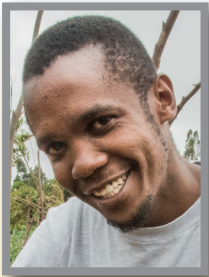


Butternut Squash



If undelivered please return to the Mediae Company, P.O. Box 215- 00502, Karen

So you would like to grow Butternuts?



Issah

Issah decided to grow butternut squash. Butternuts have a good market. They are also very good for you and your family to eat. They contain a lot of vitamins.

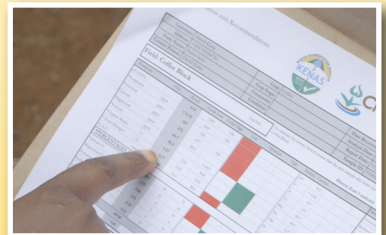
Before you start a business, find out if your soil is good for butternuts, and which variety will grow best. Then you can look for a market and do a budget. This will tell you whether your business might work.

Do a Soil Test

Some areas and soils are better for growing butternuts than others. Butternuts like well drained soils, such as sandy loams. They grow best at pH 6.0-6.5 and do not like salty soil. They do not like the cold.

Ask **CropNuts** to come and do a soil test. They will take samples of your soil from your shamba to test. They will send you a report which will say:

- How healthy your soil is
- Which fertilizers to add to make your soil better
- Which crops will grow well in your soil.



Green = nutrient levels are good
Red = nutrient levels are bad

Follow the advice on your soil test results. You will save money on fertilizers and pesticides. You will get a bigger and better crop which will give you more harvest.

How do you find a market?

Find out the average price of butternuts. You also need to find a buyer for your butternut. It is better to sell all of your butternuts to 1 buyer.

 PRODUCT	 PRICE	 PLACE	 PROMOTE
Is there a demand for butternuts?	What price will you sell at?	Where will you sell?	How will you advertise?
What are others producing?	Do some varieties make more money?	Visit local shops, schools, hotels and markets.	OLX?
What does the market expect?	Can you make a profit?	Talk to your neighbours.	Social media? Posters and flyers?

Which variety should you plant?

Choose from one of these varieties from **Royal Seed**:

WALTHAM

- Uniform fruits that are very nutritious and tasty
- Matures 90-100 days after planting
- Yields 5-6 tonnes per acre
- Shelf life of up to 6 months.



ATLAS F1

- Large uniform fruits for fresh and processing market
- Does not get diseases easily
- Grows well in hot and cool areas
- Yields 12-18 tonnes per acre. Fruits weigh 2-3 kg
- Shelf life of up to 6 months.



Always buy **certified seeds**. 95-100% of the seeds will grow, so you will use less seeds.

Certified seeds also:

1. Give high yields
2. Are resistant to some diseases
3. Allow you to get crop of the variety you wanted

Buy **Waltham** seeds in packets of 10g, 25g, 50g, 100g, 250g and 500g.
Buy Atlas F1 seeds in packets of 100 seeds.

Buy certified seeds from agrovets.

How do you do a budget?

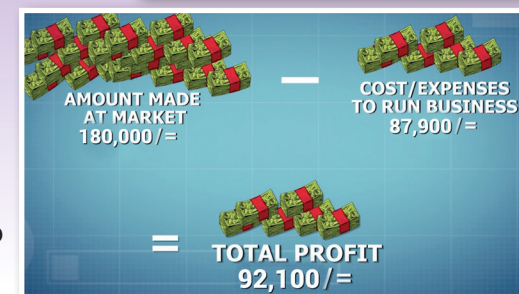
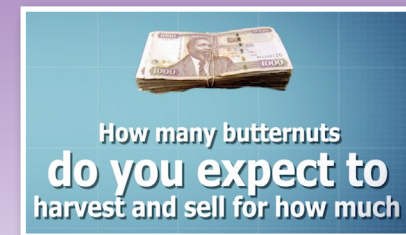
A budget is a plan of the income and costs of your business. It is for a specific period of time or a production cycle or season.

1. Find out your costs. Think of all of the things you need to grow butternuts.

2. Work out how long it will take for you to make a profit. If your business has high capital investments, it may take several seasons to make a profit.

