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Centro de Investigación y Extensión Agrícola

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YAM - CUBA

**GROWING MINI-SETT YAM
IN JAMAICA**



A MANUAL FOR FARMERS

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IICA OFFICE IN JAMAICA

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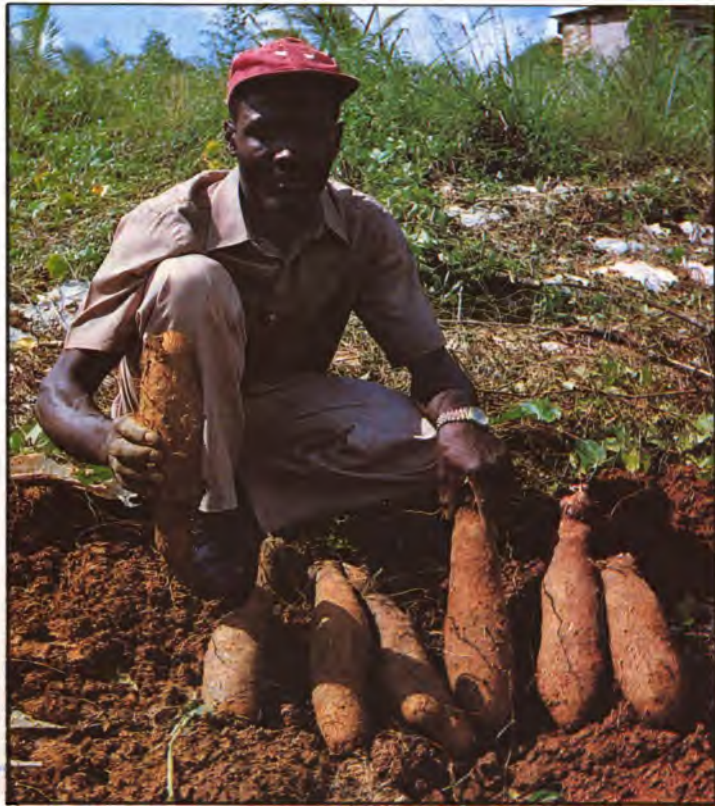


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***GROWING MINI-SETT YAM
IN JAMAICA***



A MANUAL FOR FARMERS

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For

IICA OFFICE IN JAMAICA

Inter-American Institute for Cooperation on Agriculture

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INTER-AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE

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PRESENTATION

Since 1991, Jamaican farmers have been systematically exposed to "Mini-Sett" yam technology, through the *National Yam Export Development Project* by the Government of Jamaica.

The project concentrates on export varieties of yam in the parishes of Clarendon, Manchester, Trelawny, St. Ann, St. Catherine, St. Andrew and Hanover. The project is executed by the *Rural Agricultural Development Authority (RADA)* with administrative and technical monitoring support provided by IICA. Major funding is provided by the *Agricultural Export Service Project* of USAID.

Training through on-farm demonstrations, field days and the use of other methods such as brochures and video programs is how "Mini-Sett" technology is being spearheaded. IICA is honoured to make this manual available to the farming community, and sincerely wishes that it will be useful in the modernization of yam production in Jamaica.

The IICA office in Jamaica acknowledges and greatly appreciates the support of the farmers and technicians who have helped make this manual possible.

Dr. Armando Reyes Pacheco
Representative



WHAT IS IICA?

The Inter-American Institute for Cooperation on Agriculture (IICA) is the specialized agency for agriculture of the inter-American system. The Institute was founded on October 7, 1942 when the Council of Directors of the Pan American Union Approved the creation of the Inter-American Institute of Agricultural Sciences.

