

Pricing

Introduction

1. In this appendix we consider what has happened to prices since the merger, namely whether the observed price increases can be explained by cost changes and whether the price increases for phenoxy products are comparable to the price increases of other non-phenoxy herbicides.

2. Our ability to fully analyse the price, volume and cost data provided by the parties has been complicated by a number of issues:
 - (a) the wide range of mixed products sold by the parties. We have therefore concentrated our analysis on Nufarm's straight 2,4-D, MCPA and MCPP-p products as well as one popular pre-mixed herbicide;
 - (b) the treatment of rebates within the transaction data.¹ In particular that:
 - (i) Nufarm's rebates are only accounted for on a transaction basis for the last financial year;
 - (ii) Nufarm changed the way it calculates rebates in July 2008 (gross prices have been brought closer to net prices² and retrospective rebates will be reduced accordingly); and
 - (iii) retrospective rebates for financial year 2007/08 and 2008/09 are still to be finalized with customers, so it is not clear what the final net prices for the post-merger period will be;
 - (c) the seasonality of purchases, such that the full effect of the post-merger price increases has not been seen yet,³ and

¹There has generally been a low level of transparency with respect to the Nufarm transaction data—several versions have been provided in different formats.

²Nufarm stated that this change in the rebate policy explained why 2008 July gross prices had decreased.

³However, in the case of MCPP-p, there have been forward sales of the straight formulated product in May 2008 (to overcome the revocation of the registration occurred at the end of May 2008), suggesting that seasonality may be less of an issue.

(d) the pricing mechanism, specifically the relationship between prices and a backward-looking cost accounting system.⁴

3. As such it is difficult to make any robust conclusions on Nufarm's pricing behaviour post-merger. However, there are indications that, to date, prices may have increased by more than costs.
4. The rest of this appendix is split into nine sections:
 - (a) Depitox transaction data;
 - (b) Agritox transaction data;
 - (c) Compitox transaction data;
 - (d) Mircam transaction data;
 - (e) cost analysis;
 - (f) margins;
 - (g) volumes;
 - (h) other herbicides; and
 - (i) third-party comments.
5. In the first four sections we consider the original transaction data provided by Nufarm and first compare average gross revenue per product with average variable costs and then compare average net revenue per product with average variable costs. In section (e) we consider what has happened to Nufarm's costs and how the cost accounting system may affect our comparisons of price and costs from the first four sections.

⁴At the Main Party Hearing, Nufarm informed us that they would send more details of its standard cost accounting system. However this has not been provided.

Depitox transaction data

6. Depitox is Nufarm's straight 2,4-D formulated product. The initial data analysis compares Nufarm's average revenue per product⁵ and the average variable cost⁶ provided to the CC.⁷

FIGURE 1

Monthly average gross revenue (excluding all rebates) and average variable cost for Depitox, 2005–2008

[✂]

Source: Nufarm transaction data.

7. Nufarm has historically increased its Depitox prices each February, with prices remaining fixed for the rest of the year. In February 2008, the Depitox average revenue increased by approximately [✂] per cent (compared to around [✂] per cent and around [✂] per cent in 2006 and 2007).
8. In May 2008⁸, Nufarm increased the price again. Depitox's price increased by a further, roughly, 9.5 per cent (22p). However, it appeared that this might have been largely explained by a [✂] per cent [✂] increase in the average variable cost since February. After this, the average variable cost remained high, but the price (average revenue) appeared to decrease back to February 2008 levels. Nufarm, however, informed us that this observed reduction in prices was a result of a change in the way it calculated and applied rebates.
9. Nufarm told us that historically it would invoice customers at a 'gross' or 'invoice' price, then, at the end of the season, it would give customers a significant rebate to reflect the discounts discussed at the beginning of the season. Nufarm, however,

⁵The average revenue is used as a proxy for prices, as list/sale price data has not been provided in a consistent form.

⁶Variable cost = Standard Material Cost (raw materials and packaging) and Variable Overheads from Accounting data.

⁷Transaction data on Belvedere 2005–2008, provided by the parties in the Annex 90 of the Response to the Market Questionnaire; Compitox Plus data provided in the response to additional information request dated 27 October.

⁸ Price increases were announced in May, but were effective from June and therefore they were picked up in the transaction data from June 2008.

changed its policy in July 2008 and brought gross prices closer to net prices. As such, customers would receive a lower price at the point of sale and similarly would receive a lower rebate at the end of the season. Nufarm stated that this change was brought in to help customers' cash flows and provide a clearer pricing structure. Nufarm therefore told us that Depitox net price did not decrease between May and July 2008.