3. Work out your PROFIT:
income – costs = total profit

e.g. In one season, it costs 87,900/= to grow 1 acre of butternuts. Each acre gives 6,000 butternuts. Each fruit is sold at 30/= . This is a total income of 180,000/= . Therefore: **expected income of 180,000/= – production costs of 87,900/= = a profit of 92,100/=**



What is a rolling budget?

This is a budget that is updated on a regular basis. It covers the costs for each week or month. It allows you to change your budget as you go along. e.g.

Date	Details	Budget	Money out
Week 2: 1-7 Feb 2017	Herbicide	4,500/=	4,400/=
	Labour	7,000/=	6,500/=
	Miscellaneous (any costs you did not expect)	5,000/=	2,800/=
	Week 2 TOTAL	16,500/=	13,700/=
Week 3: 8-15 Feb 2017	Labour	2,500/=	2,500/=
	Miscellaneous	6,000/=	5,500/=

Sometimes prices change. You can change your budget as you go. If your total budget is **the same or more than** your total money out, you are on the right track.

Can you afford to start a butternut business? Do you need a loan?

If you do not have enough money to cover the start-up expenses of your business, you may need to borrow money. Talk to banks and SACCOs. Some loans you can pay back using your mobile phone.

The bank will charge you a percentage of your loan, called **interest**. This is how the bank makes money from you. Choose a loan with low interest.



SAVE MONEY

If you can, it is always better to save. All loans carry risks and costs. You can make money whilst saving. Some banks pay you to keep your money with them.

How will you water your crop?

Butternuts need water to grow well. Sometimes the rain does not come or is not enough. Hosepipes and watering cans waste time, water and money.

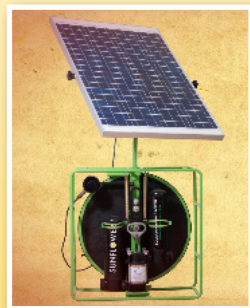
The DLTP farmers put in a **drip irrigation system** from **SunCulture**. They:



- Use less water as the water from the pipe goes directly to the plant roots.
- Water is not wasted on weeds.
- Plants do not get wet and have less fungal diseases.
- Once the drip lines are laid, you just have to turn on the tap when you want to water.

The DLTP farmers also decided to buy a **Futurepump** solar pump together. They saved a lot of money on electricity. The pump works by using energy from the sun. You can even charge your phone for mobile banking!

You can pay off the cost of the **Futurepump** after 3 seasons. After this, your pumping will be free!



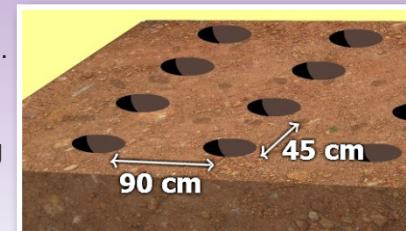
Prepare your land

Plough your land early. You need to go 20-30 cm down into the soil. Break up lumps of soil. Mix in well-rotted manure. Smooth the soil surface. If your shamba is in a high rainfall area, make raised beds.

Plant your Seeds

Plant the seeds 45 cm apart in rows 90 cm apart. Cover the seeds with at least 2 cm of soil.

At planting, add **DAP** or **NPK 17:17:17**. Use 80 kg per acre.



Topdressing

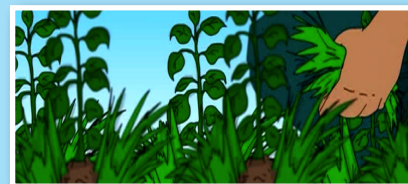
Topdress with **CAN** when the vines are about 30 cm long. Use 1-2 tablespoonfuls per plant. You will need about 100 kg **CAN** per acre.

Topdress again 1 month later when they start to flower. You will need about 100 kg **CAN** per acre.



Weeds

Weeds take water and nutrients from your crop. They can badly affect your crop between when the shoots emerge to when the vines grow. Weeds also hide pests and diseases.



Start weeding when the butternut plants are 2 weeks old. Pull out weeds when you see them. As the butternut vines and leaves grow, you will find you have less weeds.

