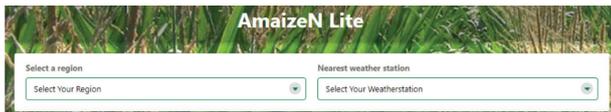# AmaizeN Lite

Maize production is especially diverse in terms of geography and crop management. AmaizeN is a management tool to help growers enhance the economic and environmental sustainability of maize silage and maize grain production. It provides users with a simple and reliable method for forecasting fertiliser nitrogen applications that will maximise gross margin and minimise residual soil nitrogen at the end of the season.

Getting started with AmaizeN Lite

AmaizeN Lite requires management inputs to forecast crop yields and fertiliser nitrogen applications.
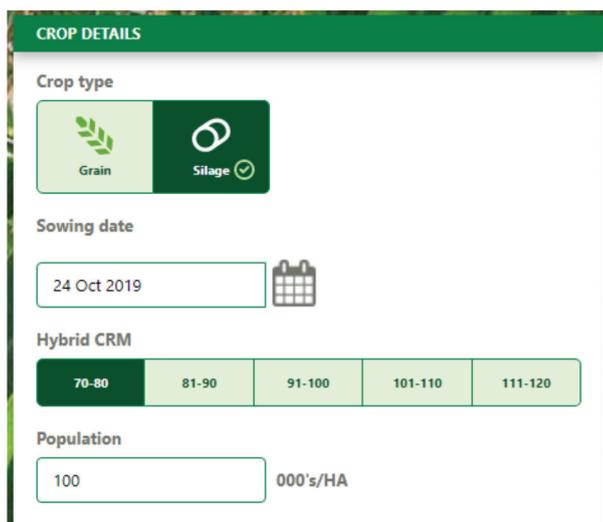
1. Region & nearest weather station

Select the region and weather station closest to your paddock. AmaizeN contains average weather data to predict future crop yields.

2. Crop type, planting date, hybrid CRM and population

Select the purpose of your crop, sowing date, specific CRM range and planting population.

3. Soil type

Select the soil type that best describes your paddock, and select the soil moisture levels at planting.

4. Soil mineral N

Click 'Add Row' to enter laboratory results. Enter the laboratory results for the soil mineral N profile in your paddock. Most laboratories report mineral N in mg/kg (sometimes referred to as ug/g or ppm). Ensure the sampling depths are correctly specified. For more details on collecting soil samples see the notes on the following page.

Soil mineral Nitrogen profile

Depth (cm)	Nitrogen (mg/kg)	
0 - 30	10	⊖
31 - 60	15	⊖

ADD ROW

5. CALCULATE

5. Yield and schedule

Using the entered management inputs, AmaizeN Lite predicts Growth stage & Yield information. Note that the forecaster assumes that other major nutrients are not limiting.

YIELD AND SCHEDULE

Silage yield (T DM/ha)   23.9

Nitrogen

Required N to reach potential yield	220	kg N/ha
The most economic N rate	172	kg N/ha
Silage price	25	c/kg DM
N Fertiliser price	1.10	$/kg N

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Growth stage and yield

Emergence	14 Sep 2019
50% Silking	04 Jan 2020
2/3 Milk line	10 Feb 2020
Black layer	27 Feb 2020

Nitrogen

AmaizeN Lite forecasts two nitrogen fertiliser rates:
1. How much nitrogen is needed to reach potential yield, and,
2. The most economic nitrogen rate.

The most economic nitrogen rate depends on the crop price and fertiliser price which can be updated.

Growth stage and yield

Based on the management inputs, the dates of various growth stages are predicted to assist with crop management and harvest scheduling. Estimated silage or grain yield are also calculated.

A guide to collecting soil samples for mineral N tests

AmaizeN Lite uses mineral N (the sum of Ammonium-N and Nitrate-N) as the estimate of current soil supply when forecasting the need for additional fertiliser. Many laboratories refer to this as the deep mineral N test. This test is different to other measures of nitrogen such as available N and mineralisable N.

When should I collect my samples?

In long-term cropping paddocks, soil samples can be collected around the time of sowing. Avoid sampling prior to cultivation because nitrogen is often released during the disturbance of the soil. In paddocks coming out of long-term pasture, delay sampling until 2 to 3 weeks prior to side-dressing to make sure most of the nitrogen has been released from the grass.

Where should I collect samples from?

Soil samples should be collected from representative areas of the paddock. Adopt a standard sampling pattern (for example a fixed transect or zig-zag) across the field to ensure all areas of the paddock are included. Avoid abnormal areas such as gateways, headlands or small changes in topography and soil type. Sampling after sowing should be in the mid-row to avoid starter fertiliser bands.

How many samples should I collect?

Less than a teaspoonful of soil is used for the final laboratory analysis and that small amount must represent the wider paddock. Collect 15 to 20 cores from each field and mix them thoroughly into a single composite of about 1 kg.

How deep should I sample?

In most situations soil mineral N should be sampled to at least 60 cm, either as a single depth or you may want to split into different layers such as topsoil and subsoil. Make sure you record the depth(s) sampled as this is needed by AmaizeN. Ensure that each sample equally represents the entire depth sampled because nitrogen levels change greatly with depth.

What equipment should I use?

A variety of equipment is available to collect soil samples. Augers, spears and tube samplers may be borrowed or purchased from analytical laboratories. The 'best' device depends on soil type and user preference.

How should I handle my samples after collection?

Soil samples should be submitted to the analytical laboratory immediately after collection so test results are accurate. Refrigerate or freeze the samples if this is not possible, because if left at room temperature nitrogen may be released. Ensure sample bags are air and water tight so moisture cannot enter.