TABLE 1 **Gross and net prices for Depitox**

	£		
<i>Prices</i>	<i>February 2008</i>	<i>May 2008</i>	<i>July 2008</i>
Gross	[REDACTED]	[REDACTED]	[REDACTED]
Net	[REDACTED]	[REDACTED]	[REDACTED]

Source: Nufarm.

10. The data in Table 1 is based on the prices that Nufarm has communicated to its customers. Nufarm told us that the average gross and net prices that are ultimately achieved in any given month are a mix of sales made at different price points as customers migrate to the new prices. We therefore looked in more detail at the net transaction prices (including rebates) for the last year.⁹

FIGURE 2

**Monthly average net revenue (inc rebates)
and average variable cost for Depitox**

[REDACTED]

Source: Nufarm transaction data.

11. Figure 2 shows that the average net revenue from Depitox sales increased by [REDACTED] per cent between March 2008 (when the merger completed) and September 2008, whereas over the same period the average variable cost only increased by [REDACTED] per cent.

⁹It is not possible to consider monthly net prices (average revenue) prior to August 2007 as prior to that date Nufarm did not account for rebates on a transaction basis.

12. However, Nufarm told us that this still might not give a clear picture of net prices in 2007/08 and 2008/09 as it was still negotiating retrospective rebates with customers. However, we note that if these retrospective rebates apply equally over the year then the relative price increase would remain¹⁰.
13. In addition, Nufarm told us that the price increases in May 2008 could be explained by the significant raw material cost increases it became aware of in April/May. Nufarm told us that it expected the trend in prices to continue and adjusted prices accordingly to maintain margins. However, the expected price increases did not materialise, in particular oil price started to fall in July 2008, and Nufarm told us that this is the reason why Nufarm prices appear to have increased faster than costs¹¹.
14. Nufarm also explained that such price increases were possible because (i) phenoxyes were sold every month, whilst the majority of Nufarm's products were only sold in either spring or autumn, and therefore mid-season cost changes had a more significant impact on its phenoxy business; (ii) cost increases in 2008 were exceptional; and (iii) customers were willing to accept mid-season price increases as they were aware of cost increases and price increases were widespread across herbicide products.¹²

Agritox transaction data

15. Agritox is Nufarm's straight MCPA formulated product. The same analysis and data problems as discussed above in relation to 2,4-D apply to MCPA.

¹⁰Nufarm's financial year begins in August. Hence retrospective rebates for August and September 2008 will not be finalized until after July 2009. It is not clear when retrospective rebates will be finalized for 2007/08.

¹¹This is discussed again with respect to oil prices—see Figure 8.

¹²Although as discussed in more detail below we note that the average price increase across all herbicides referred to in the Kynetec data set is only 3.4 per cent over the period.

FIGURE 3

**Monthly average gross revenue (excluding all rebates)
and average variable cost for Agritox, 2005–2008**

[REDACTED]

Source: Nufarm transaction data.

16. As with Depitox, Agritox prices have historically increased only once per year, but in 2008 Nufarm increased prices in February and May. In February 2008, the Agritox average revenue increased by approximately [REDACTED] compared to [REDACTED] per cent price increases for the previous two years. In May 2008, Nufarm increased prices by over 15 per cent, compared to an average variable cost increase of [REDACTED] per cent.
17. Again Nufarm told us that this observed price reduction was a result of a change in the way it calculated and applied rebates (as discussed above) and therefore told us that the Agritox net price did not decrease between May and July 2008 (see Table 2).

TABLE 2 **Gross and net prices for Agritox**

	£		
Prices	February 2008	May 2008	July 2008
Gross	[REDACTED]	[REDACTED]	[REDACTED]
Net	[REDACTED]	[REDACTED]	[REDACTED]

Source: Nufarm.

18. We also looked at the net transaction prices (including rebates) for the last year.

FIGURE 4

**Monthly average net revenue (including rebates)
and average variable cost for Agritox, 2007–2008**

[REDACTED]

Source: Nufarm transaction data.

