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Michael D A Bolland

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Phosphorus fertilisers for W. A. farming

by M. D. A. Bolland,
Plant Research Division

Phosphorus is one of the major nutrients essential to plants. Without the use of phosphorus fertilisers, few soils in Western Australian agricultural areas would be agriculturally productive.

Superphosphate has been the main phosphorus fertiliser used in W.A. because:

* Before 1974 it was cheap.
* It contains water-soluble phosphorus, which is immediately available to plants.
* It is pelleted and the granules are hard and dry, making them easy to transport, handle and spread.
* The trace elements copper, zinc, molybdenum and manganese are easily incorporated into superphosphate and therefore can be applied in one operation with the phosphorus.
* Superphosphate is a source of two other essential plant nutrients—calcium and sulphur.

The Department of Agriculture has studied phosphorus fertilisers other than superphosphate in a large number of field trials dating back to 1943 (5, 9, 16, 17). Under the cost structures at the time of these early investigations, superphosphate was clearly cheaper to use than the alternatives then available.

Now there is a possibility that the alternatives to superphosphate may be cheaper. This is due to the shortage of relatively cheap rock phosphate of a grade suitable for superphosphate production, a greatly increased price of superphosphate to the farmer, and the availability of large quantities of
lower grade rock phosphate which are potentially cheap.

This article describes the range of phosphorus fertilisers and assesses them on the limited technical and economic information available.

**Rock phosphate, superphosphate, double and triple superphosphate**

The common forms of phosphorus ores are:
- calcium phosphates known as apatites
- iron and aluminium phosphates, principally crandallite and millisite.

Apatite, crandallite and millisite are all known as rock phosphate. In the short term they are poor sources of phosphorus because, although they may contain large percentages of phosphorus, it is insoluble in water and therefore not readily available to plants.

However, the availability of these rock phosphates can be greatly increased by adding strong acid to them to produce water soluble phosphorus compounds. This "acidulation" of the apatite ore produces relatively stable, dry, manageable materials including superphosphate, double and triple superphosphate. Acidulation of crandallite and millisite produces water soluble phosphorus compounds which quickly revert to water-insoluble phosphorus compounds. These products are often sticky and difficult to handle, and therefore generally unsuitable for the manufacture of phosphate fertilisers such as superphosphate.

Thus, unlike the apatite rock phosphates, the crandallite and millisite deposits of the world have not been major sources for manufactured phosphorus fertilisers.

Superphosphate is made by adding sulphuric acid to apatite ore in the approximate ratio 2 : 1 by weight. It consists mainly of water soluble phosphorus (mono-calcium phosphate) and gypsum, and it contains 9.6 per cent phosphorus (P) and 12 per cent sulphur (S).

Phosphoric acid is therefore a very concentrated form of phosphorus but is dangerous to handle and in most situations impractical to use directly in agriculture. **Triple superphosphate** is produced by adding phosphoric acid to apatite in the ratio roughly 2 : 1 by weight. Actually so called 'triple' superphosphate contains only just over double the amount of total and water soluble phosphorus of superphosphate, and only 1.5 per cent sulphur as it includes little gypsum (Table 1).

**Australia's supply of rock phosphate**

Australia has obtained apatite ore to manufacture superphosphate from Nauru and Ocean Islands in the Pacific Ocean since the early 1900's, and Christmas Island in the Indian Ocean since 1946.

Apatite is the only phosphorus ore on Nauru and Ocean Islands. The apatite on Ocean Island is expected to be exhausted in about four years, and on Nauru within five to ten years.

Before 1970, both Nauru and Ocean Island were mined by the British Phosphate Commission, a joint Government venture owned 42 per cent by the Australian Government, 42 per cent by the British Government and 16 per cent by the New Zealand Government.

Nauru became independent in 1968, and BPC handed over the mining operations on Nauru to the Nauruan Phosphate Corporation in 1970. Since then royalties have been paid on this ore, raising its price to Australia.

**Christmas Island ore**

Since 1948 the rock phosphate on Christmas Island has been mined by the Christmas Island Phosphate Commission, owned equally by the Australian Government and the New Zealand Government. The British Phosphate Commission arranges the shipping of the ore to Australia and New Zealand.