IICA was established as an institution for agricultural research and graduate training in tropical agriculture. In response to changing needs in the hemisphere, the Institute gradually evolved into an agency for technical cooperation and institutional strengthening in the field of agriculture. These changes were officially recognized through the ratification of a new Convention on December 8, 1980. The Institute's purposes under the new Convention are to encourage, facilitate and support cooperation among the 32 Member States, so as to better promote agricultural development and rural well-being. With its broader and more flexible mandate and a new structure to facilitate direct participation by the Member States in activities of the Inter-American Board of Agriculture and the Executive Committee, the Institute now has a geographic reach that allows it to respond to needs for technical cooperation in all of its Member States.

The 1987-1993 Medium Term Plan, the policy document that sets IICA's priorities, stressed the reactivation of the agricultural sector as the key to economic growth. In support of this policy, the Institute is placing special emphasis on the support and promotion of actions to modernize agricultural technology and strengthen the processes of regional and subregional integration.

In order to attain these goals, the Institute is concentrating its actions on the following five programs:

- Agricultural Policy Analysis and Planning
- Technology Generation and Transfer
- Organization and Management for Rural Development
- Marketing and Agroindustry
- Animal Health and Plant Protection

These fields of action reflect the needs and priorities established by the Member States and delimit the areas in which IICA concentrates its efforts and technical capacity. They are the focus of IICA's human and financial resource allocations and shape its relationship with other international organizations.

To further reach its objectives of encouraging, promoting and supporting the efforts of the Member States in the area of agricultural and rural development, the Institute renders technical services aimed at strengthening national institutions involved in this sector and serves as a multinational body for cooperation among member countries. IICA also provides direct advisory services and consultancies, implements projects, and acts as a forum and vehicle for the exchange of ideas, experiences and cooperation between the countries, organizations and other entities active in the agricultural arena. The contributions provided by the Member States and the ties IICA maintains with its

twelve Permanent Observer Countries and numerous international organizations provide the Institute with channels to direct its human and financial resources in support of agricultural development throughout the Americas.

The Member States of IICA are: Antigua and Barbuda, Argentina, Barbados, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, the Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, the United States of America, Uruguay and Venezuela.

The Permanent Observer Countries of IICA are: Arab Republic of Egypt, Austria, Belgium, Federal Republic of Germany, Romania, Hungary, the Federation of Russia, France, Israel, Italy, Japan, Netherlands, Portugal, Republic of Korea and Spain.

CONTENTS

1. What is Mini-Sett Yam?	1
2. Some Advantages of Growing Mini-Sett Yam	2
3. Step One: Preparing Your Nursery	3
4. Step Two: Selecting The Planting Material And Cutting the Setts	5
5. Step Three: Treating the Cuttings	7
6. A Dirt Nursery Alternative	11
7. Step Four: Preparing Continuous Mounds	12
8. Using Continuous Mounds to Avoid Soil Erosion	14
9. Step Five: Applying Plastic Mulch	16
10. Step Six: Transplanting the Seedlings From the Nursery	18
11. Step Seven: Harvesting Your Mini-Sett Yam	21
12. Further Information	24
13. Bibliography	25



WHAT IS MINI-SETT YAM?



Mini-Sett is a new technology for growing yam for the export market. In traditional yam cultivation, the yam heads of large yams must be removed before exporting. In Mini-Sett technology, however, you can produce small, whole yams that are more uniform in shape which do not need to be treated with chemicals before they are exported. For this reason, Mini-Sett yams are very desirable for the export market.

SOME ADVANTAGES OF GROWING MINI-SETT YAM



SOME ADVANTAGES OF GROWING MINI-SETT YAM:

- 1. Mini-sett is a valuable export crop which does not need to be chemically treated before export.**
 - 2. Mini-sett can be grown on hillsides using sustainable agricultural methods.**
 - 3. Mini-sett makes better use of planting material so that more yam is harvested.**
 - 4. Mini-sett does not require the large sticks that are used for traditional yams.**
 - 5. Mini-sett is a low risk crop with a secure export market that will yield good profits.**
-

