

COFFEE NEWS

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THE DEVELOPMENT OF A TRAP METHODOLOGY FOR THE CONTROL OF THE COFFEE BERRY BORER

BASIC THEORIES OF THE TRAP: ITS APPLICATION TO THE BORER

The trap is a method that exploits the sensitivity of insect pests by different stimuli: physical, chemical, mechanical, etc. (Balachowsky, 1951). Its use has been in existence since the start of the twentieth century. However, after the widescale use of DDT (an insecticide) as well as the appearance of other new pesticides, the use of the trap was abandoned.

The olfactory attraction: Certain chemicals called kairomones are released by the coffee fruits which attract the borer, and causes it to detect and find its food source and reproduction site. These kairomones can be used in the borer trap as artificial attractants.

A commonly used volatile chemical substance, already known as a kairomone which attracts the borer is methanol.

Scientists have experimented with the trap in Brazil, New Caledonia, and Mexico. However, there was no continuity in these studies. In 1997, the first trials were carried out in El Salvador with mixtures of alcohols in experimental traps. This gave promising results. As a result of those trials a trap project was started there, with the aim of developing a complementary control method to biological control and which is compatible with the integrated management of the coffee berry borer (C.B. B).

THE STRATEGY AND MECHANISM OF THE BORER TRAP

The strategy of the trap is to capture the residual borer when it is migrating from fallen berries on the ground, in order to reduce its dispersion and avoid colonization of the new fruits. During its migration the borer detects the odour of the attractant in the trap and thus orientates its flight towards the trap. Attracted by the odour and colour, the borer falls in the trap. The borer trap is totally original and is developed in accordance with the following features of the borer:

- Its flight pattern
- Its behavioural approach
- Its landing pattern

There are four main components of the trap:

- The capturing (receptable)
- The dispenser
- The attractant
- The dispenser support & Cone



The coffee berry borer trap established in a plantation

THE TRAP ESTABLISHED IN A PLANTATION

The trap is placed on a coffee branch at a distance of 24m between traps and at a height of

1.20 to 1.30 m from the tip of the dispenser to the ground. The timing of placement should be at the end of the dry period towards the start of the rainy period. Traps should remain in the field for approximately four months. A dispenser will last for two months, hence two fills per season are required.

The most attractive colour to the borer is red, hence the cone as well as the supporting structures of the trap and the attractant are in that outstanding colour. There should be seven (7) traps to an acre or seventeen (17) traps to a hectare.

Message From The Editor's *The Director General* *Report*

Since assuming office in December 1999 the Coffee Industry Board has continued the process of change. These changes relate to structural reorganization of the Board into a Commercial Division and a Regulatory Division. The major objective is to create entities that are more efficient and provide a better delivery of service to all sectors of the industry. In this regard I am reminded that "change is made without inconvenience, even from worse to better". (Richard Hooker quoted by Samuel Johnson in the Preface to the English Dictionary).

I am pleased to be associated with the new publication of 'Coffee News'. It will assist greatly the process of communication, which is vital if our stakeholders are to understand and appreciate the process of change. It will also assist in the conveyance of technical information as well as to keep readers up to date with general happenings within the Coffee Industry.

Therefore may I take this opportunity to thank the Editorial Committee for their vision, effort and hard work in putting this publication together. May I also encourage readers of "Coffee News" to make the best use of this Newsletter. It is the hope of the Editorial Committee that you will provide feedback and contribute articles for future publication. Let us be reminded that effective communication is a two way process.

May success attend our efforts as we strive to continue towards the pinnacle of achievement.

Dr. Cecil Goodridge
Director General

Coffee News was first published in March 1997 with the objective of informing, educating and entertaining the coffee fraternity on matters relating to the industry. As to whether or not these objectives were achieved, the jury is still deliberating.

It was intended to publish the newsletter on a quarterly basis and to use the C.I.B's website at www.jamaicancoffee.gov.jm to reach a wider readership both locally and overseas. Coffee News did not escape the effects of change within the industry in general and the CIB in particular and the last publication was made in **September 1998**.

However, the need for more effective channels of communication within the coffee industry together with the increasing availability of technical information has prompted the drive to restart publication of Coffee News. With this in mind, a member of staff, Miss Simone Watson, was asked to conduct a review of previous publications and make recommendations for improvements. Her report was completed and submitted in a document dated December 21, 2000. The recommendations arising from the report were reviewed by the Editorial Committee and resulted in this edition of 'Coffee News'.

