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### NOVEMBER: 26, 1914

the roughage at the time of mixing, in the feed room, thus promoting palatibility, and more complete digestion on account of being mixed with the bulky feed at the time of eating, and in this way preventing what is called "bolting the feed," which some greedy cows are inclined to practice. However, nature provides against harm from this, by requiring a cow to "chew her cud" which overcomes to a large extent the ill effects of bolting.

On account of the abundance of apples this year, feeders may well store some of the surplus crop to be pulped and mixed with the roughage. If not fed in too large quantities at a time, apples are good feed for a cow, especially when pulped and mixed with dry feed, such as hay and straw. The bad effects of apples are seen where cows gorge themselves on apples after breaking into an orchard.

Whether cows should be fed before or after milking is a matter of convenience and habit. If the cows are accustomed to being fed before milking, this should be the rule, otherwise they become uneasy and will not "give down" their However, as a rule, it is better to milk first and feed afterwards where this can be followed without interfering too much with other farm work, meals at the house, etc., all of which have to be considered when making the program for the winter. But when the plan has been carefully thought out, it should be carefully followed, because next to a man, or a pig, the cow is the most restless animal on the farm if meals are not ready on time.

Care should be exercised in keeping the angers clean, and free from refuse. All "leftmangers clean, and free from refuse. overs" should be completely removed daily, and if it is found that any cow is not eating her allowance fairly clean, the ration should be reduced until she regains her appetite. It is folly to continue throwing expensive feed in front of a cow when she is eating but a part of it-"mincing at it" as farmers say. Nothing will spoil a cow's appetite like too much feed, or having decayed refuse feed constantly in the manger.

The economic feeding of cows in winter is quite a problem, well worth the careful study of all cow feeders. With good cows, the question of profit and loss is largely determined by the way in which the cows are fed. The wise feeder will study both the science and practice of feeding, but after all, nothing will take the place of what we have called "cow-feeding sense," which is a sixth sense with some feeders, and should be cultivated by all cow owners. 0. A. C.

H. H. DEAN.

# THE FARMER'S ADVOCATE.

## Spring Vs. Fall Planting.

The results of experimental work appear favorable to the fall planting of fruit trees. A discussion of the matter is rather late at this season of the year, but some information gleaned from an address by F. M. Clement, Director of the Vineland Experiment Station, before the Fruit Growers' Convention, is valuable at any time. With many kinds of fruit there is perhaps little difference whether they are planted in the spring or in the fall. Those kinds that start rather late in the spring lend themselves to spring planting better than those that throw their buds open at an early date. Cherries, and sweet varieties particularly, renew life early in the season, and for this reason often thrive better when set in the fall.

In a consideration of fall vs. spring planting there are four factors to be taken into account. One, the availability of well-ripened nursery stock that can be delivered in mid or late October; two, the time or labor required to plant; three soil in which they are to be planted, and four, the climatic or weather conditions to which newly-planted trees will be exposed during the the winter. The autumn of 1914 was almost exceptionally warm and the young trees grew well on into the fall, yet young stock, suitable for planting, was procurable, and 200 well-ripened apple trees were planted during the first week of November on the Vineland Station farm.

The matter of labor is a variable factor. Different farms with different systems will vary in their busy seasons to a certain extent, yet both fall and spring are replete with tasks that must be carried to completion with haste. Usually though a few days in the fall will not affect things as much as the same time during seeding in the spring.

The soil factor is important. Some difficulty may be experienced in harvesting the year's crop, plowing and preparing for the trees. It is usually wise to select a field upon which a hoed crop has been grown, or wiser still to grow a hoed crop on the soil selected for the orchard. When the trees are planted m the fall they should be plowed up to at once, for it is absolutely essential that all standing water be kept away from them. Open the ditches and run the water furrows. Bank the trees up to a height of about eight inches with soil, and then mulch with manure close around the mound. Leave the tops as they came from the nursery, without pruning, and cut away dead or damaged parts in the spring.

The weather conditions are largely the deciding factor, and a factor that must be dealt with in the fall planting of nursery stock. Winter injury results from the drying out of the branches. and to prevent this water to take the place of the moisture lost through evaporation. Whatever the danger may amount to in different winters, the loss from fall planting is not so heavy on the average as from spring-planted stock. Experiments conducted at Vineland on plums and pears show a decided advantage in favor of fall planting. Six Reine Claude plums and six Bartlett pears were planted in the falls of 1911, 1912 and 1913. Duplicate check rows were planted in the spring of 1912, 1913 and 1914. In each case there is a difference in favor of the fall-planted trees. The new growth during 1914 of those set first is a fair indication of the comparative importance of the different seasons' settings. The new growth during 1914 of those trees planted in the spring of 1912 averaged 227.9 inches, while those planted in the fall averaged 272.9 inches. This is the aggregate growth of all the different branches, and appears quite favorable to the fall-planted trees. No trees have been lost in the fall-planted rows, and only one in the spring-planted, the chief advantage in this case being the increased growth.

is covered with layers of albumen, the white, and finally with the lining membranes and shell.