Pollination

Butternuts have male and female flowers. The flowers need to be **pollinated** for a fruit to grow well. This means that a bee has to visit a male flower, then a female flower.



Attract bees with flower patches in your shamba. You could also keep bees and sell the honey.

Pests and Diseases



Cucumber Beetles

Cucumber Beetles feed on the stems, leaves and fruits of your butternut plants. You usually see them inside the flower. They lay eggs in the soil. The larvae eat the roots of the butternut plants. They can also bring Bacterial Wilt and virus diseases.

Kill Cucumber Beetles with **Nimbecidine**. Mix 30ml **Nimbecidine** with 20L of water in a knapsack. Spray the plants 15 days after planting. Repeat every 15-20 days.



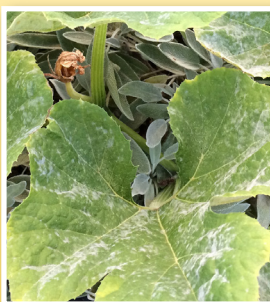
Melon Fly and White Fly

Melon Flies feed on the stems, leaves, roots and fruit of your butternut plant. **White Flies** suck the sap from the leaves.

White Flies also carry **Cucumber Mosaic Virus (CMV)**. CMV attacks the leaves and causes poor growth and badly formed leaves.

Kill Melon Flies and White Flies with **Asataf**.

Mix 20g **Asataf** with 20L of water in a knapsack. Spray when you see melon flies or white flies. Spray again after 10 days if the attack is bad. If not, spray after 21 days.



Powdery Mildew

Powdery Mildew is a fungus that attacks the leaves. Treat Powdery Mildew with **Control**.

Mix 12g (1 tablespoon) **Control** with 20L of water in a knapsack. Spray your butternut plants every 14 days.



Harvest and Storage

Butternuts should be ready to harvest after 75-150 days. They should mature on the plant. If you harvest too early, the quality will not be as good. The skin should be tough and not scratch easily.

Harvest the fruit with a part of the stem attached. Take care not to damage the fruit during harvest. It will store for longer.



Store butternuts in a cool dry place until the market price is good. Store for up to 4 months.

Why keep records?

Keeping good crop-growing records will help you to run your business better. Keep records on field history, problems faced, major activities like planting, spraying, diseases, harvesting, etc.

Date	Details	Action
21/02/17	Saw some weeds	Removed and burnt weeds
23/02/17	Heavy rain today	Postpone irrigation for 3 days
06/03/17	Saw a white powder on the leaves – powdery mildew?	Applied Control fungicide

What next?

Look back at your budget.

Have you made money from your first crop of butternut squash?

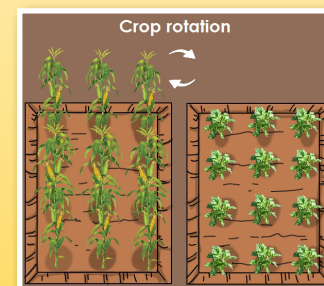
What mistakes did you make? What have you learnt?



Crop Rotation

Different crops take different nutrients from the soil. They also have different pests and diseases. These can build up if you plant the same crop again and again.

After your butternut crop, try maize or beans.



For more information on Butternut

To get a soil test, call **Daktari Wa Udongo** on +254 790 49919 or send an email to **CropNuts** on support@croppnuts.com to find out the closest field agent in your area.

Contact **Osho Chemicals** on 0711 045000 or email marketing@oshochem.com or SMS 20560.

To purchase butternut seeds, contact **Royal Seed** on 0734 257635 or email customerservice@khs.co.ke

For drip, mist or solar-powered irrigation systems call **SunCulture** 0700 327002 or visit their website to get a quote: <http://sunculture.com/request-a-quotation>

Contact **Futurepump** on 0796 514409 or email DLTP@futurepump.com

Use our budgeting tool, **Budget Mkononi** on our website www.dontlosetheplot.tv and learn the costs of growing butternut and how much profit you can make.



Sign up to our mobile service iShamba for expert advice on growing butternuts. Simply SMS the word 'VIJANA' to 21606.

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