19. Figure 4 shows that the average net revenue from Agritox sales increased by [redacted] per cent from March 2008 (when the merger completed) to September 2008. Over the same period the average variable cost increased by only [redacted] per cent.¹³
20. For completeness in December 2007, there was [redacted]. This was due to the fact that in this month there were [redacted].¹⁴
21. Again Nufarm told us that this still might not give a clear picture of net prices in 2007/08 and 2008/09 as it was still negotiating retrospective rebates with customers. However, we note that if these retrospective rebates apply equally over the year then the relative price increase would remain. Further, Nufarm again told us that it had expected the high oil price rises in the first quarter of 2008 to continue and therefore the difference between price and cost increases was due to the fact that its cost increases forecast did not materialize.

Compitox Plus

22. Compitox Plus is Nufarm's straight MCPP-p formulated product. The same analysis and data problems as discussed above in relation to 2,4-D and MCPA apply to MCPP-p.

FIGURE 5

Monthly average gross revenue (excluding all rebates) and average variable cost for Compitox Plus, 2005–2008

[redacted]

Source: Nufarm transaction data.

Note: Data gaps refer to months where no sales were made.

23. The average revenue for MCPP-p straight formulated product was much more variable than for 2,4-D and MCPA. Nufarm told us that usually price changes for

¹³Although over the period March to August 2008 the average variable cost had increased by almost [redacted] per cent.

¹⁴We note that this is the only transaction in 2008 that has not received some form of rebate and that the same customer received rebates in other months in 2008.

Compitox Plus happened twice a year, in February and September. Post-merger (May 2008), the average revenue increased by around [redacted] per cent [redacted] compared to around [redacted] per cent increase in the average variable cost [redacted]. Therefore around half of the price increase appeared to be explained by changes in the average variable cost. Again Nufarm told us that the price increase was based on expectations of more significant price increases.

24. In addition, there were specific circumstances surrounding the sale of MCPP-p in May 2008. In April 2008, the PSD notified Nufarm of the revocation of the registration for MCPP-p straight products (including Compitox Plus) for environmental reasons. Nufarm hoped to regain registration in time for the autumn selling period and therefore decided to forward sell stock to distributors who could then on-sell to farmers in autumn if registration was regained. Nufarm therefore brought forward the autumn price increase to May 2008.¹⁵
25. As Compitox Plus had not been sold since it came off registration, we had no evidence on costs and prices for June 2008 onwards.

Mircam

26. Mircam is a mixed product manufactured by Nufarm that includes MCPA, MCPP-p¹⁶ and Dicamba. The same analysis and data problems as discussed above in relation to 2,4-D, MCPA and MCPP-p apply to Mircam.

FIGURE 6

Monthly average gross revenue and average variable cost for Mircam, 2005–2008

[redacted]

Source: Nufarm transaction data.

Note: Data gaps refer to months where no sales were made.

¹⁵We note that Nufarm told us that as MCPP-p has not yet regained registration [redacted].

¹⁶MCPP-p is still registered for use in mixes.

27. Similar to 2,4-D and MCPA, Mircam had relatively stable average revenue figures increasing once a year. In February 2008, just before the merger completed, the average revenue increased by around [X] per cent, but at the same time, the average variable cost decreased by around [X] per cent. The average variable cost then increased slightly in August 2008, but remained below the February 2008 cost figure. However, despite costs remaining historically low, post-merger (May) the price of Mircam increased a further, roughly, 14 per cent, although this price increase was reversed the following month.
28. Again Nufarm informed us that this observed price reduction was a result of a change in the way it calculated and applied rebates (as discussed above) and therefore told us that the Mircam net price did not decrease in July 2008 (see Table 3).

TABLE 3 **Gross and net prices for Mircam**

	£		
Prices	February 2008	May 2008	July 2008
Gross	[X]	[X]	[X]
Net	[X]	[X]	[X]

Source: Nufarm.

29. We also looked at the net transaction prices (including rebates) for the last year.

FIGURE 7

Monthly average net revenue (inc rebates) and average variable cost for Mircam

[X]

Source: Nufarm transaction data.

30. According to the transaction data, the average net revenue from Mircam sales increased by [X] per cent between March 2008 (when the merger completed) and September 2008, whereas over the same period the average variable cost only increased by [X] per cent.

31. Again Nufarm told us that this still might not give a clear picture of net prices in 2007/08 and 2008/09, as it was still negotiating retrospective rebates with customers. However, we note that if these retrospective rebates apply equally over the year then the relative price increase would remain.

