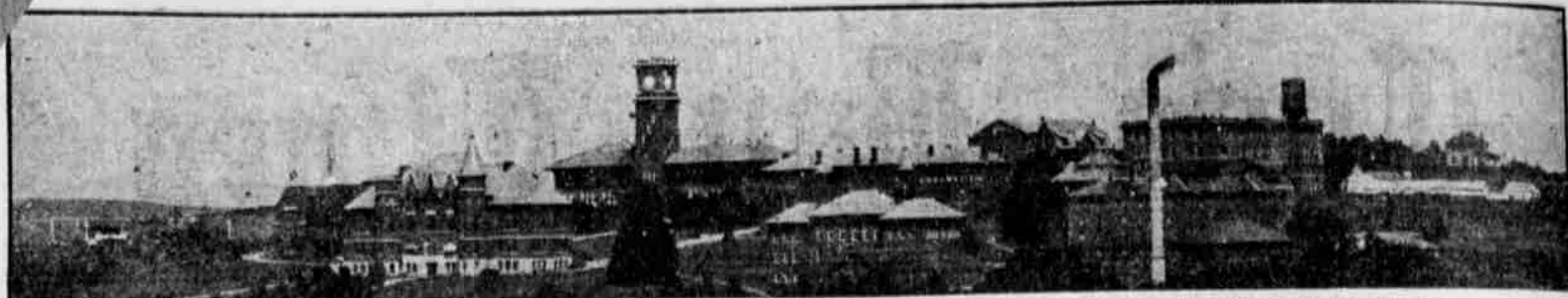


The Agricultural College Is a Friend to the Farmer

Bulletins and News Notes From the Staff at Pullman.



VIEW OF WASHINGTON AGRICULTURAL COLLEGE AT PULLMAN, WASH. ITS SOLE AIM IS TO AID AGRICULTURISTS.

Making the Best of Home-Made Vinegar

APPLE vinegar or cider vinegar is now made by commercial plants to such an extent that the home-made product is rarely seen and has but little place in the market.

Apple cider will go through the normal process of fermentation and develop vinegar of splendid quality, if given the proper temperature and time for development. As the cider is stored in the barrels it should be exposed as much as possible to the air and be kept in a temperature above 80 degrees and below 100 degrees.

The best results will be obtained if the material is kept at a temperature ranging between 80 and 90 degrees. At this temperature it requires approximately a year for cider to develop enough acid to pass as first-class vinegar. It should have between 4 and 7 per cent of acid content, and with the process of making being that of slow ferment in barrel quantities, it will seldom reach 6 per cent of acid content.

Ordinarily the vinegar that is made by being permitted to ferment in barrel quantities must be kept in a basement or cellar storage where the high temperature can be obtained. It does not kill the ferment in the vinegar to pass below 80 degrees in temperature, but it retards its action, and the longer the material is in the process of making, the less valuable it is and the more difficulties are liable to be encountered in the work.

The best results will be obtained if the head of the barrel is taken out and the barrel left entirely open. It can be stirred to advantage once in a while, but ordinarily the process of letting it stand entirely undisturbed will develop a very clear and satisfactory grade of material.

The mother of vinegar that develops ordinarily in the top of the barrel is of no special advantage after it assumes the form of a condensed or hard cake. As long as it is in a loose, slimy form, it will work fairly rapidly, but as soon as it assumes the caked form it may as well be removed from the barrel. Ordinarily if touched or pressed down on one side, it will sink to the bottom of the barrel.

The live, active mother of vinegar when collecting appears as a thin or mucilaginous gelatine-like mass, and is rapidly reproducing the ferment yeast that is making the vinegar. It is not necessary, in all cases, to use this mother of vinegar to start the process of fermentation. It is a good plan, however, to use small quantities of it for placing in each barrel of cider to start the process of fermentation.

If this is not done a great many different kinds of bacteria will develop in the cider and not all of these will tend directly to the manufacture of acetic acid, which is the valuable acid in vinegar.

