

Finding the fertiliser that best suits your needs

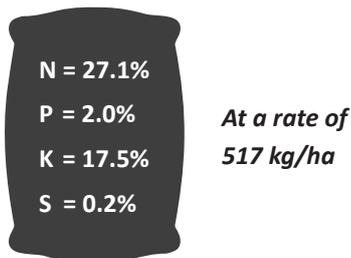
Finding a fertiliser that meets the nutrient requirements of your crop can be one of the more challenging tasks involved in nutrient management.

To find a fertiliser product or blend that will supply the required nutrients, the first step is to go through product cards from your preferred supplier and find fertiliser products containing each of the nutrients that you require.

Once you have highlighted a number of products that may meet the nutrient requirements, the following examples demonstrate how to determine rates, the amount of nutrients that will be applied and how to choose between multiple products.

Determining the amount of nutrients applied with a known product and application rate

Product 1 contains:



To calculate what nutrients (kg/ha) will be supplied, multiply the nutrient % by the application rate (kg/ha).

$$\begin{aligned} \mathbf{N} &= 27.1\% \times 517 \text{ kg/ha} \\ &= \mathbf{140 \text{ kg/ha}} \end{aligned}$$

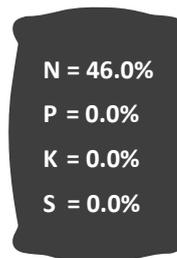
$$\begin{aligned} \mathbf{P} &= 2.0\% \times 517 \text{ kg/ha} \\ &= \mathbf{10 \text{ kg/ha}} \end{aligned}$$

$$\begin{aligned} \mathbf{K} &= 17.5\% \times 517 \text{ kg/ha} \\ &= \mathbf{90 \text{ kg/ha}} \end{aligned}$$

$$\begin{aligned} \mathbf{S} &= 0.2\% \times 517 \text{ kg/ha} \\ &= \mathbf{1 \text{ kg/ha}} \end{aligned}$$

Determining the rate of a product with a known nutrient composition

Product 2 contains:



For a product with multiple nutrients, N is usually used to calculate the rate. This is particularly the case for ratooning and top dress mixtures. When calculating the rate for a planting mixture, it is often easier to meet P requirements first.

To apply 140 kg/ha of N, the application rate (kg/ha) is calculated by:

$$\text{Rate} = \frac{\text{Required nutrient kg/ha}}{\text{Product nutrient \%}}$$

$$\text{Rate} = \frac{140 \text{ kg/ha of N}}{46.0\%}$$

$$\text{Rate} = \mathbf{305 \text{ kg/ha}}$$

Selecting a product

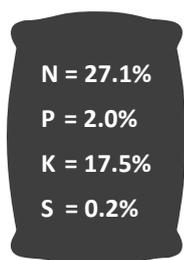
Once crop nutrient requirements are known, to work out which product best meets these requirements, the following steps can be followed.

Nutrients required (kg/ha):

N	P	K	S
140	10	100	0

Below are two products that have been highlighted that may supply the required nutrients.

Product A:



Calculate product application rate:

$$\text{Rate} = \frac{\text{Required nutrient kg/ha}}{\text{Product nutrient \%}}$$

$$\text{Rate} = \frac{140 \text{ kg/ha of N}}{27.1\%}$$

Rate = 517 kg/ha

Does this rate of 517 kg/ha meet the **P** requirements?

$$\begin{aligned} \text{P} &= 517 \text{ kg/ha} \times 2.0\% \\ &= 10 \text{ kg/ha} \end{aligned} \quad \text{YES } \checkmark$$

Does this rate of 517 kg/ha meet the **K** requirements?

$$\begin{aligned} \text{K} &= 517 \text{ kg/ha} \times 17.5\% \\ &= 90 \text{ kg/ha} \end{aligned} \quad \text{YES } \checkmark$$

(It is acceptable to slightly under apply K for one crop)

Does this rate of 517 kg/ha meet the **S** requirements?

$$\begin{aligned} \text{S} &= 517 \text{ kg/ha} \times 0.2\% \\ &= 1 \text{ kg/ha} \end{aligned} \quad \text{YES } \checkmark$$

Product B:



Calculate product application rate:

$$\text{Rate} = \frac{\text{Required nutrient kg/ha}}{\text{Product nutrient \%}}$$

$$\text{Rate} = \frac{140 \text{ kg/ha of N}}{28.8\%}$$

Rate = 486 kg/ha

Does this rate of 486 kg/ha meet the **P** requirements?

$$\begin{aligned} \text{P} &= 486 \text{ kg/ha} \times 3.4\% \\ &= 17 \text{ kg/ha} \end{aligned} \quad \text{NO (TOO MUCH) } \times$$

Does this rate of 486 kg/ha meet the **K** requirements?

$$\begin{aligned} \text{K} &= 486 \text{ kg/ha} \times 13.5\% \\ &= 66 \text{ kg/ha} \end{aligned} \quad \text{NO (NOT ENOUGH) } \times$$

Does this rate of 486 kg/ha meet the **S** requirements?

$$\begin{aligned} \text{S} &= 486 \text{ kg/ha} \times 0.3\% \\ &= 15 \text{ kg/ha} \end{aligned} \quad \text{NO (TOO MUCH) } \times$$

As shown above, Product A is a more appropriate choice than Product B.