Cost analysis

32. Nufarm's estimates of variable costs for each product are included in Figures 1 to 7. In summary these figures indicated that the price (average revenue) increases between March 2008¹⁷ and September 2008¹⁸ and between September 2007 and September 2008 (year-on-year change) were larger than the increase in the average variable costs over the same period (see Table 4).

TABLE 4 Average net revenue and average variable cost increases, March 2008 to September 2008 and September 2007 to September 2008

Prices	March 2008 to September 2008		September 2007 to September 2008	
	Increase in average net revenue	Increase in average variable cost	Increase in average net revenue	Increase in average variable cost
Depitox	[X]	[X]	[X]	[X]
Agritox	[X]	[X]	[X]	[X]
Mircam	[X]	[X]	[X]	[X]

per cent

Source: Nufarm transaction data.

33. Nufarm told us that the way in which the variable cost data was calculated meant that the variable cost and average revenue data might not be consistent. Specifically, the cost accounting system is retrospective on a quarterly basis¹⁹, while the pricing decision is forward looking, thus reflecting the expected cost changes. We did not have details of Nufarm's cost expectations at the time of the May 2008 price increase and therefore couldn't comment on the extent to which the observed price increases were fully explained by Nufarm's expectations.

¹⁷Date in which the merger was completed.

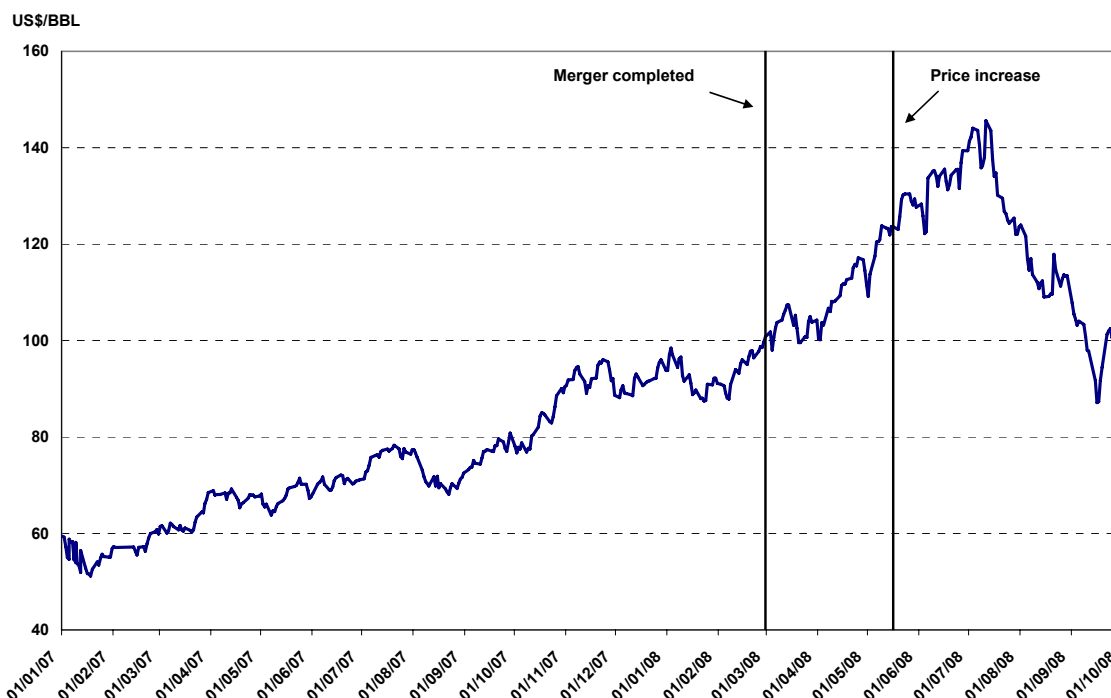
¹⁸Latest transaction data available.

¹⁹ For example, the average variable cost estimates for the second quarter of the year (April–June) are based on the actual costs observed in the first quarter (January–March) etc. Therefore a cost increase in January would not affect the cost data until April. Main Party's Hearing transcript.

34. However, we were able to consider some of the specific cost increases faced by Nufarm. In particular, Nufarm told us that it had been affected by the price of oil and chlorine. However, we note that we do not have estimates of the proportion of total production costs accounted for by each input and that the variable cost estimates discussed above do not suggest that the input price increases were significant enough to account for the observed price increases.
35. According to Nufarm, the most significant cost increase that affected it was the increase in oil prices. Oil prices rises also affected chlorine prices as the main cost in manufacturing chlorine is electricity. Nufarm told us that as chlorine is specific to the phenoxy herbicides and not necessarily used in the manufacture of other herbicides, it faced more significant cost pressures than other herbicide manufacturers.