Christmas Island is Australian territory with no native inhabitants and so no royalties are payable on the phosphate ore. This makes Christmas Island ore Australia's cheapest source.

The phosphate ore on Christmas Island typically occurs as is shown in Fig. 1 and has been classified as follows:

**A grade rock**

A grade rock lies near the bottom of the profile and is composed mainly of apatite. It can be used directly to make superphosphate and has been mined since 1901 for this purpose.

Before 1946, supplies of A grade rock went to Japan, and since 1946 have gone to Australia and New Zealand. The A grade ore on the Island will be exhausted in about 10 to 15 years at the current rate of usage.

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Table I. Analysis of phosphorus (P) sources available in W.A.

<table>
<thead>
<tr>
<th>Phosphorus source</th>
<th>Supplier</th>
<th>Total* %P</th>
<th>% Water soluble P</th>
<th>% Citrate soluble P</th>
<th>% 'Available' P</th>
<th>% Sulphur (S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superphosphate</td>
<td>CSBP and Farmers</td>
<td>9.6 (22)</td>
<td>7-4 (17)</td>
<td>1.2 (2-8)</td>
<td>8.6 (20)</td>
<td>12</td>
</tr>
<tr>
<td>Double Superphosphate</td>
<td>CSBP and Farmers</td>
<td>17.9 (41)</td>
<td>13.56 (31)</td>
<td>3.06 (7-04)</td>
<td>16.6 (38)</td>
<td>4-5</td>
</tr>
<tr>
<td>Triple Superphosphate</td>
<td>(i) CSBP and Farmers (ii) Rural Traders Co-operative (RTC)</td>
<td>20.1 (46)</td>
<td>1.7-3 (40)</td>
<td>1.92 (4-4)</td>
<td>19.2 (44)</td>
<td>1.5</td>
</tr>
</tbody>
</table>

* The difference between total phosphorus and 'available' phosphorus is 'acid soluble phosphorus', which is usually unreacted rock phosphate.
Because Christmas Island A grade ore contains more iron and aluminium than the Nauru and Ocean Island apatites, superphosphate made from it is "sticky" and the pellets are hard to spread. However, C.S.B.P. have devised techniques to produce good quality superphosphate granules from Christmas Island A grade ore.

B grade ore

B grade ore is composed of about half apatite and half crandallite and millisite, but contains too much iron and aluminium to be used directly for superphosphate manufacture. However, it has recently been found that when the B grade ore is heated or "calcined" to 1 150°C, some of the iron and aluminium in the ore is converted to compounds which do not react with sulphuric acid. This heat-treated product can be used to manufacture superphosphate.

For this treatment, a new calcining plant is being installed on Christmas Island, and 85% of the B grade ore can then be used to manufacture superphosphate.

The B grade ore thus available is expected to extend mining by five to ten years at current usage, so that the total life for A and B grade supplies from Christmas Island is 20 to 25 years.

C and D grade ore

It is estimated that there are 150 million tonnes of C and D grade ores on Christmas Island. The C and D grade ores are composed mainly of crandallite and millisite, together with some apatite. There is less apatite in the D grade ore.

Neither the C and D grade ore can be used to manufacture water soluble phosphorus fertilisers such as superphosphate, although fertiliser manufacturers in Victoria are studying the possibility of making a "C grade super".

The most promising C grade super produced so far is pelleted and contains about half the total phosphorus of superphosphate. However, it takes up moisture from the atmosphere to produce a sticky compound.

Alternatively, when the B, C and D grade ores are heated or calcined...
to 450 to 550°C, the crandallite and millisite are changed chemically and the phosphorus in these two minerals becomes soluble in neutral ammonium citrate (citrate soluble phosphorus), which is moderately available to plants.

The apatite in the B, C and D grade ores is unaffected by temperatures of about 500°C, and remains a very poor short term source of phosphorus for plants. Temperatures near 1500°C are needed to make the phosphorus in apatite citrate soluble. At today’s fuel prices, this is uneconomic.

The calcined product produced from the C and D grade ore on Christmas Island is known as calciphos 500, and 10 000 tonnes are exported to Indonesia annually.

Queensland rock phosphate

An estimated 2 100 million tonnes of rock phosphate in north-west Queensland are potentially suitable for superphosphate manufacture.

