

# \$ A C I D O S T

## Calculating the cost of soil acidity

Soil acidity stunts plant growth resulting in reduced crop and pasture production.

Plants vary in their sensitivity to soil acidity but most agricultural plants grow best in a pH range of 6 – 8.

Soil acidity can affect productivity well before it becomes discernible by eye.

This calculator estimates how much those losses in production could be costing the farm business.

To use, enter the soil's current pH and the crop and pastures planned for the next 4 years, and their expected prices or returns.

Note that the pH is held at the same value for the 4 years – in reality, soil pH will continue to drop if the acidity is not neutralised.

Start

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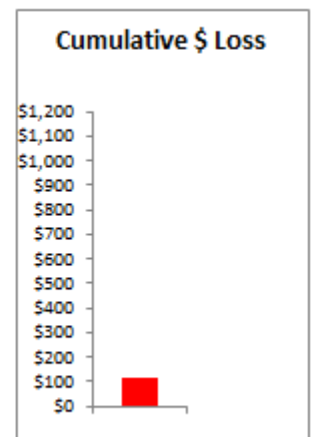
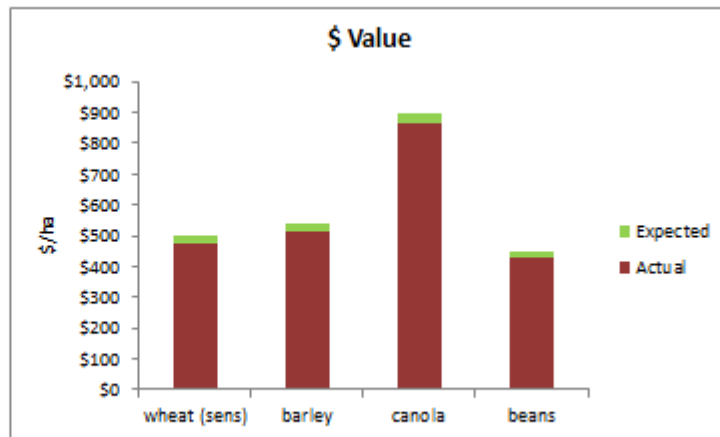
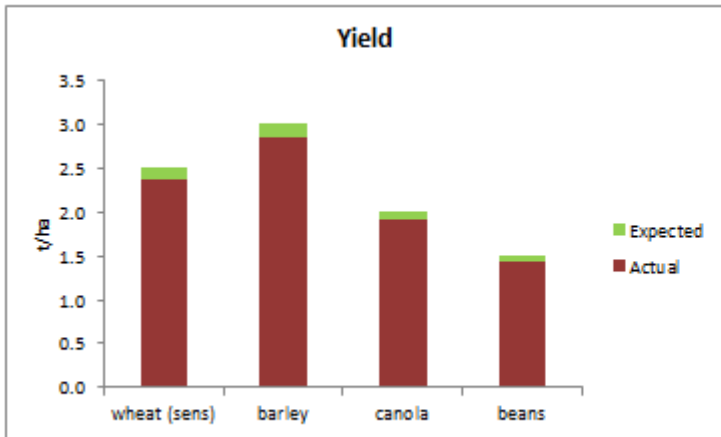