While the Editorial Committee is fairly satisfied with this first attempt it is equally conscious of the need for further improvements and invites suggestions, reviews, articles and comments from our readers. Our intention is to inform, update, educate and possibly to entertain you our partners in coffee production.

Happy Reading.

Alford Williams
Chairman, Editorial Committee

RECIPE

JAMAICAN EGG NOG

- 1 quart prepared Egg Nog
- 1 cup brewed Jamaican Coffee, cooled
- 1/2 cup Rum or Coffee Liqueur
- 1 teaspoon Vanilla
- Nutmeg for garnish

Brew coffee and allow to cool. In a pitcher, combine egg nog, coffee, rum (or coffee liqueur), and Vanilla. Pour mixture into individual punch cups, dust with nutmeg, and serve.

Yield: 8 servings

'COFFEE NEWS' is a publication of the Coffee Industry Board - Regulatory Division. The material published consists of original writings by staff members, as well as reproduction from other sources, which are clearly identified.

The Editorial Committee is comprised of:

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Mr. Gusland McCook

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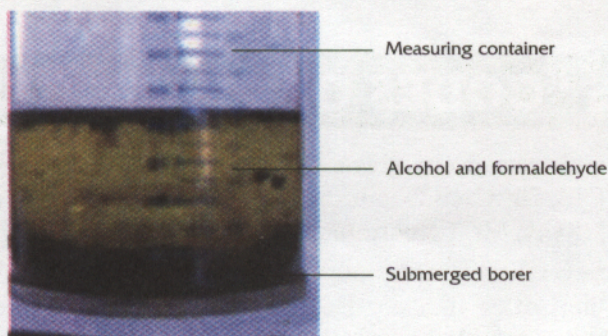
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The Coffee Berry Borer Trap established in a plantation (cont'd.)

THE TRAP AND BIODIVERSITY

The El Salvador Experience

The borer represents more than 93 % of the total number of insects captured by the trap (including ant colonies). Most of the other insects fall in the trap by accident. Seventy eight percent of the other insects captured have no specific relation with the tested attractants. Some are attracted by the presence of water in the trap. *Chrysopa sp.*, commonly known as lacewing, was the only beneficial species captured. The adult of the *Chrysopa sp* does not feed on insects, however, the larvae is very voracious. The number of lacewing captured however, was very small.



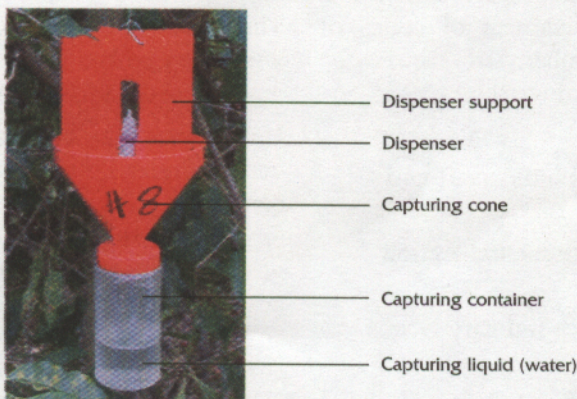
Measuring container with alcohol and formaldehyde as preservatives for the borers which are submerged in the liquid

THE JAMAICAN PERSPECTIVE

Jamaica has been the third country to which the trap has been introduced, outside of El Salvador. The others are Guatemala and Honduras. Evaluation of the trap is in progress with a view to expanding its use to other coffee growing countries.

Three locations at different altitude ranges are being used for validation of the traps. These are Hazelymph in St. James, (17 traps), Baron Hall in St. Ann, (51 traps), and UCC Craighton Estate in St. Andrew (31 traps). The main things being evaluated are the number of borers captured; the reduction of infestation on the new crop; the period of greatest migration of the borer and the competing strength of the attractant with the coffee fruit, (mostly as it relates to the Blue Mountain conditions).

The result of the evaluation is being eagerly awaited by all



stakeholders in the coffee industry and already much interest has been generated, particularly among farmers and extension personnel, since its short introduction. If the evaluation proves to be cost effective the local coffee industry can look forward to another control measure to reduce the effect of this important pest.

Written by: *Gusland McCook*
Research Officer

BLUE MOUNTAIN COFFEE COOPERATIVE SOCIETY LTD. (BMCC)

The Blue Mountain Coffee Cooperative Society Limited (BMCC) is a Coffee Grower's Cooperative. It commenced operations in 1949 and was registered under the Cooperative Society Act on November 18, 1961. It is owned by its members who are coffee growers.

