The Development of "00" Rapeseed in Europe With Particular Reference to UK

Melvyn F. ASKEW

National Specialist in Non-Cereal Cash Crops
Agricultural Development Advisory Service
Ministry of Agriculture
Fisheries and Food
Woodthorne Wolverhampton, WV6 8TQ, UK

Oilseed rape has been grown in UK since the sixteenth century at least, but it was not until the 1970s and 80s that the crop developed to any extent. Currently almost all of the crops is Brassica napus ssp oleifera albeit that a small area of B campestris ssp oleifera has been grown in Scotland.

Throughout its recent development in UK the rapeseed crop has been predominantly autumn sown; estimates suggest that in excess of 90% is autumn established.

Initially, recent oilseed rape development in UK centred around the counties of Hampshire and Northamptonshire although with the formation of EC-10 in 1973 rapid development in other areas occurred.

Development of area in England and Wales is shown in table 1.

Table 1: Oilseed rape areas in England and Wales 1970-1980 (ha)

1970	4004
1972	6946
1974	24539
1976	47808
1978	64157
1980	91760

Source: MAFF Agric Census

Expansion of the crop was much slower in Scotland and even today there is only a minor area in Northern Ireland. Yield and production data for UK are given in table 2.

Table 2:

Marketing Year (1 July-June)	Area '000 ha	Yield t/ha	Production '000 tonnes
1980-81	92	3.27	300
1981-82	125	2.72	340
1982-83	174	3.33	580
1983-84	222	2.53	562
1984-85	269	3.43	923
1985-86	296	3.01	891
1986-87	299	3.18	951
1987-88	388	3.49	1353
1988-89	347	3.00	1040
1989-90	397	3.10	1231

Distribution of rapeseed in UK at 1990 harvest (provisional estimates) was:

	ha
England and Wales by MAFF region (Numbers on map correspond)	
North (1)	75500
Midland and Western (2)	59450
East (3)	140000
South East (4)	54000
South West (5)	18000
Wales (6)	500
Scotland	47000
Northern Ireland	1300

Counties included in each of these areas are shown in figure 1.