About 40 million tonnes of this ore is direct shipping grade ore, averaging 13 per cent phosphorus, which can be used directly to manufacture superphosphate. The rest of the deposit averages 7.4 per cent phosphorus.

This lower grade ore must be treated or “beneficiated” to upgrade the ore to an average of 15.7 per cent total phosphorus before it can be used to manufacture superphosphate.

Broken Hill South mine the Queensland deposits, which contain large quantities of silica as chert. Before superphosphate manufacture from the “direct shipping” grade ore, and before the beneficiation of the lower grade ore, the rock phosphate must be ground.

The chert is very hard, making it difficult and costly to grind the rock phosphate ore. Moreover the cost of transporting the ore from inland Queensland to Townsville on the coast is very high.

However, the Queensland deposit will undoubtedly be Australia’s future assured source of rock phosphate, and will initially be used in a blend with the rock phosphate from the Islands to manufacture superphosphate.

Phosphorus fertilisers available in W. A.

The phosphorus fertilisers available in W. A., and their analyses, are listed in Table 1. By law the phosphorus content of fertilisers is stated as total P₂O₅ (phosphorus pentoxide), water soluble P₂O₅ and citrate soluble P₂O₅.

The amount of phosphorus which is soluble in water and in neutral ammonium citrate is called “available phosphorus” because it can be used by plants.

The commercial phosphorus fertilisers sold in W. A. contain most of their phosphorus in a water soluble form as mono-calcium phosphate. In terms of plant growth, these commercial fertilisers behave similarly when compared per unit of total phosphorus. However, their differing phosphorus contents affect cartage costs and rates of application.

Superphosphate and double superphosphate gave similar wheat yields at equivalent rates of total phosphorus in trials in 1966 and 1967 throughout the wheatbelt (3).

The nitrogen-phosphorus compounds also contain water soluble phosphorus and recent trials comparing the phosphorus in these fertilisers to superphosphate indicate that all are equivalent per unit of total phosphorus (10).

The Department of Agriculture is now also comparing triple superphosphate and the new nitrogen-phosphorus fertilisers with superphosphate.

Choosing a phosphorus source

The costs of superphosphate, double and triple superphosphate are compared in Table 2.

In Figures 2 and 3, costs of applying the different phosphorus sources at various distances from Kwinana are compared.

Because double and triple superphosphate contain about twice as much total phosphorus as superphosphate, they need only be applied at about half the rate. Freight, cartage and spreading costs for triple and double superphosphate are therefore about half of those of superphosphate.

Despite lower application costs, the higher price of double superphosphate makes it the most expensive source of phosphorus to spread on a paddock.

Because of the better returns from wheat compared with returns from livestock, farmers are now more likely to use shorter rotations and to only apply phosphorus fertilisers with the crop. Since the fertiliser and crop seed are applied in one operation, the extra cost of applying the fertiliser is small. In such a case, assuming no costs of application, Figure 2 can be used to compare the costs of each source per unit of phosphorus.

Cost comparisons if a farmer pays a contractor to cart the fertiliser from the railway siding to the farm and spread it, are shown in Figure 3.

If superphosphate is purchased about seeding time, triple superphosphate is then the cheapest source per unit of phosphorus. (See Figures 2 and 3.)

However, if superphosphate is purchased at its cheapest price in October, then it is the cheapest on-farm source anywhere per unit of phosphorus and the cheapest source applied for distances of less than 150 km from Kwinana.

As well as costs such as these, the availability of suitable storage facilities and finance will influence what time a farmer should buy his superphosphate.

Table 2. Bulk costs of fertilisers from CSBP at Kwinana in $/tonne, as from July 1, 1977

<table>
<thead>
<tr>
<th></th>
<th>Cost to farmer (ex works)</th>
<th>Deduction for Cash before Delivery (CBD)</th>
<th>Cost to farmer CBD ex works</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Superphosphate</td>
<td>129.42</td>
<td>22.77</td>
<td>106.65</td>
</tr>
<tr>
<td>Double superphosphate</td>
<td>107.70</td>
<td>3.00</td>
<td>104.00</td>
</tr>
<tr>
<td>Triple superphosphate</td>
<td>60.21</td>
<td>12.00</td>
<td>48.21</td>
</tr>
</tbody>
</table>

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On 1976-77 superphosphate sales, most of the superphosphate was purchased between February 1 and June 30. Only about 25 per cent of the superphosphate sold in 1976-77 was purchased before February. Thus superphosphate bought at seeding is likely to be the more valid comparison with double and triple superphosphate in Figures 2 and 3.

