

when the first blooms appeared, the second when in full bloom, and the third when half the blossoms had fallen, these being denominated early, medium and late cuttings, respectively. Incidentally there was made a comparison of the first, second and third crops.

The details of this investigation are reported in Bulletin No. 61 of the Utah Station, a copy of which may be obtained by addressing the Director at Logan. Below are given the more important facts, together with the conclusions that may be legitimately drawn from the results:

1. The largest annual yield of hay per acre is obtained by the method of early cutting and the lowest by the late, the average result standing as follows: Early cutting, 100; medium, 92; and late, 85.

2. The early cut alfalfa contains the highest per cent of protein and fat, the most valuable food constituents, and the lowest per cent of crude fiber, the most indigestible portion. The former decrease constantly, while the latter increases rapidly from early bloom to the full maturity of the plant.

3. The proportionate amount of leaves to stems is greater at early bloom than at any subsequent time, and both leaves and stems contain a greater per cent of protein and a less per cent of crude fiber at this time than at any later period in the growth of the plant. The relative proportion of leaves to stems in the different cuttings is as follows: Early, 42 to 58; medium, 40 to 60; late, 33 to 67.

4. Alfalfa leaves as compared with stems are very much richer in protein, fat and nitrogen-free extract, and they contain a much smaller proportion of crude fiber. (1) The per cent of the protein and fat grows constantly less and that of the crude fiber greater from the time of early bloom to maturity. The average composition of all cuttings and crops shows the leaves to contain 150 per cent more protein than the stems, 300 per cent more fat, 35 per cent more nitrogen-free extract, and 256 per cent less crude fiber.

5. The more important nutrients, protein and fat, have the highest per cent of digestibility in the early cuttings, and it grows less and less with the age of the plant.

6. In the feeding test, the highest gains were made from the early cuttings and the lowest from

(1) Therefore, as with clover, if you make lucerne into hay, do not hustle it about, but turn it over gently. Ed.

the late, the results standing proportionately as follows: Early cutting, 100; medium, 85; and late, 75.

7. The variation in the amount of the different cuttings eaten per day was very slight, being the highest for the early cutting and the lowest for the late, but the quantity of dry matter and also of digestible matter required for a pound of gain was decidedly lowest for the early cutting and highest for the late, the relative amounts of dry matter standing as follows: Early cutting, 100; medium, 131; and late, 166.

8. The annual beef product per acre was largest from the early cuttings, not only in the general average, but in each separate season's test, and that from the late cuttings was smallest, the proportional products standing as follows: Early cutting, 100; medium, 79½; and late, 69½.

9. Taking all points of comparison into consideration, both separately and collectively, including everything that pertains to the largest yield and highest feeding value, the tests favor cutting alfalfa for cattle feeding when the first blooms appear. (1)

#### KILLING BARN FLIES.

Some stables are continually infested with large numbers of barn flies which constantly annoy the stock. The U. S. Department of Agriculture have completed extensive trials in the destruction of these pests and find that spraying with kerosene emulsion or sprinkling with pure kerosene will destroy the flies, larvae and eggs. Kerosene emulsion can be made up and kept ready, as it will keep in kegs a long time. With a spray pump it can also be used to keep flies and mosquitoes off the cows. By making a narrow lane and causing the cows to pass through it, first one way, then the other, both sides of the cows can be sprayed in a few minutes and relief obtained from the incessant torment. Kerosene emulsion requires to be applied frequently to keep down flies. On cattle it will give freedom from attack for more than one day, sometimes two days.—*North-West Farmer.*

(1) All of which we knew practically in England some 60 years ago. Ed.