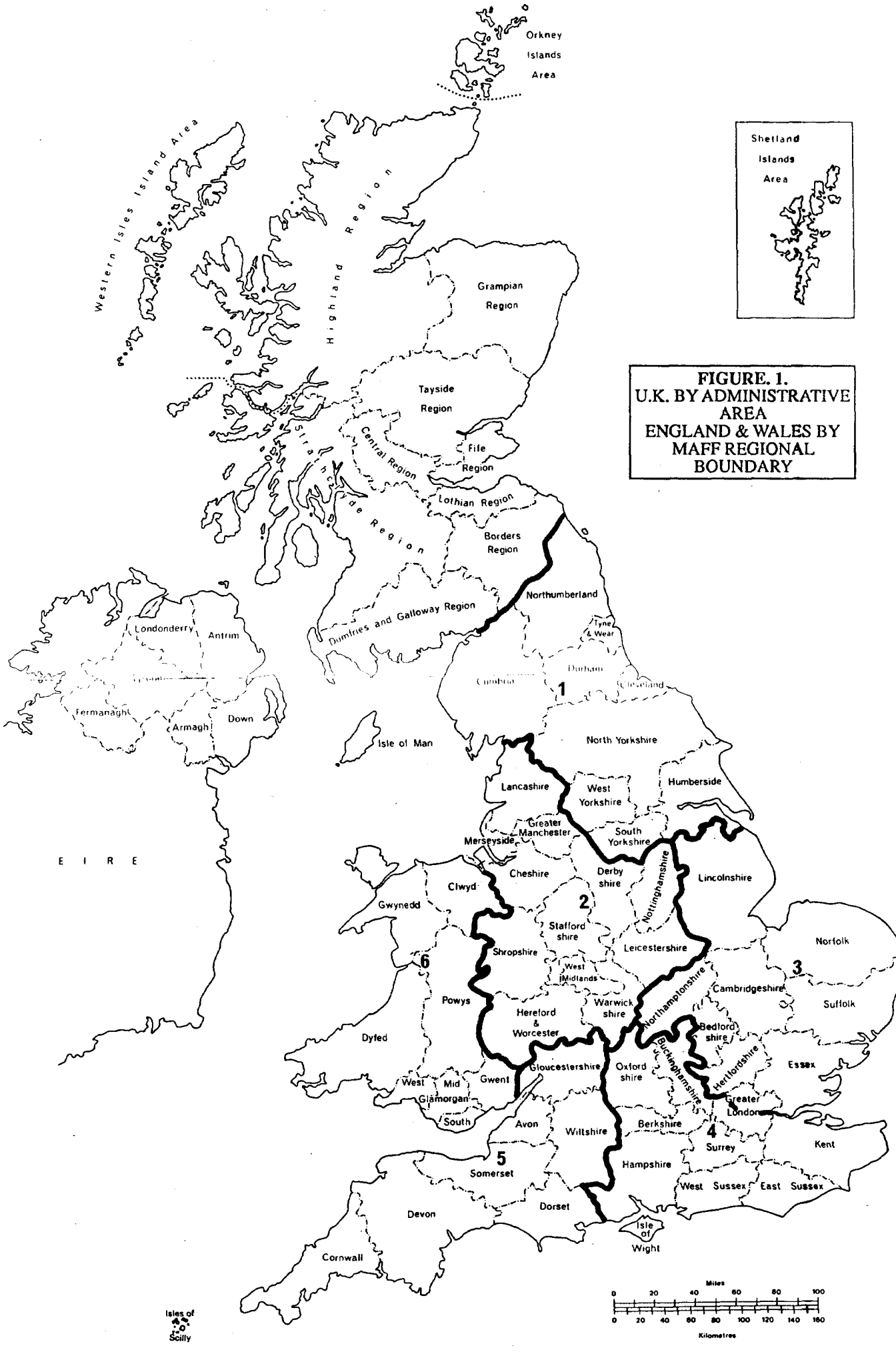