All three phosphorus fertilisers are granular products and flow through the drill at similar rates. However, when low rates of phosphorus dressings are required, such as between 5 and 10 kg of phosphorus per hectare, drills and combines may not adjust to the low rates (25 to 50 kg/ha) of triple superphosphate containing these amounts of phosphorus.

This could require biennial dressings, or adding enough phosphorus fertiliser with the crop to supply both the crop and the intervening ley years.

Sulphur

Superphosphate has been widely used to correct phosphorus deficiency in W.A. soils. However, as superphosphate contains more than 50 per cent gypsum (calcium sulphate), it is a source of sulphur and calcium as well as phosphorus.

Usually the need for sulphur in W.A. soils is less than the need for phosphorus, but sulphur is more readily leached from soils than phosphorus.

In fact it is only on the deep sandy soils in the high rainfall areas of the State (such as at Pinjarra, Waroona, Busselton, Northcliffe, Denmark and Esperance) that extra sulphur has proved necessary. On such soils the sulphur supplied in the autumn superphosphate dressings may be leached by the spring.

Sulphur has rarely been needed in other areas, presumably because the superphosphate applied to correct phosphorus deficiency has supplied adequate sulphur.

The three phosphorus fertilisers compared in Figures 2 and 3 differ markedly in their sulphur contents (Table 1).

The comparison of superphosphate with alternative phosphorus fertilisers should also consider the

---

Fig. 2.—On-farm cost of phosphorus fertilisers various distances from Kwinana. Costs in $/unit of phosphorus, where 1 unit of phosphorus is 10 kg P/ha (96 kg Superphosphate/ha)

Fig. 3.—Applied cost of phosphorus fertilisers various distances from Kwinana. Costs in $/unit of Phosphorus, where 1 unit of P is 10 kg P/ha (96 kg Superphosphate/ha)
value of the sulphur component of superphosphate. Unfortunately, information on the value of sulphur is sketchy.

In many situations a complete switch to phosphorus fertilisers low in sulphur would eventually result in the appearance of sulphur deficiency in sub. clover pastures and cereal crops. Sub. clover would be amongst the first plant species affected.

However, the amount of sulphur required to correct such a deficiency is likely to be small (2).

Water-insoluble phosphorus sources

Water-insoluble phosphorus sources are untreated rock phosphate or calcined rock phosphate. Both are usually finely ground.

The large price increases for superphosphate since 1974 and dwindling supplies of cheap rock phosphate for superphosphate manufacture have rekindled interest in these water-insoluble phosphorus fertilisers. Advantages of water-insoluble phosphorus fertilisers are:

- Water-insoluble sources give long term (residual) phosphorus supply because of their slow rate of release of phosphorus. Such slow-releasing fertilisers may prove useful to maintain the small supply of phosphorus needed on old land. (8, 9, 15). It may thus be necessary to only provide infrequent dressings of a water-insoluble phosphorus source, for example, every five years. This would suit farm finances, as large amounts of water-insoluble phosphorus fertiliser could be applied in a year when money was available.

- Because of minimum processing, rock phosphate or calcined rock phosphate is potentially cheap.
- The slow release of phosphorus could be useful on sandy soils in the high rainfall areas of W.A. where phosphorus can be readily leached from the root zones of plants (6,13).

Before these alternative phosphorus fertilisers can be assessed economically both the short term and long term availability of phosphorus must be known.

Research in the past, and present trials by the Department of Agriculture give a lot of information about the short term phosphorus supply to crops and pastures. However, little is known about the residual value of these phosphorus sources.

For example it is known that short term release of phosphorus from water-insoluble fertilisers is greatest when the surface area of the fertiliser is greatest, that is when the fertiliser is ground to a very fine powder (for example 7, 18). The results in Table 3 from a 1959 Department of Agriculture field trial illustrate this point.

The lower the pH of the soil (the more acid), the better rock phosphate fertilisers perform in the short term (for example, 4, 7, 18).