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/ To encourage egg-laying is to cause a development of a number of these small yolks which otherwise might lie dormant in which otherwise might lie dormant in the ovaries. A hen might lay as many eggs in two years under favorable conditions as she would in six when food, environment and other conditions were adverse. The preduction of eggs depends upon the functional activity of the reproductive organs, and these organs are directly under the influences that the poultry keeper can largely control. It is claimed nowa days that egg-laying proclivities are transmitted through the male instead of the female, and the fact that a pullet is the daughter of a heavy-laying hen is no guarantee that she will excel in that regard. Apparently it must come from the grandmother through the sire, and no doubt it is the number of ovules or yolks that are in-fluenced in this way. Consequently to insure heavy production, housing, feeding and good care should not be expended upon birds whose sires do not carry propensities that promise heavy laying

Laying usually begins when the fowl ceases to grow, but occasionally some of the smaller and more precocious kinds will lay before they are completely matured. Premature laying is often considered an indication of reproductive vigor and is not looked upon with as much alarm as is This latter unfavorable circumretarded laying. stance may result from a check to growth at any stage of the bird's development, or from some disturbance affecting the habits, nutrition or comfort of the bird at some stage of its life previous to maturity.

The general conditions which govern egg production, and control the prime factor, viz., activity of the reproductive organs, are nourishment, regularity, comfort, constitution, exercise, cleanliness and broodiness. The reproductive organi may be active even when the secondary factors are unfavorable, but in such a case the hen will produce eggs to the destruction of her body and her vitality. Egg laying should take place as a consequence of healthy, comfortable surroundings and wholesome food. With some rations, such as rolled oats, fed by the hopper system, the amount consumed varies directly as the egg record showing the relation existing between consumption and production by the body of the fowl. Regularity and comfort go together, and such changes as that of ventilation in the house, of diet or from summer to winter quarters have a marked influence which the keen observer will not fail to see. Exercise affects the egg record only as it contributes to the health and vigor of the bird which is quickly translated into eggs. Broodiness is a negative factor which varies in intensity with different breeds, and limits so

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# HORTICULTURE.

### Where a Cover Crop Failed.

A peculiar incident in cover crop practice occurred this year in some of the orchards in Eastern Ontario. The slowness with which clovers  ${\tt grow}$  when sown in the orchard during the latter part of June or the first part of July renders them unpopular with many, and to overcome the slowness of such a crop rape and other quickgrowing annuals are resorted to.

Eastern Ontario growers require a cover crop that will harden up their wood in order to carry it through the winter uninjured by frost. At the Experimental Farm and in other zones throughout Eastern Ontario many growers have used vetches and rape for such a crop, but a peculiar instance occurred this year in connection with this mixture, which only emphasizes the variable face of conditions. Harold Jones, of Maitland, speaking at the convention held recently in Toronto of this mixture, said that in some parts the crop of apples was not up to the standard where the orchard had been sown to a cover crop of this combined mixture. The one commonly used consists of 20 pounds of common vetch with 6 to 10 pounds of dwarf Essex rape. In one orchard in particular in Durham county, which is under the direction of the District Representative, there, was an abundant set of apples, yet they did not color or size up as they should. No definite explanation of this fact is yet forthcoming, but the supposition is, however, that such a crop, particularly the rape, requires a considerable amount of moisture for its development, and too much water was taken from the soil when the fruit was growing. In this particular orchard the cover crop was sown at the beginning of July, but the season was so dry that cultivation, possibly, should have continued for a week or two weeks longer. In spite of this unfavorable report this Year, Prof. Macoun, of the Central Experimental Farm, claims that this mixture, for Eastern Ontario generally and for the Central Experimental Farm in particular, is the most reliable of any crop they can use.

# POULTRY.

### Why a Hen Does or Does Not Lav Eggs.

Most hens, if they live long enough, lay some eggs, but all hens do not lay the number of eggs that nature intended they should. The reproductive organs of the female are the source of the eggs, and in the ovaries of the hen is a mass of yolks of various sizes, from full grown to little specks that cannot be seen with the naked eye. Even a small reading glass will reveal others, and it is claimed that the entire number may vary from five hundred to thirty-six hundred. It is believed by some that the number of volks in each bird is definitely and constitutionally fixed. and that a fowl cannot lay more than were endowed upon her at the beginning. The aim in poultry husbandry is to encourage the hen to develop these yolks to a normal size, when the remaining mechanism of a mature hen will probably complete the operation of laying. As each yolk or ovule reaches maturity it passes into the oviduct. In its voyage through this passage it

what the output of those fowls given to that natural inclination.

# THE APIARY.

### The Beekeepers Convention.

The annual convention of the Ontario Beekeepers' Association was held in the York County Council Chambers, Toronto, on November 11 to 13.

The President, J. L. Byer, Markham, commented on the failure of the honey crop of the past season. The clover suffered severely during the winter, and a late frost in June stopped the nectar flow of that which survived. The shortage of this season's crop may be taken as a blessing in disguise. The abundant crop of 1918 almost slumped the market, and many wholesale houses had to carry large quantities over winter. This surplus has found a ready market, and the supply of honey now on hand is very limited.

The Deputy Minister of Agriculture, W. B. Roadhouse, occupied the chair at the first afternoon session. Acting in that capacity he came into close contact with the beekeepers, and learned at first hand their needs. He called upon W. A. Chrysler, of Chatham, a specialist in beekeeping for a paper, "Specializing in Beekeeping, its Advantages and Disadvantages." By constant application at one trade a man becomes a specialist in that work. Similarly with bees, by devoting one's whole time to beekeeping, one should excel in that work. The returns from a large apiary in a good season induce many to keep bees extensively, but such a season as the past one cautions the small beekeepers to consider before increasing the number of their colonies. 'It is easier this year to appreciate the disadvantages of specializing," said F. W. Krouse, of Guelph, who combines beekeeping with market gardening. "Last year I was almost persuaded to drop the garden and give the bees my whole attention, but this year's failure made me very thankful that my eggs were not all in the one Many are making a good living by debasket. voting their whole time to bees, and many are