BMCC or "Moy Hall Coffee Factory" as it is sometimes called is located at Moy Hall in Cedar Valley, St. Thomas. BMCC owns 814 acres of land and a processing plant.

The main objectives of BMCC are to:

- i. Purchase cherry coffee from its members at competitive prices.
- ii. Provide assistance to its members to improve their coffee production.
- iii. Achieve the best return for its members.

To date, most of BMCC's coffee is exported to the Japanese Market, with a small percentage being exported to markets in the United Kingdom and the United States of America. BMCC has done well over the years, except for the period (1996-1997) when the Co-op ran into operational and financial problems. As a result, it incurred liabilities which it was subsequently not able to service and experienced difficulties in

paying farmers their final payment.

The Co-op was restructured in 1998 with a new Board of Management appointed in April 98, and a new Secretary Manager. This was after a public enquiry which was held in 1997.

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BLUE MOUNTAIN COFFEE COOPERATIVE SOCIETY LTD. (BMCC) (cont'd.)

With the restart of operation in 1998, the Co-op members credited over 8,000 boxes of coffee to provide a jump start for the cooperative. In the second year, the Coop purchased twice the amount, and paid the highest price in the industry. For the year 2000-2001, it is estimated that they will collect over 25,000 boxes of coffee.

Currently, BMCC has upgraded its factory machinery, resuscitated its farms with \$12.0M injection from Eastern Jamaica Agricultural Support Project (EJASP) in the form of a grant, and will be expanding the Barbeque space. The Cooperative will also be assisting its farmers by implementing a Revolving Fertilizer Scheme, a Berry Borer Control Programme and a Coffee Rehabilitation Project to support greater production and better quality.

In a nutshell "BMCC has returned and will be a force to reckon with, while farmers are regaining confidence in their organization."

Oneil Blake
Manager

COFFEE BOARD INITIATES "CODES OF PRACTICE"

The Coffee Industry Board is taking the lead in seeking to encourage the use of Codes of Practice in Jamaica to improve the environmental performance of the industry.

Since the beginning of the year 2001, five (5) workshops have been conducted throughout the island with the objective to create ideas towards the development of codes of practice acceptable to all sectors of the Coffee Industry.

The aim is to stimulate and promote environmental awareness on issues relating to sustainable coffee production. These workshops provided an opportunity for interaction among stakeholders and facilitated shared experiences that has resulted in a consensus to foster the establishment of codes of practice in which some members of the coffee fraternity had a chance to contribute their ideas.

Presentations were made by:

- ❖ Mr. Timon Waugh (Coffee Industry Board - Regulatory Division)
- ❖ Mr. Stewart Forbes (Environmental Action Programme- ENACT)
- ❖ Mr. Louis Campbell (Coffee Industry Board - Regulatory Division)
- ❖ Mr. Gusland McCook (Coffee Industry Board - Regulatory Division)
- ❖ Mrs. Eleanor Jones (Environmental Solutions)

Alford Williams chaired the proceedings and

addresses were given by the Director General of CIB, Dr. Cecil Goodridge and the Senior Director of NRCA, Mr. Lemoire Jones.

Several presenters outlined the absolute necessity for the Coffee Industry Board to direct efforts towards the establishment and implementation of environmental management systems. During the deliberations, the major areas of emphasis included solid and liquid waste management, energy recycling, licensing and monitoring. All major activities such as nursery, farming, pulping, finishing and value added were examined and assessed in terms of opportunity, financial and technical considerations.

The general consensus was that all stakeholders within the coffee industry should agree to adhere to any established 'codes of practice.'

Hazards are man's greatest fear but can be prevented or minimized, if the predisposing factors are controlled. Therefore, the Coffee Industry Board urges the support of coffee growers, approved groups, extension officers, scientists, technical advisors, industry managers, industry directors, coffee co-operatives, coffee traders, roasters of coffee, processors of coffee and allied agencies to join in the effort to protect our people, animals and the eco-system. Ultimately this will protect the integrity and fame of Jamaican coffee worldwide.

Written by Simone Watson.



Kind words are like Coffee: Enjoyable and Healthful
-Anonymous-

THE POTENTIAL FOR DRIP IRRIGATION IN COFFEE CULTIVATION

*Translated by Gusland McCook; summarized by Gail Nelson
from an article by Uri Goldstein, presented at the
PROMECAFE Symposium, October 2000*

This technology utilizes the controlled application of localized water and involves watering or irrigating a determined area. The design of the system is specific to the soil type.