FIGURE 8

Price evolution for the Crude Oil-Brent \$US



Source: Datastream.

36. As discussed above, Nufarm historically increased prices in February. As Figure 8 shows, from February 2008 oil prices rose dramatically from around \$95 a barrel to peak at around \$145 a barrel in mid-July, an increase of over 50 per cent.²⁰
37. Oil prices have been increasing since at least the start of 2007. In the year to February 2008 (ie between Nufarm's standard price increase times), oil prices increased by just over 50 per cent. This translated to February 2008 price increases across the four products discussed above of between 3 and 7 per cent. Between February 2008 and the announced price increase in May 2008, oil prices increased 30.8 per cent (an average of 9.4 per cent per month). If this rate of increase had continued until the next scheduled price increase (February 2009), the oil price increase for the year would have been over 160 per cent, which would have been expected to result in more significant price increases than observed in February 2008. However, whilst oil prices rises during early 2008 were exceptional, even the most pessimistic oil price forecast did not predict that oil prices would continue to increase at the rate seen in early 2008 for the rest of 2008 and into 2009 (which would have taken oil prices to over \$270 a barrel by February 2009). We do not have the actual oil price forecast Nufarm based its price increase on and therefore it is not clear to what extent the observed price increases (approximately 30 per cent) were due to Nufarm's expectations of future oil price increases.
38. We do not have estimates of what proportion of Nufarms total production costs are affected by these input price increases.²¹ It is therefore difficult to assess to what extent the price increases were explained by the costs increases in any more detail than in sections a to d. As discussed the variable cost data received from Nufarm,

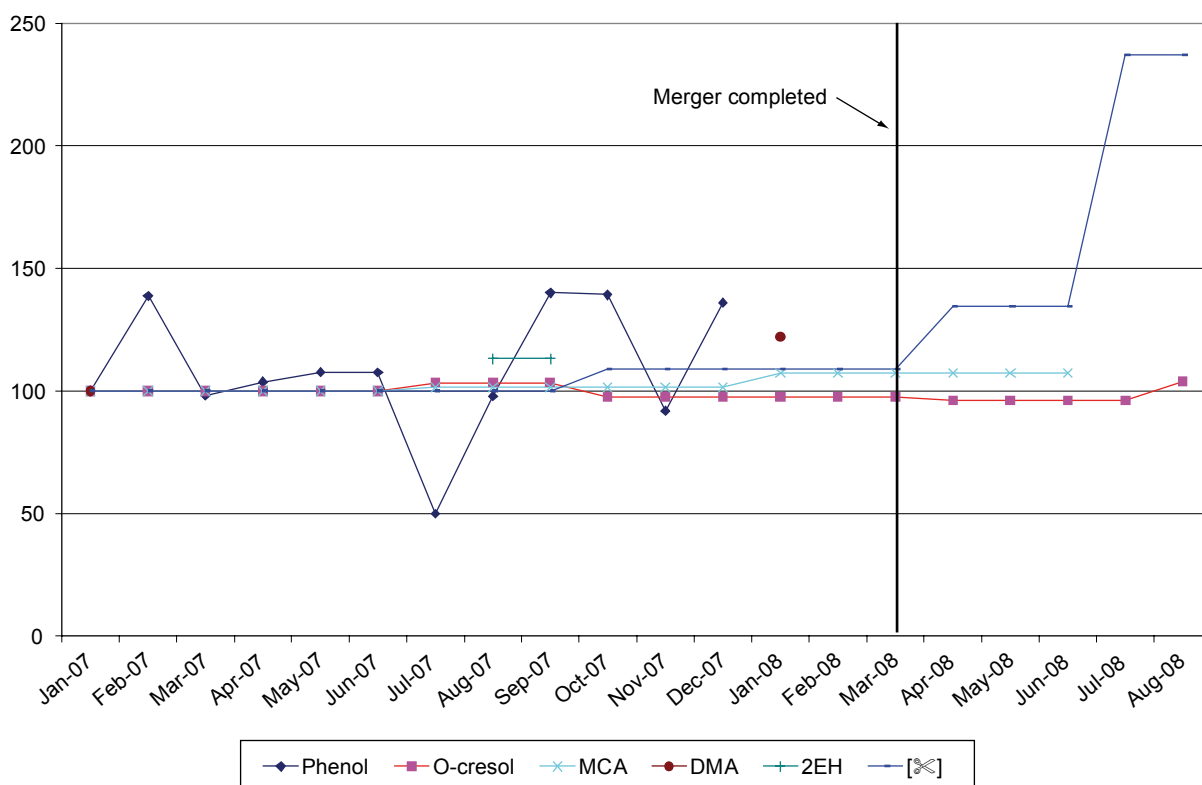
²⁰Note that the oil prices are in dollars; hence they do not reflect the changes on the exchange rate between dollar and pound.