The home process of vinegar manufacture is slow, but easily handled, and can, in a small way, be carried on very satisfactorily.

Burn Refuse in Orchards.

Dead and diseased wood in the orchard should be removed and burned as soon as possible. The Nebraska College of Agriculture finds that if the orchard is kept clean of such refuse the problems of insect and fungus control are much easier.

A page of interesting items from the Oregon Agricultural College at Corvallis will alternate in the farm weekly with a page of news notes from the Washington State College at Pullman. This will afford an interchange of views from the two big agricultural colleges of the Northwest that should prove of benefit to the reader, for the institutions deal with similar problems.

Needs of Dry Land Belt in Washington

THE needs of dry land agriculture in Washington are great. They may be grouped under four heads, as follows: Improved Methods of Tillage; Introduction of Livestock; Improved Crops, especially forage crops, and Better Living Conditions in and About the Farm Home.

Improved Methods of Tillage.

With reference to the first of these there is needed a considerable amount of investigational work along the line of moisture requirements of plants, the handling of soil to conserve moisture and fertility, and prevent blowing. Considerable investigation has been carried on in this line, but much remains to be done. There is also great need of the dissemination among the farmers of knowledge already obtained. Investigations in this connection must be carried on primarily in the dry belt.

The more extensive production of livestock will undoubtedly solve many of the agricultural problems of this district. This problem is one which calls for propaganda work rather than investigation. It can best be made by rendering assistance to farmers in obtaining and selecting stock and giving instruction for the caring of the same and production of suitable feed.

The state can well afford to expend some money in the introduction of good stock for breeding purposes into this district. The use of this stock should be carefully supervised by members of the department staff, and the stock placed where it will do the most good.

Improved Crops.

Perhaps the greatest need in the dry belt at the present time is investigation to determine the forage crops most suited to the district. New and promising forage crop plants are constantly being introduced into the country and being produced by plant breeders within the country. These should be tested out under the crop conditions of our dry belt and distributed among the farmers first in an experimental way, and later, if satisfactory, extensively encouraged.

This work of crop testing and breeding of agricultural plants can be carried on adequately only by the establishment of a branch experiment station in the dry belt. This, then, becomes the greatest need of this district. The establishment of such a station will go far toward solving many of the problems of the district.

Improved Living Conditions.

One of the difficulties connected with the dry land agriculture in Washington is the lack of home conveniences and comforts on the farm. As one travels over this district farmhouse after farmhouse is passed without seeing a tree or shrub growing near.

The houses themselves are frequently poorly constructed, and anything but homelike. The general planting of trees both for shade and fruit about the farm homes will do much to ameliorate living conditions.

Much also may be done by the encouragement of poultry raising, gardening and work along the line of home economics; for upon many of these farms which are more remotely situated from the main lines of travel, the life of the women and children must be far from attractive. Their nearest neighbors are frequently two or three miles distant.

Anything, therefore, which can be done to improve living conditions will tend to render the tenancy of the land more stable and greatly improve the economic conditions of the country as a whole.—From first annual report of Dry Land Department of Washington State College.

Dairy butter has made its way on its merit and everything lost to oleomargarine is chargeable to itself alone, for it never was any good in the first place.

Insects That Will Injure Clover Seed

THE adult of the clover seed midge (*Dasyneura leguminicola*) is a tiny delicate midge resembling the Hessian fly. It appears in late Spring when clover is beginning to head and by means of a long tail-like ovipositor it pushes its microscopic yellowish eggs in among the hairs surrounding the seed capsules of the developing clover heads. The pinkish maggots work their way into the open florets to feed on the seeds.

Their feeding prevents the opening of such florets and therefore the heads are irregular, a condition known to farmers as "sick heads." Toward the end of June these maggots drop to the ground where they cocoon and pupate, and several weeks later the adults of the Summer brood appear.

At the time that the heads of the second crop of clover are forming the adult midges become abundant and repeat the life cycle just given. There may be two or even three such generations during the season, the last maggots doing the most harm to the seed.