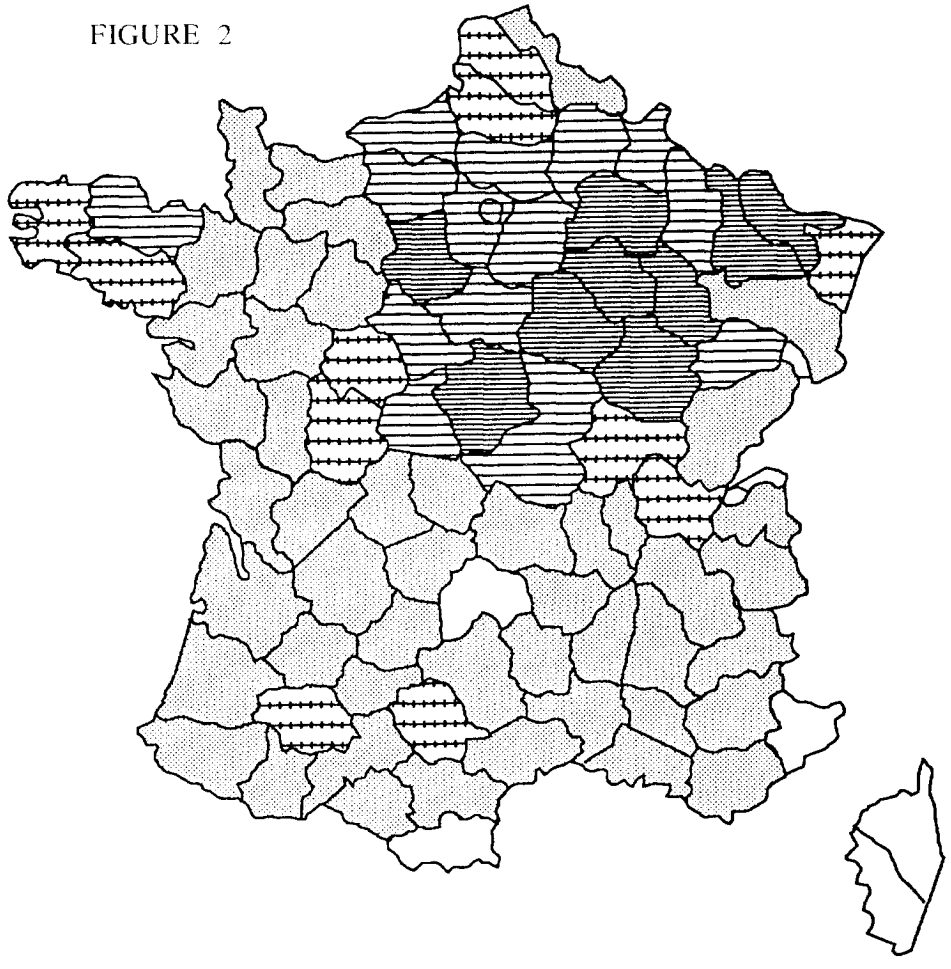


