

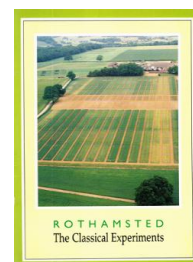
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Barnfield

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BARNFIELD

Although less well-known than the other Classics this was the first, having treatments applied in spring 1843 for a crop of turnips sown in July, several months before the start of Broadbalk. However, the treatments and the cropping, although mainly roots, varied until 1876 when a period of continuous cropping with mangolds was started which lasted until 1959 (sugar beet were also grown from 1946).

As on Broadbalk, the treatments during the first two years were on long narrow plots. However, the design was modified and in 1856 it became the most sophisticated. North-south strips testing minerals and FYM, including a test of FYM + PK, were crossed at right angles by strips comparing no nitrogen fertilizer with both inorganic and organic forms of nitrogen supplying 96 kg N ha^{-1} . Before 1968 this was the only Classical in which N was applied with both FYM and FYM + PK fertilizer.

Because yields of the continuous roots were declining, perhaps because of increasing amounts of cyst nematodes (*Heterodera schachtii*), the cropping has been progressively modified since 1959 and has included a range of arable crops, with an increased range of N dressings, and grass. From 1977 to 1983 the strip which had never received nitrogen fertilizer was kept in fallow. It was sown to grass.clover ley in 1984. The remainder has been in grass since 1975.

A feature of the continuous roots and subsequent arable crops was the superiority of yields from plots given FYM even when a wide range of N dressings were tested with the minerals. This may have been because the extra organic matter had improved soil structure with greater effect on this field which

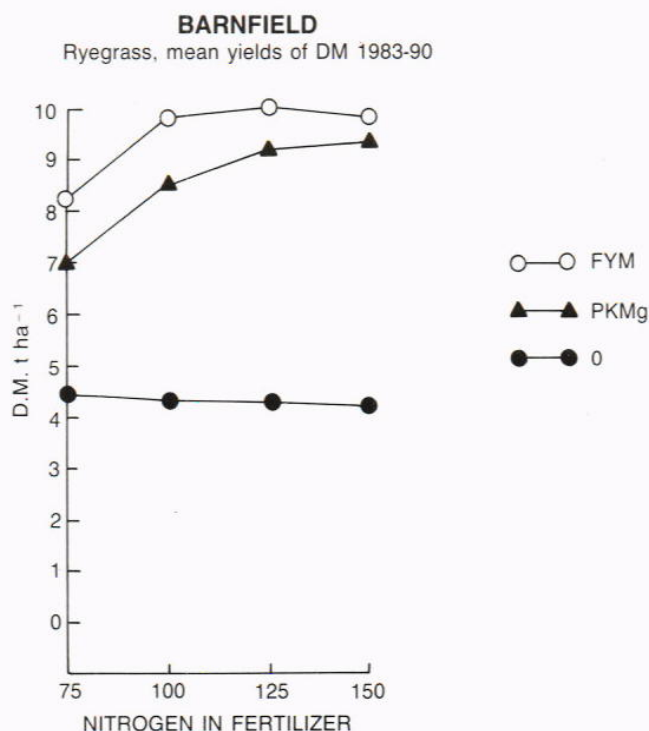


Figure 2