

Estimating kumara yields before harvest

Getting a good estimate of your crop lets you plan properly for the coming harvest. You need to plan for how many bins, bags, or trucks you will need, how many kilograms you will have to sell and what grades they will be. The more samples you take, the more you can rely on your sampling.

Choosing your samples

As a rule it is better to have a few well measured small samples than a couple of big ones. If the garden or field is quite variable, you may need to split it into different parts, and sample each one separately. You certainly want to sample good, average and poor areas if you want a good estimate.

A worked example

Work out your garden area in hectares.

Let's say our paddock is 100 m long by 25 m wide (Remember there are 10,000 m² in a hectare):
That is 100 m x 25 m = 2,500 m²
2,500 m² ÷ 10,000 m²/ha = 0.25 ha

Select your sampling spots (at least three or four).

Measure and calculate the area of each sample spot in m². Make sure it is a rectangle or square shaped area.

Let's say our row spacing is 2.0 m and our sample 1.0m long, so the area of each sampling spot is 2.0 m².

Uplift the crop in the sample areas and weigh what you get (to a minimum of 2 decimal places)

The yield of each sample is the weight harvested ÷ sample area.

Let's say we get 2.20kg, 4.80kg and 6.65kg from each of three sample spots.

$$2.20 \div 2.0 = 1.10 \text{ kg/m}^2$$

$$4.80 \div 2.0 = 2.40 \text{ kg/m}^2$$

$$6.20 \div 2.0 = 3.10 \text{ kg/m}^2$$

Then take the average for a whole field estimate.

$$(1.10 + 2.40 + 3.10) \div 3 = 2.20 \text{ kg/m}^2 \text{ average}$$

So altogether:

$$2.20 \times 10,000 = 22,000 \text{ kg/ha}$$

$$\text{Weight of sample kg/m}^2 \times 10,000 \text{ m}^2/\text{ha} = \text{Yield in kg/ha}$$

$$22,000 \div 1,000 = 22.20 \text{ T/ha}$$

$$\text{Yield kg/ha} \div 1000 \text{ T/kg} = \text{Yield in Tonnes/ha}$$

$$22.20 \times 0.25 = 5.55 \text{ Tonnes}$$

$$\text{Yield per ha T/ha} \times \text{Field area} = \text{Total crop weight}$$

So we expect to harvest five and a half tonnes of kumara from our field.

How much of each grade will I have?

If you separate the harvest into different grades, you can do the calculations for each grade separately, and know how many kilos of each grade you will have to sell.

Now what?

Now that you have an estimate of your yield, you can work out how much packaging you will need, how much space you need for storing your crop, how long it might take to harvest and even how much you can expect to earn from it. A reliable yield estimate will make planning for harvest and post-harvest much easier.

'Te Pānui Tips' are simple fact sheets that cover topics designing organic crop production systems on the East Coast.

Te Pānui is edited by Page Bloomer Associates for Crop & Food Research under FRST Funded Project C02X0305 Science for Community Change.

This information sheet is intended to provide accurate and adequate information relating to the subject matters contained in it. It has been prepared and made available to all persons and entities strictly on the basis that Page Bloomer Associates Limited, its researchers and authors are fully excluded from any liability for damages arising out of any reliance in part or in full upon any of the information for any purpose. No endorsement of named products is intended nor is any criticism of other alternative, but unnamed product. www.pagebloomer.co.nz