The increasing popularity of drip irrigation is due to:

1. Economy of water and energy
2. Reduction in applied treatment
3. Substantial increase in productivity

The system supplies:

1. Water
2. Nutrients
3. Agricultural chemicals (fertilizers for example)

And it introduces flexibility into farm management, because one can simultaneously:

1. Harvest
2. Prune
3. Do other crop care operations

The main advantages of drip irrigation are:

❖ Efficiency in the use of water

- decrease in water loss from evaporation
- no loss due to percolation and surface run-off
- weeds between the rows are not irrigated therefore competition from them is reduced

❖ Uniform development of roots

- 80- 95% of roots develop in a localized area called the HUMID ZONE
- the humid zone is the irrigated space and is rich in water, air and nutrients

❖ Greater Fertilizer and Manure efficiency

- fertilizer is applied through the irrigation system hence the term FERTI-IRRIGATION
- efficiency of nutrient uptake is increased by application of fertilizer to the Humid Zone

❖ Greater Production

- Fruits are better developed and are more uniform
- Especially since Ferti-irrigation is a fundamental part of drip irrigation

❖ Parasite control

- weeds and grasses are not watered therefore present less problems to control.
- insect and fungal growth is limited because the

aerial part of the plant is not watered.

❖ Flexibility

- pruning, harvesting and application of pesticides can be done simultaneously
- adaptable to different soil types and topographies

❖ Labour Economy

- This fixed system affords greater economy of labour compared to conventional irrigation systems

Drip irrigation is also useful for regions with a high annual rainfall, since these regions do not always have an ideal rainfall distribution.

All these factors combine to provide the following benefit to the coffee industry:

1. Greater vegetative growth
2. Intense and uniform flowering
3. Good bean development
4. Bold beans which are of good quality
5. Decrease in bi-ennial production
6. Increase in overall production
7. More controlled farm operations

A tremendous potential exists for the use of Drip Irrigation in the Coffee Industry. It is becoming increasingly popular as a substitute for traditional irrigation systems in other agro-sectors and in other countries. In Brazil, one of the world's largest producers of coffee, the coffee industry has been using drip irrigation since the 1990's.

This form of irrigation uses a fixed system to deliver minimal water to localized areas in the field. These areas link together to form a HUMID ZONE. Eighty to ninety five percent of tree roots develop in this area. Water is applied directly to the soil at the root region in small intensities, at high frequency and in such a manner that the humidity of the soil in the root region is maintained. Root development in the humid zone is more uniform than in conventional irrigation systems.

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THE POTENTIAL FOR DRIP IRRIGATION IN COFFEE CULTIVATION (cont'd)

A fundamental part of drip irrigation is FERTIRRIGATION, which is the application of fertilizer with the irrigation water. Since it is already known where the roots are located we can fertilize them directly. FERTIRRIGATION increases the efficiency of nutrient uptake and utilization, because at all times the tree roots are in a medium, rich in water, air and minerals. This is the ideal condition for cultivating productive plants. To this end, it has been observed that ferti-irrigated fields produce more vegetative growth and larger beans of good quality. And because nutrient stress has been relieved, bi-ennial production is suppressed thus promoting increased productivity year after year.

Fertilizer loss from leaching, insufficient transfer to and inefficient uptake by the roots are minimized. Dependence on machines for cultivation is also minimized and application costs for both material and labour are reduced.

Unlike other forms of irrigation, such as sprinklers, water is not lost via surface run-off, evaporation, transpiration and percolation. Drip irrigation is also easily adaptable to different soil types and terrain.

This system not only saves the farmer money, but it gives him or her more control over their farm operations. Because drip irrigation does not wet the entire band between rows, other cultural activities such as pruning, harvesting and application of defensive agents can take place before, after, and even simultaneously. Weeds and grass do not flourish because they are not watered. Insect and fungal growth is also checked because the aerial part of the tree is not watered.

The control offered by the drip irrigation system is arguably the most powerful technological tool available to the coffee industry, for an effective increase in productivity at minimal capital cost.

A CHRONOLOGY OF COFFEE EVENTS

January

- On 24th the CIB in conjunction with ENACT staged a workshop at the Farmers Training Centre, Twickenham Park, St. Catherine. The workshop was entitled "Improving Environmental Performance of the Coffee Industry" and attracted forty-four (44) participants drawn from a wide cross section of the industry.
- The management of CIB held two meetings with the All Island Jamaica Coffee Growers Association of Jamaica.
- Regional meetings were held with Coffee Co-operative representatives to discuss plans for the Coffee Berry Borer / Leaf Rust Control Programme and Fertilizer Revolving Credit Scheme. Senior Officers from Regulatory and Commercial Divisions were in attendance.