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pH = 5.5

### The Cost of Not Treating Soil Acidity:

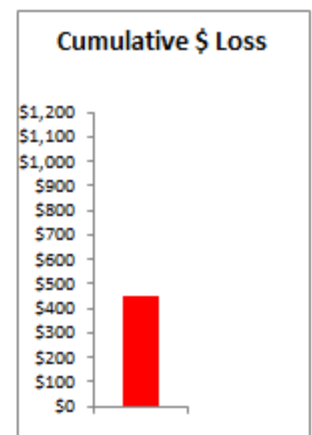
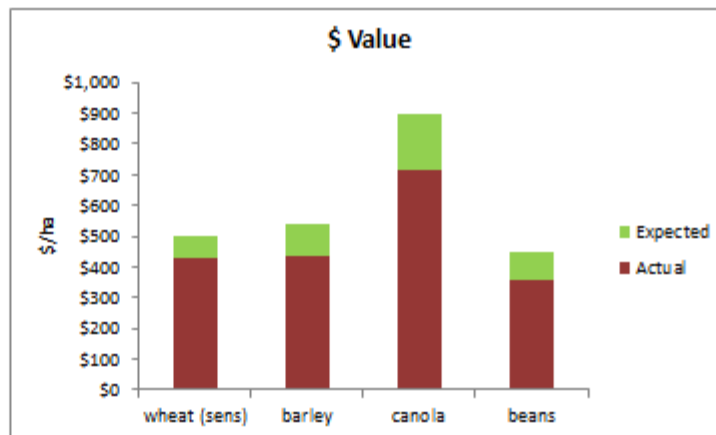
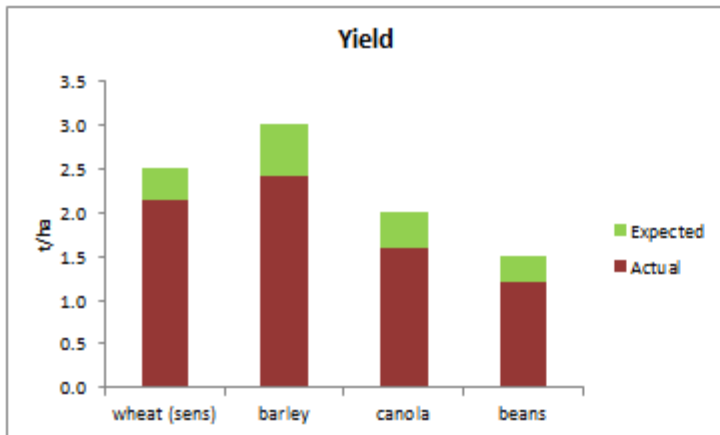
| Current pH value (CaCl <sub>2</sub> ) | This year                          | Next year                          | 3 Year's Time                      | 4 year's Time                      |
|---------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Select pH value                       | Select crop type                   | Select crop type                   | Select crop type                   | Select crop type                   |
| 5.5                                   | wheat (sens)                       | barley                             | canola                             | beans                              |
|                                       | Enter expected crop yield t/ha     | Enter expected crop yield t/ha     | Enter expected crop yield t/ha     | Enter expected crop yield t/ha     |
|                                       | 2.5                                | 3                                  | 2                                  | 1.5                                |
|                                       | Enter crop/pasture value \$/t      | Enter crop/pasture value \$/t      | Enter crop/pasture value \$/t      | Enter crop/pasture value \$/t      |
|                                       | \$200                              | \$180                              | \$450                              | \$300                              |
|                                       | Estimated loss of production       | Estimated loss of production       | Estimated loss of production       | Estimated loss of production       |
|                                       | 0.1 t                              | 0.2 t                              | 0.1 t                              | 0.1 t                              |
|                                       | Estimated value of lost production | Estimated value of lost production | Estimated value of lost production | Estimated value of lost production |
|                                       | \$25                               | \$27                               | \$39                               | \$23                               |
|                                       | <b>Cumulative Loss /ha \$113</b>   |                                    |                                    |                                    |



