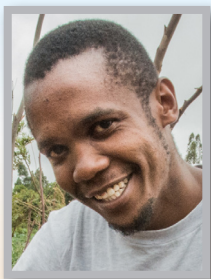


Spinach



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

So you would like to grow Spinach?



Issah

Issah decided to grow spinach. Spinach is a good crop as it does well under different conditions. There is also a good market for spinach.

Before you start a business, find out if your soil is good for spinach, 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 spinach than others. Spinach does well in cool climates (16-20°C) with rainfall of 1500 mm per year. It likes well-drained fertile soils with a pH of 6.0-6.5. It grows at almost all altitudes, but prefers 800-2200 m above sea level.

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 profit.

How do you find a market?

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



PRODUCT

Is there a demand for spinach?

What are others producing?

What does the market expect?



PRICE

What price will you sell at?

Do some varieties make more money?

Can you make a profit?



PLACE

Where will you sell?

Visit local shops, schools, hotels and markets.

Talk to your neighbours.



PROMOTE

How will you advertize?

OLX?

Social media?

Posters and flyers?

How will you water your crop?

Spinach needs water to grow well. You cannot rely on the rains. Sometimes they do not come or may not be enough.

Sprinkler irrigation can spread diseases such as Leaf Spot. The DLTP Farmers decided to put in a **drip irrigation system** from **SunCulture**.



Drip irrigation systems:

- 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. The pump works by using energy from the sun. You can even charge your phone.

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



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 spinach. Think about seeds, fertilizers and water. Find out how much they cost.

2. Work out how much money you will make. Work out how long it will take for you to make money.

3. Work out your PROFIT:

income – costs = total profit

e.g. It costs 100,000/= to grow 1 acre of spinach. Each acre gives 20,000 kg of spinach. Each kg is sold at 1,200/=. This is a total income of 240,000/=. Therefore: **expected income of 240,000/= – production costs of 100,000/= = a profit of 140,000/=**

Item	Budget
Soil Test	2,500/=
Fertiliser	50,000/=
Seeds	25,000/=
Tools	5,000/=
Labour	50,000/=
Other costs	XXXXX/=

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	6,000/=	6,500/=
	Miscellaneous (this is any costs you did not expect)	5,000/=	2,800/=
	TOTAL	15,500/=	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 spinach 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. Remember that loans are not free. You will have to pay back your loan with interest.

Buying Seeds

Buy a variety called **Fordhook Giant** from **Royal Seed**. This variety:

- Grows well even in a hot climate
- Has large and crumpled leaves
- Grows to a height of 65 cm
- Matures 60-70 days after transplanting.

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

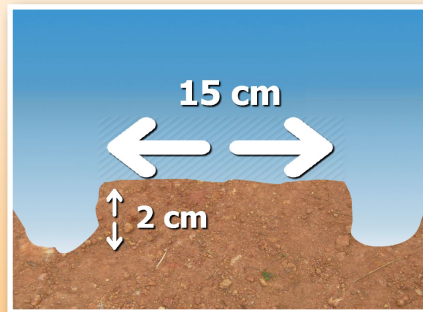
1. Give high yield of good quality.
2. Are resistant to some diseases
3. Grow fast. The plants are strong and uniform.



Buy certified seeds from agrovet. Fordhook Giant seeds come in pack sizes of 10g, 25g, 50g, 100g, 250g and 500g.

Start up your Spinach Nursery

1. Clear all weeds and grass. Dig the soil well so that there are no lumps.
2. 1 week before planting, add a 7cm layer of compost or well-rotted manure. Mix into the soil. Water the bed.
3. Soak the seeds in cold water for 24 hours before planting.
4. Plant seeds in lines 2cm deep in rows 15cm apart. Cover the seeds with a thin layer of soil. Add dry grass as mulch. This will protect the soil and keep water in. Water the bed.



Germination

Your seeds will start to germinate after 5-7 days. Remove the grass and put a shade over the nursery bed.

The shade should be 1m high. Put grass on the top but make sure some sun light can get through.

Remove weak seedlings. Plant them in another bed. Keep the soil damp but not wet. Too much or too little water is bad for your seedlings.



Too much water

- Nutrients in the soil are washed away.
- There will be less oxygen in the soil.
- The plant will fall over and the stem will rot. The plant can die.

Too little water

- The plant wilts.
- The plant cannot take up nutrients well so growth is poor.

Prepare your land

As soon as your seeds are planted in your nursery, plough your land. Break up lumps of soil. Mix in well-rotted manure. Smooth the soil surface.

Your soil test will tell you which fertilizers to add to your soil and how much. Usually you will be



told to add an NPK fertiliser at planting. This contains Nitrogen, Phosphorous and Potassium, and sometimes other nutrients too.

Mavuno makes fertilisers specific to your crop. Buy **Mavuno** fertilizers from agrovet.

Weeds

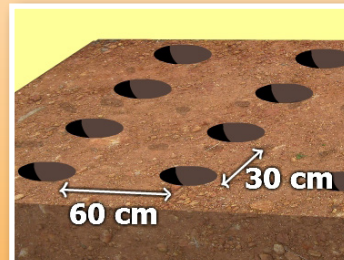
Weeds take water and nutrients from your crop. They also hide pests and diseases. Take out weeds when you see them.

You can also use herbicides. Always follow instructions and wear protective gear when

Transplant your seedlings

Transplant seedlings after 3-4 weeks.

The day before you transplant, take the shade off the nursery bed and reduce watering. This is called 'hardening'. It gives the seedlings a chance to get used to the strong sunshine.



Dig planting holes 30cm apart in rows 60cm apart.

Mix 1 bottle top of TSP and a handful of manure with the soil in each hole.

Plant the seedling. **Water** the seedlings.

Topdress with 1 teaspoon CAN per plant 3 weeks after transplanting.

Transplant early in the morning (6-10 am) or late in the afternoon (4-6pm).

Pests and Diseases



Whiteflies and Aphids

Whiteflies are tiny white insects that suck the sap from spinach leaves. **Aphids** are tiny insects that cause the spinach leaves to fold.



Kill Whiteflies and Aphids with **Cyclone**. Mix 30 ml **Cyclone** in 20 litres of water in a knapsack. Spray when you see Whiteflies or Aphids.



Caterpillars

Caterpillars make holes in the spinach leaves. Leaves with holes will not get a good price at market.

Kill Caterpillars with **Mida**. Mix 10ml in 20 litres of water. Spray the leaves when you see caterpillars. **Mida** will also kill whiteflies.



Leafspot

A disease caused by a fungus. You see small dark spots on the leaves. The spots turn brown or grey.

Treat leafspot with **Sulcop 50DF**. Mix 50g **Sulcop** in 20 litres of water in a knapsack. Spray the leaves. It works best when you use it to prevent leafspot.



Harvest

Harvest spinach when it has large, fresh and mature leaves. This will be after 2-3 months.

Harvest the leaves at least twice a week. Eat or sell as soon as possible. You cannot store spinach. Make sure you have a market before you harvest. You should be able to harvest for 2-3 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 a holes in the leaves – caterpillars?	Applied Mida.
23/02/17	Heavy rain today	Postpone irrigation for 3 days
25/02/17	Saw some weeds	Removed and burnt weeds.

What next?

Look back at your budget. Have you made money from your first crop of spinach? What mistakes did you make? What have you learnt?



For more information on Spinach

To get a soil test, email support@cropnuts.com to find out the closest **CropNuts** field agent in your area.

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

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

Contact **Mavuno** on 0702 891 893 or email info@mavunofertilizers.com

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 spinach and how much profit you can make.



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

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