February

- CARDI conducted a Regional workshop at the Kendal Camp & Conference Centre. The workshop highlighted aspects of rearing, releasing and monitoring of parasitoids for control of the Coffee Berry Borer (*Hypothenemus hampei*).
- Dr. Bernard Dufour, consultant entomologist associated with PROMECAFE, PROCAFE (El Salvador) and CIRAD a French research agency was guest of the CIB during February 26- March 3. Dr. Dufour along with CIB Officers introduced Traps as a means of control against the Coffee Berry Borer and established pilot projects at three

locations across the island. These are being evaluated for their effectiveness as part of the IPM package, and arrangements are being made to import additional traps.

March

- Sixty (60) coffee farmers from St. Thomas participated in a educational tour involving the Scientific Research Council, and two large coffee farms in St. Andrew.

April

- Interim payment for coffee supplied to the Commercial Division of the CIB was made during April 2001.
- PROMECAFE experts in Biological Control visited Jamaica during the period April 23-27, 2001. Their activities included:
 - ♦ Visits to Parasitoid Release Sites
 - ♦ Visits to Rural Rearing Facilities
 - ♦ Meeting at the C.I.B.
 - ♦ Technical Advisory Committee meeting
 - ♦ Meeting with Project Review Team
 - ♦ Laboratory work and Training of CARDI & CIB staff.
 - ♦ Exporters of Jamaican Coffee participated in the Annual SCAA Conference and show held in Miami USA during April 19-23, 2001.

THE STATE OF THE SPECIALTY COFFEE INDUSTRY

From my perspective, specialty coffee is a point where as an industry group we need to dig in our heels and define what we're all about. The blush is off the bloom and now the real work must begin. Thirty years ago marked the beginning of the specialty coffee movement, but it has been the past 10 years during which the industry has experienced the greatest growth. In those 10 years, the specialty coffee industry enjoyed a honeymoon with consumers who embraced quality coffee. It is a period which constituted a longer- than-expected run. However, right now the specialty coffee industry is, in effect, old news. And that represents a challenge for us all.

As a group, the specialty industry deserves credit for making one of the most positive changes in the coffee industry – that of increasing consumer awareness of specialty coffee. But the industry also needs to recognize that our job isn't finished. We must review the significant changes that occurred with the past 10 years which represent major challenges to us as an industry group and redouble our efforts to continue to overcome those challenges and build the specialty coffee industry.

THE SUPPLY SIDE DILEMMA

The first change deals with the supply side of the coffee industry. In general, coffee prices are down. This change in coffee prices, which has continued over the last 10 years, does not bode well for producers. The producers are basically at a crisis point, especially those who are actually producing high-quality coffees since they are more labour intensive and therefore, cost more to produce. They are questioning whether it is a worthwhile agricultural venture to continue producing coffee, or if there is a better, more profitable use for their land. Because producers are considering the possibility of such a change, coffee prices represent a real threat to the industry. How the industry responds in the next five years will set the course of the industry for the next 100.

THE DEMAND DILEMMA

That leads us to the demand side problem. In the consumer's mind, specialty coffee has been redefined as a beverage. Whereas, specialty coffee was originally defined as a "fancy" bean, today "specialty" refers more often to a coffee beverage. Originally a bean industry, the nature of coffee retail stores has changed. And if the industry continues down this path, then in the long run, it will be difficult to

distinguish the beverage business from a food service business. On the retail side, we need to rethink how we want to define ourselves with regards to consumer image.

My hope is that the industry, especially on the producer side, re-charts its course to mirror that of the wine industry model and refocus on the bean, much like the wine industry focuses on the quality of a special grape.

We must recapture our roots. The underlying issue has to do with value versus "specialty" or "uniqueness." There are many coffees that are good values, but not all are special. The specialty industry was created on the basis of the unique character of the bean. We need to focus on recapturing that original movement. To accomplish this may be more difficult today than it was 30 years ago when the specialty movement truly started because "specialty" coffees that are truly unique are getting increasingly difficult to find.