pH = 5.0

**The Cost of Not Treating Soil Acidity:**

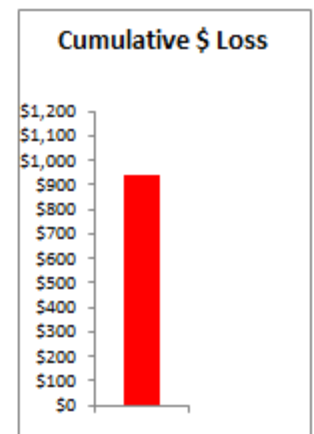
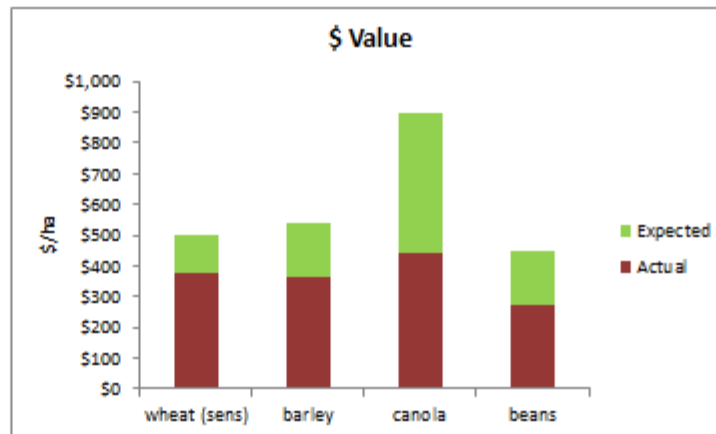
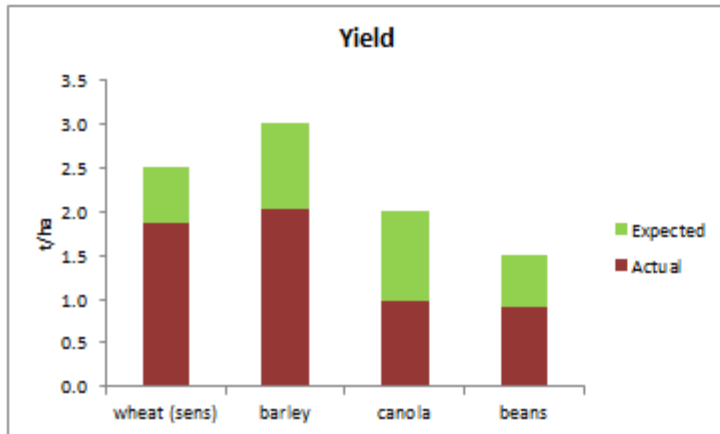
| Current pH value (CaCl <sub>2</sub> ) | This year                          | Next year                          | 3 Year's Time                      | 4 year's Time                      |
|---------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Select pH value                       | Select crop type                   | Select crop type                   | Select crop type                   | Select crop type                   |
| 5                                     | wheat (sens)                       | barley                             | canola                             | beans                              |
|                                       | Enter expected crop yield t/ha     | Enter expected crop yield t/ha     | Enter expected crop yield t/ha     | Enter expected crop yield t/ha     |
|                                       | 2.5                                | 3                                  | 2                                  | 1.5                                |
|                                       | Enter crop/pasture value \$/t      | Enter crop/pasture value \$/t      | Enter crop/pasture value \$/t      | Enter crop/pasture value \$/t      |
|                                       | \$200                              | \$180                              | \$450                              | \$300                              |
|                                       | Estimated loss of production       | Estimated loss of production       | Estimated loss of production       | Estimated loss of production       |
|                                       | 0.4 t                              | 0.6 t                              | 0.4 t                              | 0.3 t                              |
|                                       | Estimated value of lost production | Estimated value of lost production | Estimated value of lost production | Estimated value of lost production |
|                                       | \$72                               | \$107                              | \$185                              | \$90                               |
|                                       | <b>Cumulative Loss /ha \$453</b>   |                                    |                                    |                                    |



pH = 4.5

### The Cost of Not Treating Soil Acidity:

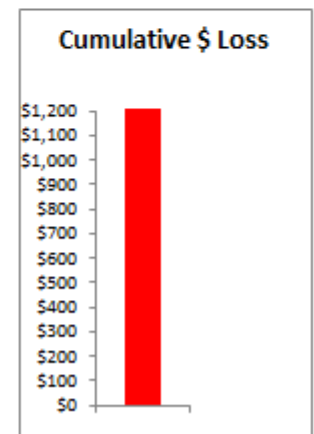
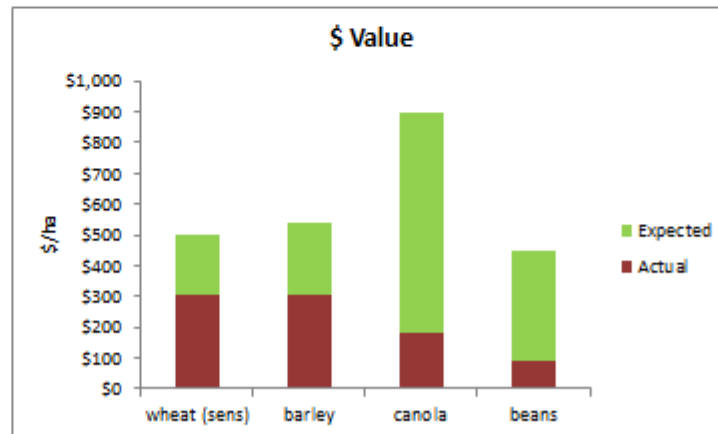
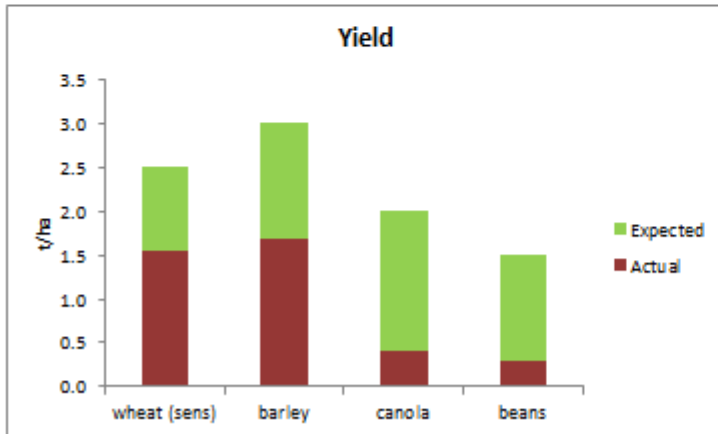
| Current pH value (CaCl <sub>2</sub> ) | This year                          | Next year                          | 3 Year's Time                      | 4 year's Time                      |
|---------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Select pH value                       | Select crop type                   | Select crop type                   | Select crop type                   | Select crop type                   |
| 4.5                                   | wheat (sens)                       | barley                             | canola                             | beans                              |
|                                       | Enter expected crop yield t/ha     | Enter expected crop yield t/ha     | Enter expected crop yield t/ha     | Enter expected crop yield t/ha     |
|                                       | 2.5                                | 3                                  | 2                                  | 1.5                                |
|                                       | Enter crop/pasture value \$/t      | Enter crop/pasture value \$/t      | Enter crop/pasture value \$/t      | Enter crop/pasture value \$/t      |
|                                       | \$200                              | \$180                              | \$450                              | \$300                              |
|                                       | Estimated loss of production       | Estimated loss of production       | Estimated loss of production       | Estimated loss of production       |
|                                       | 0.6 t                              | 1.0 t                              | 1.0 t                              | 0.6 t                              |
|                                       | Estimated value of lost production | Estimated value of lost production | Estimated value of lost production | Estimated value of lost production |
|                                       | \$125                              | \$176                              | \$457                              | \$180                              |
|                                       | <b>Cumulative Loss /ha \$938</b>   |                                    |                                    |                                    |