The results in Table 4 are from Department of Agriculture field trials. At the Muchea site, the apatite rock phosphate compared favourably with superphosphate in virgin peaty sand (pH about 4). In fact the rock phosphate probably improved the pH of the soil as well as providing adequate phosphorus. The same fertiliser gave poor short term results on a virgin soil of higher pH at Bramley.

For most situations in the short term, water-insoluble phosphorus sources are inferior to superphosphate (for example, 1, 8, 9, 11, 12, 14).

Current Department of Agriculture trials are therefore designed to study the cheapest alternative phosphorus sources from the point of view of long term availability. The fertilisers being studied are:

- Christmas Island C and D grade ore, about 11 per cent total phosphorus (25 per cent P.O.), a very slow releasing phosphorus source.
- Calciphos 500, about 13.6 per cent total phosphorus (31 per cent P.O.).

<table>
<thead>
<tr>
<th>Table 3. Response of sub clover to phosphorus sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results from 1959 Department of Agriculture trial. Dry weight of sub clover produced in response to phosphorus as either superphosphate, apatite dust and finely ground apatite dust. The dry weight of sub clover is expressed as a percentage of the maximum yield (8 200 kg/ha).</td>
</tr>
<tr>
<td>Yield as %, max. dry weight yield</td>
</tr>
<tr>
<td>Kg P/ha</td>
</tr>
<tr>
<td>Nil</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>12-5</td>
</tr>
<tr>
<td>25</td>
</tr>
<tr>
<td>50</td>
</tr>
<tr>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 4. Response of sub clover to phosphorus sources at two sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results from 1957 Department of Agriculture trial. Dry weight of sub clover produced in response to phosphorus as either superphosphate or rock phosphate (apatite). The dry weight of sub clover is expressed as a percentage of the maximum yield.</td>
</tr>
<tr>
<td>Muchea (pH about 4)</td>
</tr>
<tr>
<td>Kg P/ha</td>
</tr>
<tr>
<td>12-5</td>
</tr>
<tr>
<td>19</td>
</tr>
<tr>
<td>25</td>
</tr>
<tr>
<td>50</td>
</tr>
<tr>
<td>100</td>
</tr>
<tr>
<td>200</td>
</tr>
</tbody>
</table>
Queensland rock phosphate (direct shipping grade ore) and ground rock phosphate, a mixture of the apatite ores from the Islands, have also been included in the trials. The short and long term supply will be assessed for both crops and pastures.

Problems with the water-insoluble phosphorus sources may still remain. They are most effective when applied as fine powders, and unfortunately, fine powders are unpleasant and difficult to handle, store and spread. Furthermore, these sources contain very little sulphur.

Many attempts have been made to make pellet forms of the water-insoluble phosphorus sources. Such pellets would have to break up into very fine powders when they come into contact with moist soils, and yet be strong enough to remain as pellets when handled, stored or spread.

The only successful pellets that are potentially cheap are Whinstone pellets produced in New Zealand. These are pellets of calciphos 500 where the clay, bentonite, is used as the binder. When placed in moist soil, the bentonite takes up water and expands, disrupting the pellet.

These calciphos 500 pellets offer the best prospect for water-insoluble phosphorus fertilisers in W.A. because the new Australian Government bounty for phosphorus fertilisers is now payable on available phosphorus.

Thus calciphos 500 is eligible for the bounty. Also, the pellets flow through the drill at rates similar to superphosphate, and are easily handled. Elemental sulphur and potash can be incorporated into these pellets.

However, a problem with even these pellets is that calciphos 500 has a high iron and aluminium content. This could make some of the phosphorus released from the fertiliser unavailable.

In brief . . .

- Superphosphate and 'triple' superphosphate are the cheapest phosphorus fertilisers available in W.A.
- Superphosphate is the cheapest source of both phosphorus and sulphur in the deep sandy soils in the high rainfall areas.
- The use of triple superphosphate to establish pastures or crops on new land is probably not warranted because both trace elements and sulphur will usually be required and are best supplied using the appropriate superphosphate/trace element mix.
- The Department of Agriculture is testing water-insoluble phosphorus fertilisers as potentially cheaper maintenance dressings for phosphorus on old land, or as slow releasing fertilisers on high leaching sandy soils in the high rainfall areas of the State.