²¹At the Main Party hearing, Nufarm told us that they would provide additional information on chlorine prices, but this has not been provided.

which would be expected to include all costs that are affected by the oil price, have not risen as significantly as prices.

39. We also have some information on costs from the suppliers of other inputs to the phenoxy products.

FIGURE 9
Index of input prices—phenoxy technical acids
Jan 2007 = 100



Source: Third party suppliers.

40. Figure 9 seems to indicate that the only input price that has increased significantly post-merger is [X]. However, we note that for the other products listed prices were provided in euros (while [X] price was provided in £) and therefore it is not clear what impact the weakening of the pound against the euro had on Nufarm's costs over the relevant period. Although again it is not clear what proportion of total

production costs each of these input costs accounts for, we have assumed that the cost changes are accounted for in the variable cost data discussed above.

Margins

41. An analysis of the margins data of Nufarm on three of the products discussed above (Depitox, Agritox and Mircam²²) shows that margins have increased following the price increase, which would indicate that prices have increased by more than costs²³ (see Table 5 and Figure 10). However we note that, as discussed above, Nufarm considered that this was because expected price increases from May 2008 did not materialize.

TABLE 5 Net margins

	£		
	September 2007	March 2008 (merger completed)	September 2008
Depitox	[X]	[X]	[X]
Agritox	[X]	[X]	[X]
Mircam	[X]	[X]	[X]

Source: Nufarm transaction data.

FIGURE 10

Comparison of net margins

[X]

Source: Nufarm transaction data.

Volumes

42. Nufarm told us that, as there had been very few sales at the new prices, our average revenue figures would be distorted. However, whilst there is a strong seasonality to the sales data and therefore sales in the last few months have been lower than in the period immediately prior to the merger, year-on-year the sales figures are similar

²²Recent data for Compitox Plus were not available as MCPP-p had come off registration for sale as a straight product.

²³In general we would expect margins to have remained constant if there had been no loss of competitive constraints following the merger.

(and in some cases higher) and therefore we considered there was no reason to conclude that the average revenue figures were incorrect.

43. The following figures compare the January to September monthly volume data in 2007 and 2008 for Depitox, Agritox and Mircam²⁴.

FIGURE 11

Comparison of monthly Depitox sales 2007 to 2008



Source: Nufarm transaction data.

FIGURE 12

Comparison of monthly Agritox sales 2007 to 2008



Source: Nufarm transaction data.

FIGURE 13

Comparison of monthly Mircam Plus sales 2007 to 2008



Source: Nufarm transaction data.

44. While we do not have sufficient information regarding non-price drivers of demand (such as weather) to draw any conclusions with respect to the demand response to the May 2008 price increases, we note that Figures 11 to 13 are not inconsistent with a lack of substitution away from phenoxies in response to a significant price increase. Volumes purchased in June to September have been broadly similar, if not higher, than volumes purchased in the same period last year. However we note that the main selling season for these products is spring and therefore the full impact of any price increase on purchased volumes may not have occurred yet.

²⁴We did not consider the Compitox Plus volume data as the product lost registration in May 2008.

Other herbicides

45. Nufarm told us that competitors had faced cost pressures over recent months and that Nufarm's price increases since the merger were not out of line with the market. In particular they told us that the products included in Table 6 had experienced a price increase this year.

TABLE 6 **Alternative herbicides—price increases 2008**

		<i>per cent</i>
	<i>Date</i>	<i>Price increase</i>
Phenoxyes list price (Nufarm)	May/June 2008	20
Quantum SX (DuPont)	July 2008	10
Glyphosate (Monsanto)	April 2008	25
	July 2008	30
Stomp (BASF)	July 2008	15
Lexus SX (DuPont)	July 2008	10
Tolugan (MAI)	July 2008	30
Atlantis (Bayer)	July 2008	8
Crystal (BASF)	July 2008	8
Liberator (Bayer)	July 2008	8
Jubilee SX (DuPont)	July 2008	10

Source: Nufarm.