pH = 4.0

### The Cost of Not Treating Soil Acidity:

| Current pH value (CaCl <sub>2</sub> ) | This year                          | Next year                          | 3 Year's Time                      | 4 year's Time                      |
|---------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Select pH value                       | Select crop type                   | Select crop type                   | Select crop type                   | Select crop type                   |
| 4                                     | wheat (sens)                       | barley                             | canola                             | beans                              |
|                                       | Enter expected crop yield t/ha     | Enter expected crop yield t/ha     | Enter expected crop yield t/ha     | Enter expected crop yield t/ha     |
|                                       | 2.5                                | 3                                  | 2                                  | 1.5                                |
|                                       | Enter crop/pasture value \$/t      | Enter crop/pasture value \$/t      | Enter crop/pasture value \$/t      | Enter crop/pasture value \$/t      |
|                                       | \$200                              | \$180                              | \$450                              | \$300                              |
|                                       | Estimated loss of production       | Estimated loss of production       | Estimated loss of production       | Estimated loss of production       |
|                                       | 1.0 t                              | 1.3 t                              | 1.6 t                              | 1.2 t                              |
|                                       | Estimated value of lost production | Estimated value of lost production | Estimated value of lost production | Estimated value of lost production |
|                                       | \$192                              | \$236                              | \$717                              | \$360                              |
|                                       | <b>Cumulative Loss /ha \$1,505</b> |                                    |                                    |                                    |



# Lime Cheque

A tool for calculating lime application rates for acidic soils and comparing the costs of lime from different suppliers.

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# Lime Sources Cost Comparison

Lime rate calculator

Paddock name   20 ha

| Zone | Area ha              | Initial pH (CaCl <sub>2</sub> ) | Soil Texture         | Target H (CaCl <sub>2</sub> ) | Lime rate            | Org C %              | Adjusted Lime rate |
|------|----------------------|---------------------------------|----------------------|-------------------------------|----------------------|----------------------|--------------------|
|      | <input type="text"/> | <input type="text"/>            | <input type="text"/> | <input type="text"/>          | <input type="text"/> | <input type="text"/> |                    |
| 1    | 20                   | 5.0                             | sandy loam           | 5.5                           | 1.5                  | low                  | 1.1                |
| 2    |                      |                                 |                      |                               | 0.0                  |                      | 0.0                |
| 3    |                      |                                 |                      |                               | 0.0                  |                      | 0.0                |
| 4    |                      |                                 |                      |                               | 0.0                  |                      | 0.0                |