FIGURE. 1.
U.K. BY ADMINISTRATIVE AREA
ENGLAND & WALES BY MAFF REGIONAL BOUNDARY

In contrast with UK, France and what was Federal Republic of Germany both have larger areas of rapeseed although, like UK, this tends to be concentrated in major rapeseed production areas. See figures 2 and 3. France and FRG have both increased areas of rapeseed production as substantially as UK, France from approximately 300.000 ha in 1970 to 675000 ha at 1990 harvest and FRG from approximately 8500 ha in 1970 to 573000 ha at 1990 harvest. At present the former German Democratic Republic is thought to have approximately 150000 ha rapeseed.

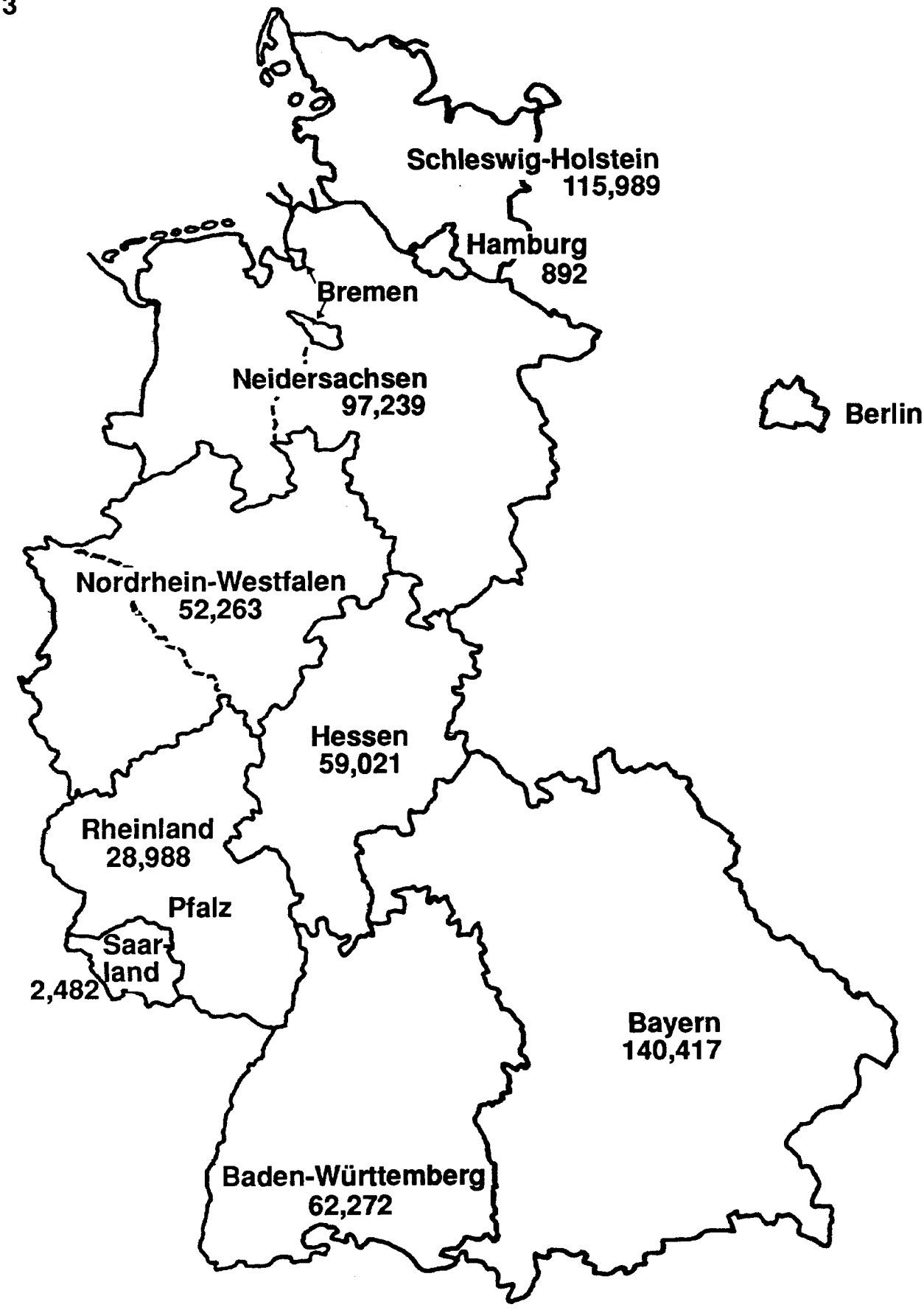
FIGURE 2



Source: SIDO

DISTRIBUTION OF OILSEED RAPE IN F.R.G. 1990 (ha)

Figure 3



The changes caused by decisions at European Community level to introduce a single low standard in the mid 1970s seemed traumatic at the time although in reality the transition was rapid and successful.

However following the European Commission decision to introduce a double low standard of 20 micromoles of glucosinolate per gram of seed during July 1986, a rather different picture has emerged as each major rapeseed-producing state has reacted differently although all are striving to reach an acceptable glucosinolate standard overall.

At the time of writing a standard of 35 µm glucosinolate per gm seed is acceptable for "00" premium payments for the marketing year 1 July 1991 to 30 June 1992, that is, the crop currently being grown, whereas for the marketing year 1 July 1992 to 30 June 1993, that is, the crop to be sown in autumn 1991 or thereafter must meet a 20 µm glucosinolate per gm seed standard.

Unfortunately glucosinolate content in rapeseed is controlled by a number of factors, many of them outwith the grower's control. With the possible exception of Denmark it appears unlikely that any of the other EEC member states will have a national rapeseed crop matching a 20 µm glucosinolate per gram of seed standard in the immediate future.

The transition to "00" cultivars across the major European rapeseed producing countries was markedly different.

In Denmark, until 1989, the rapeseed crop was predominantly spring sown; glucosinolate contents were therefore low, possibly less than 10 µm glucosinolate per gram of seed overall. This situation will have changed substantially with the vast increase in autumn sown rapeseed which came about in 1989 due to legislative changes requiring 65% of arable land to be covered by crops over winter.

As a direct contrast France appeared slowest to change to "00" rapeseed types but then, with 1989 sowings became 96% double low.

Estimates for French sowings for harvest 1990 were c. 4% Bienvenu; c. 55% Samourai (00); c. 25% Ceres (00); c. 18% Tapidor (00).

In 1987 approximately 17% of area was in double low varieties.