46. However, of these products, only Jubilee SX and Quantum SX were listed by Nufarm as substitute products and the price increases of these products have been notably lower than the observed price and list price increases of Nufarm's phenoxy products. Third-party data also suggests that price increases may have been higher for phenoxyes.
47. [REDACTED] provided Kynetec data on price per Kg/litre for different herbicides. Kynetec data is based on a quarterly survey of 500 farmers and combines their invoiced prices and volumes purchased to calculate a weighted average price by product.
48. Figure 14 shows the annual price increases (based on weighted average price) for Depitox, Agritox and Compitox and those herbicides that Nufarm listed as substitute products.²⁵ The figure shows the increase in prices between 2007 and 2008.²⁶

²⁵We have included all products listed by Nufarm as substitute products, for which data was available, with the exception of Round-up Ace which is a non-selective herbicide.

FIGURE 14

Annual price increases 2007–2008 (based on weighted average price)

[REDACTED]

Source: Kynetec Data provided by [REDACTED].

49. [REDACTED]

50. Dow told us that the issue of pricing is complex due to the presence of generic suppliers, rebates and different marketing offers and therefore the average price increases may not always be fully informative. As such, Dow provided its estimates of the average price increases and the range of price increases observed across phenoxies, pyridines and SUs. Table 7 indicates that phenoxies had the highest average, maximum and minimum price increases across the three product groups.

TABLE 7 [REDACTED]

	<i>Average price increase</i>	<i>Maximum price increase</i>	<i>per cent</i> <i>Minimum price increase</i>
Phenoxies	[REDACTED]	[REDACTED]	[REDACTED]
Pyridines	[REDACTED]	[REDACTED]	[REDACTED]
SUs	[REDACTED]	[REDACTED]	[REDACTED]

Source: Dow.

*Dow noted that the large price drop was the result of entry by a generic supplier.

51. Several third parties provided details of price increases on other herbicide products, although the majority of these were annual price increases and therefore did not always specify what had happened to prices post-merger (March 2008).²⁷

52. DuPont provided price per kg data for a number of SU products, which indicated that prices have been largely stable for the last two years (see Table 8). In particular,

²⁶Based on calendar years—2008 data is until October for all products except Compitox Plus whose sales data is only available until May.

²⁷Although we note that no third parties told us of price increases of other products post-merger.

there is no evidence of increased fuel costs impacting on prices between 2007 and 2008.

TABLE 8 Annual price increases on a number of SU products

	<i>per cent</i>	
	2007	2008
[X]	[X]	[X]
[X]	[X]	[X]
[X]	[X]	[X]
[X]	[X]	[X]
[X]	[X]	[X]

Source: DuPont.

53. A major generic manufacturer provided price per litre data on a number of products, including a leading brand of HBN and a leading brand of fluroxypr. Whilst it made no purchases of the HBN in 2007, the price only increased by 2 per cent between 2006 and 2008. For the fluroxypr there was a 6 per cent price increase between 2007 and 2008. The manufacturer provided monthly figures, which indicated that there had been no change in the price of either of these products between January and September 2008.

Third-party comments

54. The majority of third parties indicated that the prices they had been charged by AH Marks/Nufarm had increased since the merger. Some have also indicated that these price increases are in excess of those for other non-phenoxy herbicides.

55. AICC for example told us that since the merger the price of 2,4-D had increased by 40 per cent, the price of MCPA had increased by 13 per cent and the price of MCPP-p had increased by 35 per cent. They compared these price increases to those for herbicides in general, which had increased by about 10 per cent as a result of increased fuel costs. Similarly UAP (distributor) commented that Nufarm's 2,4-D price had increased by 15 per cent and its MCPA price by 20 per cent, compared with an average of 3 to 5 per cent across other herbicides.

56. Headland (intermediary) told us that the price of MCPA had gone up 20 per cent and MCPP-p was up by 30 per cent. Another intermediary and Agrovista, Frontier, [X] Countrywide and Cropwise (all distributors) indicated that the price of 2,4-D had increased by 10 to 25 per cent and the price of MCPA had increased 15 to 25 per cent since the merger.