**i** How to use this tool

**i** Selecting an organic carbon %

**x** Clear all entries

**i** Application rate information

**i** Location of lime supplies in SA

**i** Neutralising Value (NV) or Effective Neutralising Value (ENV)?

## Lime Sources Comparison

|                                      | Source 1            | Source 2            | Source 3            | Source 4             |
|--------------------------------------|---------------------|---------------------|---------------------|----------------------|
| <b>Select</b> Source                 | Kulpara             | Penlime             |                     |                      |
| <b>Enter</b> Lime Cost \$/t          | \$15.50             | \$23.00             |                     |                      |
| <b>Enter</b> NV or ENV %             | 94                  | 82                  |                     |                      |
| <b>Enter</b> Tonnes required         | 24                  | 27                  |                     |                      |
| <b>Enter</b> Distance from source km |                     |                     |                     |                      |
| <b>Enter</b> Freight cost \$/kmt     |                     |                     |                     |                      |
| <b>Enter</b> Spreading cost \$/ha    |                     |                     |                     |                      |
| <b>Enter</b> Contract F&S cost \$/t  | \$15.88             | \$19.75             |                     |                      |
| <b>Total \$/t</b>                    | \$31.38             | \$42.75             |                     |                      |
| <b>Product rate &amp; cost</b>       | Rate t/ha Cost \$/h | Rate t/ha Cost \$/h | Rate t/ha Cost \$/h | Rate t/ha Cost \$/ha |
| Zone 1                               | 1.2 \$38            | 1.4 \$59            |                     |                      |
| Zone 2                               | 0.0 \$0             | 0.0 \$0             |                     |                      |
| Zone 3                               | 0.0 \$0             | 0.0 \$0             |                     |                      |
| Zone 4                               | 0.0 \$0             | 0.0 \$0             |                     |                      |
| Paddock                              | \$38                | \$59                |                     |                      |
| <b>Cost per paddock</b>              | \$751.12            | \$1,173.02          |                     |                      |
| <b>Quantity of lime</b>              | 24                  | 27                  |                     |                      |

Either

Or

# Lime Sources Cost Comparison

## Lime rate calculator

Paddock name   20 ha

| Zone | Area ha              | Initial pH (CaCl <sub>2</sub> ) | Soil Texture         | Target H (CaCl <sub>2</sub> ) | Lime rate            | Org C %              | Adjusted Lime rate   |
|------|----------------------|---------------------------------|----------------------|-------------------------------|----------------------|----------------------|----------------------|
|      | <input type="text"/> | <input type="text"/>            | <input type="text"/> | <input type="text"/>          | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 1    | 20                   | 5.0                             | sandy loam           | 5.5                           | 1.5                  | low                  | 1.1                  |
| 2    |                      |                                 |                      |                               | 0.0                  |                      | 0.0                  |
| 3    |                      |                                 |                      |                               | 0.0                  |                      | 0.0                  |
| 4    |                      |                                 |                      |                               | 0.0                  |                      | 0.0                  |



How to use this tool



Selecting an organic carbon %



Clear all entries



Application rate information



Location of lime supplies in SA



Neutralising Value (NV) or Effective Neutralising Value (ENV)?

## Lime Sources Comparison

|        | Select Source        | Source 1             | Source 2            | Source 3            | Source 4            |
|--------|----------------------|----------------------|---------------------|---------------------|---------------------|
|        |                      | Kulpara              | Penlime             |                     |                     |
|        | <input type="text"/> | Lime Cost \$/t       | \$15.50             | \$23.00             |                     |
|        | <input type="text"/> | NV or ENV %          | 64                  | 50                  |                     |
|        |                      | Tonnes required      | 35                  | 45                  |                     |
|        | <input type="text"/> | Distance from source | km                  | km                  | km                  |
| Either | <input type="text"/> | Freight cost         | \$/km/t             | \$/km/t             | \$/km/t             |
|        |                      |                      | \$/t                | \$/t                | \$/t                |
|        | <input type="text"/> | Spreading cost       | \$/ha               | \$/ha               | \$/ha               |
| Or     | <input type="text"/> | Contract F&S cost    | \$/t                | \$/t                | \$/t                |
|        |                      | Total \$/t           | \$31.38             | \$42.75             |                     |
|        |                      | Product rate & cost  | Rate t/ha Cost \$/h | Rate t/ha Cost \$/h | Rate t/ha Cost \$/h |
|        |                      | Zone 1               | 1.8 \$55            | 2.3 \$96            |                     |
|        |                      | Zone 2               | 0.0 \$0             | 0.0 \$0             |                     |
|        |                      | Zone 3               | 0.0 \$0             | 0.0 \$0             |                     |
|        |                      | Zone 4               | 0.0 \$0             | 0.0 \$0             |                     |
|        |                      | Paddock              | \$55                | \$96                |                     |
|        |                      | Cost per paddock     | \$1,103.20          | \$1,923.75          |                     |
|        |                      | Quantity of lime t   | 35                  | 45                  |                     |