STEP ONE

PREPARING YOUR NURSERY



PREPARING YOUR NURSERY

1. Find a place that is dry.



2. Prepare a raised bed for good drainage by using stones. Make the bed about 38 centimeters or 12 to 15 inches high.
-



3. Cover the bed with 13 centimeters or 5 inches of clean, coarse sawdust. Make sure the sawdust was stored in a clean place so that it does not carry any organisms that could rot your seedlings.
 4. Build a cover for the nursery to protect your seedlings from too much sun and rain.
 5. Cut four bamboo posts for each corner and lay bamboo beams from corner to corner.
 6. Then, lay banana leaves or other thatch material across for cover.
-

STEP TWO

**SELECTING THE PLANTING MATERIAL
AND CUTTING THE SETTS**



*(This yam has "burning" or nematode damage.
Do not choose yams like this).*

PREPARING THE PLANTING MATERIAL:

1. Do not choose yams that have "burning" or nematode damage.
 2. Choose yams that are healthy.
-

- 3. Then, cut the yam in slices.**
- 4. Cut the slices in quarters again, so that each piece has a portion of skin. Each should be about 1½ inches or 4 centimeters thick and weigh about 4 ounces or ¼ pound.**



STEP THREE

TREATING THE CUTTINGS

TREATING THE CUTTINGS

1. **Be sure no children or small animals are around when mixing your chemicals to treat the setts.**
2. **Then add two handfuls of woodash.**



3. **Next, add 2 teaspoons of Benlate to 2 litres or about half a gallon of water.**



3. Mix thoroughly.



4. Dip the cuttings into the solution so that each piece is **fully** coated. Be careful not to get the mixture on your hands.



5. Let the setts dry in a cool place for 2 to 4 hours.
-

6. **Once they are dry, plant the setts a closely as possible in the nursery and cover them with 1 inch (about 2 centimeters) of sawdust.**



7. **Sprinkle them lightly with water every few days.**
-

- 8. After about 6 weeks your setts will begin to sprout and after 8 to 12 weeks they will be ready to plant.**



Question: *What would happen if I do not treat the cuttings before putting them in the nursery?*

Answer: *If you do not treat the cuttings, they will rot and all of your planting material will be lost.*

A DIRT NURSERY ALTERNATIVE

Question:

What can I do if I cannot build a sawdust nursery or cannot get the chemicals needed to treat the setts?



Answer:

- *An alternative to the sawdust nursery is to make a dirt nursery. When you use a dirt nursery, you will need to use larger setts.*
 - *Use the head setts of yams that are about ½ pound or 110 grams each as they will sprout earlier.*
 - *Treat them with woodash to prevent rotting.*
 - *Plant them in a dirt nursery that is covered with plastic or grass to keep off excess rainwater while sprouting.*
-

STEP FOUR

PREPARING CONTINUOUS MOUNDS



To reduce soil erosion and to plant more yams in an area, prepare the continuous mounds as follows:

1. Use a hoe to break down any large clods of soil in the earth. Shape the mounds so that they are at least three feet or one metre apart and one foot high.



2. **Prepare the soil to a fine till so that is easy for the tubers to develop a uniform shape as they grow down.**
3. **Apply the fertilizer that is best for your soil and distribute it across the ridges.**



4. **Then use the hoe to turn the fertilizer into the mounds.**
-

USING CONTINUOUS MOUNDS TO AVOID SOIL EROSION

Question:

What would happen if I do not use continuous mounds on the hillside?



Answer:

If we do not use continuous mounds, the rain will erode all of the soil on our hillsides like this, destroying our environment and our livelihood as farmers. With continuous mounds, the rain collects between the ridges and soaks the earth instead of washing the soil away.

Question:

What would happen if I do not make the mounds at least one foot high and about three feet apart?

**Answer:**

If the mounds are not deep enough and far enough apart, your yams will not grow uniformly, but will grow toes instead because they will not have enough room to grow down.