References


Figures 2 and 3 are based on the following assumptions:

- Fertiliser is purchased in bulk (10 tonnes or greater).
- Superphosphate (A) purchased at its cheapest price (October) when it is eligible for $4.20/tonne deduction.
- Superphosphate (B) purchased at seeding when little or no deduction is available.
- A distance of 10 km between the railway siding and farm. Thus in Figure 2 the cost of cartage from siding to farm is $3.75/tonne. In Figure 3, cost of cartage from the railway siding and spreading on paddock is $13.00/tonne for superphosphate (90 to 150 kg/ha) and $15.00/tonne for double or triple superphosphate.
The figures in Figures 2 and 3 were calculated by the following method. This method can be used by farmers to compare fertilisers for their own situation or if prices change. The prices are taken from the 1977 Farm Budget Guide, using current (as from 1/7/77) fertiliser prices.

As an example—superphosphate (9.6 per cent phosphorus) purchased October, with 100 km of rail freight.

Cost superphosphate CBD, ex works

\[
\text{Cost} = \frac{42.20}{9.6} = \$4.26/\text{unit of P.}
\]

Rail freight for 100 km

\[
\text{Freight} = \frac{4.70}{9.6} = \$0.49/\text{unit of P.}
\]

Therefore the total cost off rail per unit of P is \((4.26 + 0.49) = 4.75\).

Figure 2 is based on the farmer paying for cartage from railway siding to farm, but is assumed to be no extra costs involved in application.

The cartage cost is

\[
\text{Cartage} = \frac{3.75}{9.6} = \$0.39/\text{unit of P.}
\]

Therefore the on farm cost is \((4.75 + 0.39) = 5.14/\text{unit of P.}\).

Figure 3 is based on a farmer paying for cartage from the railway siding to the farm as well as spreading it on the paddock. In this case the cartage and spreading cost is

\[
\text{Cost} = \frac{13.00}{9.6} = \$1.35/\text{unit of P.}
\]

Therefore the total applied cost is \((4.75 + 1.35) = 6.10/\text{unit of P.}\). For double superphosphate these figures are divided by 17.9 and for triple superphosphate by 20.1.

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### Wheatgrowers should budget for a tough 1978

With a hard year looming for wheatgrowers in 1978, budgeting and cash control will be essential for farmers, says Mr Peter Eckersley, adviser with the Rural Economics and Marketing Section.

Many wheatgrowers can expect to receive at least $30,000 less in pool payments than in 1977.

In the circumstances, farmers should find the Department’s new planning, budgeting and control sheet a simple and effective aid.

This single sheet allows a complete physical and financial summary of a farm, planned or historical. Bank managers are also finding the sheets are a valuable aid to their reviews with farmer clients.

Mr Eckersley says that now is the right time to draw up contingency budgets. Wheatbelt farmers who did this last year were able to produce feasible budgets that would get them through 1977 even after a crop failure in 1976.

The budget sheets are freely available at offices of the Department. The cash flow chart on one side allows a farmer to spell out his expected or actual cash income and expenditure and from this calculate planned or actual changes in his bank and stock firm accounts through the year.

On the reverse side are formats for livestock enterprise planning, crop and pasture planning, calculation of pool payments, a summary of plant items and values, and an assets and liabilities statement. Without this sort of complete financial picture, it is very hard for a businessman to know where he stands and what his opportunities are.

Farmers affected by drought in 1976 or 1977 will obviously suffer a big drop in their first advance payments. However, other wheat farmers will also feel the pinch as pool payments are expected to be greatly reduced in 1978.

The example in the table of the changes in income for a wheat farmer with 1,600 arable hectares shows how income is expected to fall. Deliveries in the last four seasons were 1,100 t, 800 t, 1,000 t and 800 t, and he expects to deliver 800 t again in 1977/78 and 1978/79.

Detailed grain payment estimates are available from offices of the Department of Agriculture.

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Net 1st advance</td>
<td>$43,200</td>
<td>$42,000</td>
<td>$40,800</td>
</tr>
<tr>
<td>Pools</td>
<td>$61,100</td>
<td>$13,400</td>
<td>$13,000</td>
</tr>
</tbody>
</table>