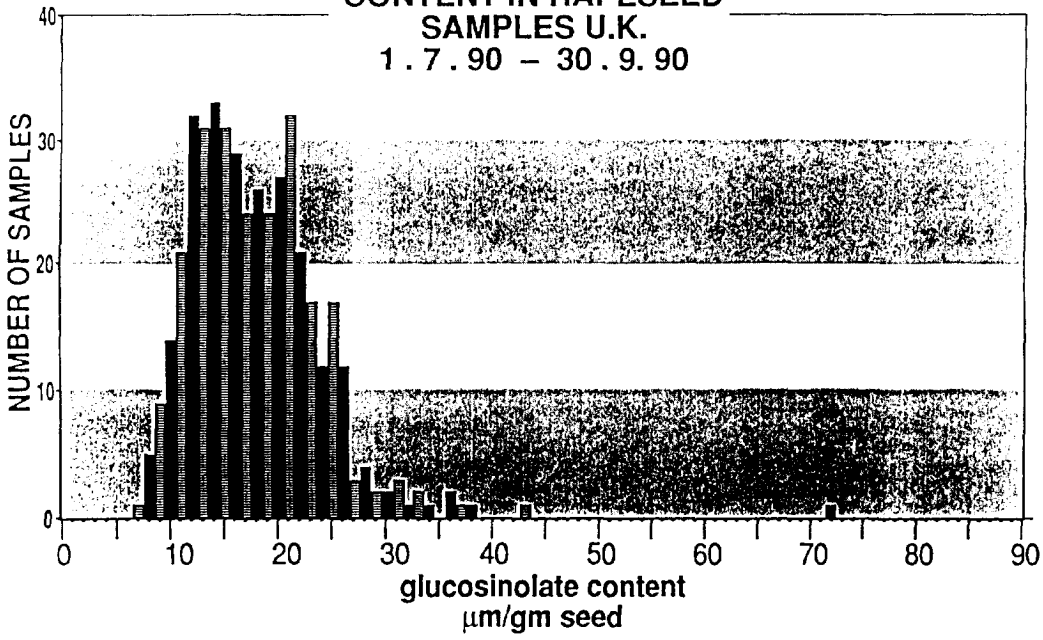
FRG was first to become virtually 100%, this occurring in the 1986/87 season.

Developments in UK however came between those in France and FRG. By 1990 harvest UK was virtually 100% double zero rapeseed; in 1989 approximately 95%. This area developed from approximately 1% double zero rapeseed sowings in 1986 autumn. For 1990 harvest breakdown of cultivars on a percentage basis was Lictor 33%; Libravo 30%; Cobra 17%; Score 7%; Ariana + Doublol + Tapidor + Susanna + Capricorn 13%. Prior to that virtually all commercial double low rapeseed had been Ariana. Ariana was not however the first commercially available double zero rapeseed cultivar in UK since Duo and Tandem had both been launched commercially some years earlier but had not been successful because of their lower yields.

Accurate overall national estimates for glucosinolate contents of crops are not available but it has already been suggested above that at 1989 harvest no one member state of EEC would have achieved an overall crop quality within the proposed EEC standards. The author's own estimates for 1989 harvest would be in the low 20s of micromoles glucosinolates per gram of seed for what was the Federal Republic of Germany, France and United Kingdom. This is not a scientific measure but merely an overall subjective estimate. Moreover with the introduction of HPLC as a final reference method for glucosinolate analysis it seems likely that such an estimate could be on the low side.

Data for UK rapeseed quality for the marketing year 1st July 1990 to 30th June 1991 are obviously not yet complete but, based on official analyses in the period 1st July 1992 to 30th September 1990 the following has been prepared. See figure 4.

Figure 4
DISTRIBUTION OF GLUCOSINOLATE CONTENT IN RAPESEED SAMPLES U.K.
1.7.90 – 30.9.90



Clearly it is too early to estimate an overall mean but clearly too United Kingdom has not yet achieved a crop of less than 20 micromoles glucosinolates per gram of seed overall.

Summary:

Oilseed rape is developed from a minor crop status in the United Kingdom during the 1960s to a major arable crop. Current area is almost 400,000 hectares. Currently the crop is predominantly autumn-sown Brassica napus. The transition to double low cultivars has occurred but the UK crop is not yet achieving a quality level below 20 micromoles glucosinolates per gram of seed overall. The change to double low rapeseed has occurred more slowly than in what was the Federal Republic of Germany but more quickly than in France. UK is the third largest rapeseed producer in the European Community after France and Germany.