STEP FIVE

APPLYING PLASTIC MULCH

APPLYING PLASTIC MULCH

1. **Wait to apply the plastic mulch until you get at least one heavy rain that thoroughly soaks the soil.**



2. **Carefully roll the plastic mulch out across the ridges with the black side down.**
-

-
3. Use stones, wooden pegs or sticks to keep the plastic mulch in place.



STEP SIX

TRANSPLANTING THE SEEDLINGS FROM THE NURSERY



1. After 6 weeks the seedlings will sprout, and by 8 to 12 weeks they will be ready to transplant from the nursery to the continuous mounds.



2. To make proper holes in the plastic mulch, use a knife or machete and cut an X that is about 15 inches or 38 centimetres in length.
-

-
3. **Continue to cut holes about 12 inches or 38 centimetres apart right across the length of the ridge.**
 4. **Then transplant the seedlings. Be sure that no part of the plastic mulch touches the plant or the plastic mulch may damage the plant if it gets too hot in the sun.**



5. **To keep the plastic mulch from burning the seedling, push the plastic into the earth so that it does not touch the plant.**
 6. **Cut holes in the plastic between the mounds to let rain water into the soil. Cut the holes every few feet.**
 7. **Remove weeds periodically.**
-

Question:

What if I cannot afford to use plastic mulch for my mini-sett?



Answer:

You can use grass mulch instead of plastic mulch.

STEP SEVEN

HARVESTING YOUR MINI-SETT YAMS

HARVESTING YOUR MINI-SETT YAMS

1. After about 4 months, the vines will cover all of the plastic mulch. Allow the yams to grow for a total of 8 or 9 months.
2. To check if the yams are mature, or to check if there is any "burning" or nematode damage, pull back the vines and the plastic mulch and then dig out one of the yams.



3. Use a cutlass to carefully dig out the yam. Dig a few inches away from the yam first so that you do not cut the yam accidentally.
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4. You will find a uniform yam that has grown from one small piece of planting material!



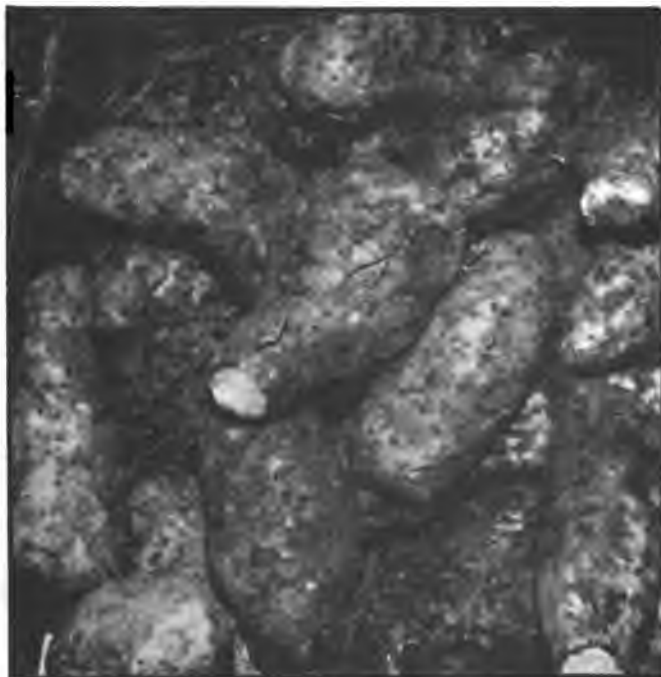
5. If the yam is at least 2 pounds (about 1 kilogram) in size, you can harvest it for export.



-
6. Take your Mini-Sett yams to the Agricultural Marketing Corporation.



7. There, they will buy them and pack them for export.



FURTHER INFORMATION

Question:

Where do I go if I need further information about mini-sett production?



Answer:

Talk to your agricultural extension officer at the nearest RADA or JAS office.

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