The adult of the clover seed chalcid (*Bruchophagus funebris*) is a tiny black wasp which measures about one-twelfth of an inch in length and whose wings are practically veinless. These adults appear in early June to deposit their microscopic eggs in the soft seeds of the withering florets.

The maggots develop from these eggs and work their way into the center of the seed on which they feed. When fully grown they pupate within the seeds and later appear as adults during August. These place their eggs in the second growth of clover heads and by the time the late crop is to be threshed for seed the insects have emerged.

This leaves the seeds hollow so that they are easily blown out in threshing, although the heads in this case may be well filled. As with the midge there may be two or three generations during the season.

Both of these insects are widely distributed wherever clover is grown for seed, and both of them at times prove very destructive, affecting from 20 to 80 per cent of the seed crop, states Professor A. L. Melander, entomologist of the Washington Agricultural Experiment Station at Pullman.

Fortunately the pests can be controlled by harvesting the first crop of clover two or three weeks earlier than usual. The cutting should be done before the bloom withers, as at that time the young maggots would be unable to mature on the cut heads. This destruction of the first brood carries with it a decided lessening of the late broods, so that when practiced the seed crop may be almost entirely saved.

The early cutting of the first crop for hay hastens the development of the second cutting, so that when the second brood of adults appear there are but few green heads for them to work on.

To guard against tree repair fakers, or quack tree surgeons, the Massachusetts Forestry Association will inspect the shade trees belonging to its members, free of charge.

Proper Feed and Care of the Pregnant Mare

ON many farms in Washington there are mares at the present time which are with foal. So far, the mare's need of additional nutrients to develop the unborn youngster has not been very great. From this time on the amount of nourishment that the fetus will demand will constantly increase, since the greatest growth is made during the last few months of pregnancy. Hence the present is the time to pay attention to the ration which the brood mare is receiving.

At this season, a pregnant mare represents two animals. Overwork at this stage is equivalent to starving the colt before it is born, states Professor William Hielop, animal husbandman of the State Experiment Station, at Pullman. If the mare is forced to do a large amount of work, one or the other must suffer. Of course exercise is essential.

Furthermore, the pregnant mare can and should do some work, for entire cessation would be likely to cause digestive troubles. As long as the mare is not overtaxed, she may be worked moderately to within a few days of foaling with no bad effects.

Because grain is high there is a very common disposition to save it and to supply the deficiency by using entirely too much "filler" as found in straw and timothy hay. There is too much indigestible fiber in such feeds, and as a result the mare has a staring coat, dull eyes, low spirits, and a shoddy appearance.

The mare should be "humored" in her feeding at this time. The fullness of the abdominal cavity calls for concentrated feeds, rather than bulky ones, and brings out the importance of feeding three times a day instead of twice, which may be all right for idle horses.

Good, bright alfalfa or heavy mixed clover and timothy hay, with oats, bran, and oil meal, fed in the proportion by weight of six, three, one, make a most desirable ration. Protein is highly essential during the latter part of the gestation period, while bran will tend to prevent constipation in the mare.

A quiet but roomy box stall that is well bedded and free from draughts should be provided for the act of foaling. The loss of a few hours' sleep in assisting the mare to foal, if necessary, is but a trifle, so be on hand when the critical time arrives.

Awful 'Sponsibility.

Two women were absorbingly engaged in an intimate conversation on the street car. No wonder another woman was much interested when she overheard the following:

"Got a letter from my ol' man. Hadn't heard from him for a long time. Says he's comin' home."

"Now, ain't that too bad," said the other consolingly. "An' you got such a good start."

"Yes, I hate it. Was gettin' along so well."

"My experience was th' same. Was makin' money and livin' easy, when my ol' man come back. He set aroun' and et until my easy time was over."

Then the woman who had received the letter heaved a sigh. "It's an awful 'sponsibility on a woman, havin' a husban' at home," she said.

—Indianapolis News.

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