GORSE CONTROL ON MASSEY COLLEGE SHEEP FARM

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This is a brief account, illustrated by colour photographs, of how the college sheep farm has handled gorse in a 5 acre area of unploughable land.

The gorse in question was very dense and tall. Most of it was so dense as to be absolutely impenetrable by man or beast.

Cutting by hand was commenced on November 14th, 1948 - 3 men working for one day. One man spent another day on it on December 29th and a gang completed the job on January 3rd, 4th, 5th and 6th, 1949. The lapse of time between November 14th and the remainder of the cutting should be noted.

On March 9th, 1949 a good deal of regrowth from the stumps was obvious, growing up through the felled gorse. The first lot of gorse felled had much more regrowth than that felled 6 or 7 weeks later. Burning was done on 23rd March, 1949 - a very good hot fire resulted.

Pasture seed was sown within 3 or 4 days of burning. On 6th April, 14 days after the fire, gorse seedlings were germinating thickly, and grass seeds could be seen ungerminated on the surface.

On 19th May - 8 weeks after burning, most places had a very dense coverage of gorse seedlings with some grass showing through. The gorse seedlings mostly had their first pair of hairy leaves. No sheep had been grazed at this date.

Purely as an experiment, some of these dense patches of gorse seedlings were thoroughly sprayed with Brushkiller (6 fluid ounces per 3 gallon knapsack pump). Inspection some 4 weeks later showed surprisingly little effect.

From that time on the area was kept grazed by sheep. The vast majority of the gorse seedlings were eaten out, though some persisted, especially on the steep bare spots where no grass seed was able to germinate. The main regrowth has been from the old stumps, and this growth reached a height of six to twelve inches.

One very noticeable feature about this regrowth was that the area cut on 14th November had very much less regrowth than the remainder, which was cut six or more weeks later. It will be remembered that the early cut part had much more stump growth than the rest before burning, since it had six weeks more of good growing weather in which to develop. It is this part of the area that made very little stump regrowth after burning.

Presumably the reason for the better final results on the early cut area is that the regrowths before burning had largely exhausted the food reserves of the stumps. After the fire, these stumps had little ability to make a second crop of regrowths. On the other hand, the gorse which had six weeks less growing period between cutting and burning, was unable to make sufficient stump growth in that time to exhaust its food reserves. As a result this gorse was able to make much more stump growth after burning. It looks as though early November cutting followed by a fire at the end of March gives the best results under these particular conditions.

The policy planned from the commencement of this gorse control work was to let stump regrowth grow for at least a year and then to spray. On 13th July, 1950 trial sprayings were made using Brushkiller and also two experimental hormone preparations. As inspected in December 1950, these had given rather poor results, the Brushkiller being best and having given perhaps a fifty per cent kill. This winter spraying was no doubt a hard test of any preparation.

The whole area was sprayed in January-February 1951, using 2.4.5-T (Blackberry Killer) at the recommended strength.

The results on 3rd August 1951, were an almost complete kill of all

growth. Perhaps less than half of one per cent of the plants have any sign of life, in some cases at least, this being fairly obviously due to those plants having been missed.

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DISCUSSION

MR. GARDINER: What was the rate of application used?

DR. YEATES: The man doing the job used an ordinary high pressure knapsack spray pump and the nozzle used was an ordinary Bordeaux nozzle. He made up a mixture and used 6 fluid ozs. per 3 galls. and sprayed the whole area, wetting the plants thoroughly with a fine misty spray that you would get using a Bordeaux nozzle almost closed. The dosage per acre seems to me to be of no great significance, but it would not be very great.

QUESTION: What month was it sprayed?

DR. YEATES: January and February.

QUESTION: How long did the gorse take to die?

DR. YEATES: It turned fairly brown within a month or so and today, apart from an occasional plant or two, it looks completely dead. The amount of respraying that is required can be done in half a day.

MR. KERSLAKE: Did you say that the stock keep the seedlings down?

DR. YEATES: The seedlings on the area were 99% controlled by the sheep.

PROF. PEREN: I would like to add a few words. A heavy concentration of wethers was used. Considering the success of the spray, I think it only fair to say that there was more than one student employed there. In the case of one very careful man everything was killed off, but in the case of another man who was perhaps not so careful, there was a little bit of green here and there.

MR. BARRON: Can you tell me the approximate cost per acre?

PROF. PEREN: There was about five acres of land and we were not prepared to abandon it. We are very short of land. We have not got the exact costs, but I am quite sure they would not be greater than that land and its value to us.

MR. GORDON: What are the future plans for the management of that area?

DR. YEATES: That is a matter for the Sheep Farm Manager. This next summer or spring it would pay to burn the dead gorse and put some grass seed on the burnt patches. I think that would be the obvious answer.

PROF. PEREN: Dead regrowth is so thin it is not worth worrying about. The practical man is not going to worry about the dead regrowth.

MR. LYNCH: I would like to know whether this idea of burning after spraying anything but a heavy regrowth is dangerous because of new grass seedlings which would be destroyed.

DR. YEATES: That might be so. In some small patches there is almost pure gorse with no grass that you would kill out.

MR. BRODIE: I have had quite a bit of experience of treating gorse up to 10 ft. high in very rough country with one spray. It is better not to burn. The cattle push through it.

DR. YEATES: What about the regrowth? Do you cut?

MR. BRODIE: We cannot get the labour and, therefore, do not cut.

PROF. PEREN: I am wondering why there is so much interest in the question of rate per acre. I assume that the main necessity is to get an adequate

wetting. Is that so?

DR. YEATES: I would say so, provided you have the required concentration applied without any wastage through run off.

PROF. PEREN: If you emphasise rate per acre I think I would rather err on the heavy side and do the thing once. It is much cheaper than having to go over ground again.

MR. CRAIG: The land may not be worth the cost when it is cleared, and you may as well leave it alone if it has no great carrying capacity.

QUESTION: I would like to know whether any department has carried out experiments on spraying of seedlings coming up to 3 months or so. Is it best to leave them up to 3 months or 6 months?

MR. HAMBLYN: They should be left until three to six inches high.

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