CONTINUOUS AND ROTATION GRAZING OF ALFALFA-BROME GRASS PASTURED WITH EWES AND LAMBS

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LIVESTOCK men have largely relied upon observation in judging the value and planning the use of a pasture. Any green and succulent crop has been considered by many to be good pasture regardless of the kind of animals, their stage of maturity, or the ultimate products the pasture was expected to produce. Only too frequently animals may be shifted from one pasture to another irrespective of their condition because the one pasture looked poor and the other looked good.

Because of the reputation that a rotation scheme of grazing has attained in Europe, it has been assumed by pasture technicians and others that this system of management was widely applicable in the United States possibly with not enough consideration for the growth habits of the kinds of plants being grazed.

In order to compare rotation with continuous grazing of ewes and lambs on alfalfa-brome grass pasture, 11 acres of this mixture, each acre individually fenced, were seeded in August, 1939, at the W. K. Kellogg farm, one of the branch experiment stations in Michigan. The station is located in Kalamazoo County and the soil type is largely Bellefontaine sandy loam. Before seeding the mixture of 8 pounds of alfalfa and 7 pounds of brome grass, the soil was limed with 2 tons of ground limestone and treated with 400 pounds per acre of 0-20-20 fertilizer. Good stands were secured in all 11 paddocks. In order to give these new seedlings a fair start, pasturing was delayed until June 7, 1940.

Four of the 11 paddocks were set aside to be used in a rotation scheme of management, and 4 separate acres were set up to be used for continuous grazing. On the remaining 3 acres the first crop was cut for hay June 12, 1940, and the second crop was pastured. In another area, two duplicate acres each of alfalfa-brome grass, ladino and brome grass, and birdsfoot trefoil and brome grass were seeded in August, 1939. The soil and soil treatments on these plots were the same as for the 11 acres previously described. The first crop on these plots was cut early for hay, and the second crop was pastured. The hay for lambs. The sheep used were principally Shropshires.

On June 7, 22 ewes with 27 lambs and yearlings were turned into plot 1 of the rotation. The ewes with lambs plus two yearlings were turned onto each of the 4 acres set aside for continuous grazing. The sheep were weighed and moved at weekly intervals on the rotation plots. The sheep on continuous grazing areas were weighed in general every 2 weeks. The yearling ewes were removed on July 12, the ewes being left on these pastures until August 30. The lambs were removed at weaning time beginning on July 12 and transferred to the two previously mentioned plots of alfalfa-brome and ladino-brome grass. The birdsfoot trefoil-brome mixture did not make sufficient growth and the stand and vigor of the birdsfoot trefoil was so poor that these plots were left out of the test.

In some experiments dealing with rotation grazing, livestock gains have been credited to each individual field in the rotation in an attempt to compare different pasture crops or treatments used in different areas. This procedure involves a fallacy in comparing the different pastures because of differences in the time of grazing, stage of maturity of the forage and of the animals, weather conditions, etc. This fallacy became evident when the ewes on the regular rotationally grazed alfalfa-brome grass were weighed at the time of being moved from one paddock to another and gains credited to each plot. After the first rotation cycle had been completed and two of the four areas in the second cycle, the sheep were weighed at regular intervals without regard to individual plots. Table 1 shows the weights at weekly intervals over a 6-week period for individual plots in the rotation.

These figures indicate that, in rotation, gains or losses should be measured over an entire season rather than by short periods on individual areas of a rotation. Comparisons made on the basis of such gains as actually were secured on plots in a rotation are misleading. No sheep could be expected to maintain gains of such magnitude throughout a grazing season on any kind of pasture.