This is what the industry should strive to evolve into in the long run: going back to being coffee merchants not beverage merchants. In order to help accomplish these goals, the association has created two plans currently in the initial stages of implementation that outline the changes industry members need to bring about on the supply side in order to really create the coffees we need to feed the market. At the same time, these efforts must also reward the producers who are making an extra effort to produce truly special coffees. The problem is difficult, but not insurmountable. Together, we can take the next step in the development of the specialty coffee industry.

By Ted Lingle,

Executive Director,

Specialty Coffee Association of America

Source: The Gourmet Retailer,

November 2000

COMEDY TIME

A fat, fat, fat woman and a slim chick got into a heated argument in a bar yesterday.

Fat woman: "By the looks of you... there might have been a famine!"

Slim woman: "Yes, and by the looks of you... YOU might have caused it!!"



SOIL & PLANT NUTRIENT MANAGEMENT

Soil and Plant Sampling Guideline

By Louis Campbell

#1

The Coffee industry Board in its quest to provide a better service to the farmers will be up grading its laboratory capabilities to the point where chemical analytical determinations can be done in-house. The results from these tests will enable farmers to know the nutrient status of his or her soil or plant and serve as a basis for sound advise in the area of soil fertility management. This is particularly important for the management of marginal soils, the controlling of soil reaction, soil nutrient status and the selection of suitable lands for the growing of coffee.

There are many approaches to soil fertility evaluation. The most popular ones are based on soil testing, plant analysis, missing element technique, simple fertilizer trials and combinations of these.

Soil fertility evaluation has to do principally with plant nutrient element and soil condition. It is concerned with levels of availability and nutrient balance in the soil and the appropriate methods of assessing these factors.

Soil fertility improvement involves the addition of fertilizers, limestone and other soil amendments to the soil in such quantity, at such time in the season and in such a manner that they provide the optimum nutritional environment for the coffee plant.

SOIL SAMPLE COLLECTION

Soil samples should be taken from sites which represent the general area to be sampled. If there is uniformity within the plot then it should be treated as one unit. However, if the plot is of an uneven orientation then, separate samples should be taken as there may be marked differences in the use, aspect, slope, topography, soil type and elevation of these sites.

BASIC SAMPLING RULES

1. Locate sampling sites, then bore holes away from roadways, farm trails, cow sheds, old farm yard manure storage area and any other man made structure that may have a direct influence on the physio-chemical properties of the soil.
2. Take samples at the appropriate depths.
 - a) for land inspection/suitability purposes, take samples at two depths. i.e: 0 - 12" (0 - 200) cm. and 12-24" (200-400) cm.
 - b) For areas already established in coffee, take sample (s) at a depth of 0-12" (0 - 200) cm. within the root zone.
 - c) Four to eight sub samples can be taken and then composited into one representative sample from a discrete area.
 - d) Try to remove stones, fresh vegetable materials and other surface extraneous materials from the sample.
3. The number of samples taken from a field is dependent on the extent of variability in the soil types present, the topography and the size of the field. Samples should be taken in a zig-zag or random manner in order to cover the entire area.

On a 2 hectare farm, for example, which has uniform soil type and slope, a maximum of 3 composite samples can be taken. If there is great variability however, it will be necessary to increase the number of samples to ensure that every section of the field is represented. A minimum of 1kg. of soil should be extracted from the composite sample properly labeled and secured for testing.

4. Individual sampling areas should be identified by soil type, plot number, conspicuous land marks etc.
5. A soil survey map can be a helpful guide in identifying soil types.

MATERIALS NEEDED

- 1 Sample bags and/or plastic bucket
- 2 Information sheet/note pad
- 3 Soil map
- 4 Soil Auger, spade, fork and cutlass.

METHOD OF SAMPLING

Hold the Auger vertically and turn it in a clock- wise (cork screw) manner while exerting pressure downwards. Continue to turn and press down until the required depth is reached.

In order to remove auger from the soil, continue turning the Auger in the same direction while lifting it, then remove the core of soil from the auger and place it in a plastic bucket or an identifiable sample bag.

N.B. Remove stones, roots and excessive organic material from the sample. If soil auger is not available use a fork to dig holes of suitable depth and width from which samples can be extracted.

Soil sample containers should be kept in a cool dry location prior to delivery to the laboratory for analyses.

WHEN TO SAMPLE

Ideally the best time to sample your coffee farm would be after harvest or immediately after fruit-set

Do not take sample shortly after lime or fertilizer applications have been made or when the soil is excessively wet.

HOW OFTEN TO SAMPLE

Soil sampling and analytical procedures should be done at 3-4 year intervals.

See next issue for

GUIDELINE #2!!