

THE USE OF TRACTORS IN CULTIVATION, INCLUDING SUB-SOILING, ON NATAL ESTATES.

By H. L. GARLAND.

In the absence of Mr. Garland at Porto Rico, his paper was read by Mr. H. E. H. PALAIRET, as follows:—

Superiority of Caterpillar over Wheel Types.

The Caterpillar Tractor is far superior on our lands to the Wheel Tractor as it can plough up steep grades where a Wheel Tractor would find it impossible, and on ploughing across the sides of a hill the Wheel Tractor is inclined to slide and it is impossible to keep it in the furrow, whereas the Caterpillar can grip and plough across practically any hill side.

On sandy soils it can be said that the Wheel Tractor is a complete failure as it digs itself in. The Caterpillar packs the ground and rides very easily.

The same applies to any soft or boggy ground.

The Various Uses and Cost of the Caterpillar Tractor

First Ploughing or Ploughing in of Trash.—This is done with a 3-furrow "Shugadisc" plough after the field is allowed to stand for at least two or three months, when the trash becomes dry and brittle making it easier for the disc to cut through the thick carpet of trash. It also helps to feed animals in a trash field to be ploughed which assists the breaking up of the trash.

Average Cost at 6 Acres per Day.

Fuel—24 galls. at 1/4	.. .. .	£1 12 0
Lubrication—1 gall. of C, 3/9	.. .. .	3 9
1 gall. of B, @ 4/3.	.. .. .	4 3
Labour—1 Driver, 3/-	3 0
1 Ploughman, 2/-	2 0
Maintenance and Depreciation at 25%	15 0
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Cost per Acre, 10/-.		£3 0 0
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Harrowing After Ploughing in of Trash.—The cut away disc harrow is used, as it helps to cut up the trash and makes it easier for the trash to rot.

Average Cost as follows at 20 Acres per Day.

Fuel—24 galls. at 1/4	.. .. .	£1 12 0
Lubrication—1 gall. of C, 3/9	.. .. .	3 9
1 gall. of B, 4/3	4 3
Labour—1 Driver, 3/-	3 0
1 Ploughman, 2/-	2 0
Depreciation at 25%	15 0
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Cost per Acre, 3/-.		£3 0 0
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Cross Ploughing in Field which has had the Trash Ploughed in.—This is done with a 5-furrow John Deere Plough converted into a 4-furrow, and the work done is practically 100% efficient and very little trash remains on the surface after the second ploughing or cross ploughing.

The Cost as follows at 8 Acres per Day.

Fuel—28 galls. at 1/4	£1 17 4
Oil	8 0
Labour	5 0
Depreciation	15 0
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Cost per Acre, 8/2.		£3 5 4
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Harrowing after Cross Ploughing.—This can be done with an 18 foot heavy tooth harrow, the cost of which is as follows:—

At 30 Acres per day.

Fuel—28 galls. at 1/4	£1 17 4
Oil	8 0
Labour	5 0
Depreciation	15 0
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Cost per Acre, 2/2.		£3 5 4
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Ploughing in of Green Manure.—This can be done with a 5-furrow John Deere Plough and the work done is very efficient, the covering in of the green manure being practically 100%.

The cost would be the same as the second ploughing.

Heavy Sub-Soiling in Field before Planting.—This is done at a distance of 5 feet apart and an average depth of 20 inches.

The Cost as follows at 8 Acres per Day.

Fuel—30 galls. at 1/4	£2 0 0
Lubrication	8 0
Labour	5 0
Depreciation	15 0
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Cost per Acre, 8/6.		£3 8 0
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Light Sub-Soiling done between cane rows with a Killefer Universal Carrier doing two rows at a time an average depth of 14 inches.

The Cost as follows at 16 Acres per Day.

Fuel—30 galls. at 1/4	£2 0 0
Lubrication	8 0
Labour	5 0
Depreciation	15 0
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Cost per Acre, 4/3.		£3 8 0
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Light Harrowing over Planted Fields.—This is done with a 30 foot Eaton Harrow and kept on until the cane is about 15 inches above the ground.

The Cost of 70 Acres per Day as follows.

Fuel—20 galls. at 1/4	.. .. .	£1 6 8
Lubrication	.. .. .	8 0
Labour	.. .. .	5 0
Depreciation	.. .. .	15 0
Cost per Acre, 9¼d.		<u>£2 14 8</u>

March, 1932.

CHAIRMAN: This is really another paper on costing, as well as being a paper on the use of tractors. It is an example of where costing shows you the value of your work. It would have been interesting to have had a set of figures showing the cost of the same work done with mules, and I hope on some subsequent occasion Mr. Garland will give us such a figure by way of comparison.

Mr. ASKEW: I have one criticism to make about the acreage—6 acres of ploughing and 8 acres cross ploughing. That is all right on paper, but you know when you are ploughing a field you get lots of stoppages, the carburetter goes wrong or the generator goes wrong, and you have to search for a spanner, and so on. Then the rain comes on and other things come on, so that you don't get an acreage of 6 acres per day. I have worked out the costs of a tractor. I have had three different types of tractors, and we have spent considerable sums of money on them in repairs and so on. In my experience, you can do your ploughing just as cheap with mules as you can with a tractor. And if you have any grazing you can do it cheaper with bullocks. For general working, I have come to

the definite conclusion that there is nothing as cheap as animal traction, and there will be no more tractors for me. In my experience, tractor working in this country is very expensive.

Mr. PALAIRET: Mr. Askew's remarks are the strongest support that I have heard for Mr. Watson's paper since it was read. I would be interested to know how Mr. Askew would have put in his costing account the position of the tractor once it was laid up. These figures of 10s. and 8s. 2d. come very close to mine. My expenses are pretty much the same with my tractor, but I cannot with cattle do the first ploughing for 10s.—I think 14s. is nearer the mark—and my second ploughing and cross ploughing is every bit of 10s. with cattle. That includes interest at the ordinary price of your grazing land, and includes maintaining your fences. Those are two essential items with your cattle, and if you keep your proper costing accounts you must include them. Regarding this paper of Mr. Garland's, judging from the work done and the fuel consumed, I estimate that this is a 20-h.p. tractor. If it is, I notice he puts his depreciation at 15s. a day. I think his depreciation is on a very liberal scale.

CHAIRMAN: This paper is evidently one which tackles a problem on which our minds are not yet made up. There are still some who pin their faith to the ox. We are glad to have had expressions of opinion, and we must thank Mr. Palairret for having read Mr. Garland's paper for us.

At 12.40 p.m. the Congress adjourned until 2.15 p.m.

