

THE UNIVERSITY OF THE WEST INDIES  
DEPARTMENT OF AGRICULTURAL EXTENSION

Report of

THE TWELFTH LEEWARD ISLANDS'  
AGRICULTURAL EXTENSION IN-SERVICE TRAINING COURSE

MONTSERRAT

(May 6 to 16, 1980)

Report of  
THE TWELFTH ANNUAL LEeward ISLANDS'  
AGRICULTURAL EXTENSION IN-SERVICE TRAINING COURSE\*

*Montserrat: May 6th - 16th, 1980.*

## INTRODUCTION

The Twelfth Annual Leeward Islands' Agricultural Extension In-Service Training Course was held at the University Centre, Plymouth, Montserrat from Tuesday 6th to Friday 16th May, 1980. The Course was organized by the Department of Agricultural Extension, U.W.I., and was co-sponsored by the Government of Montserrat. Course coordinators were Dr. T.H. Henderson and Mr. Joseph Seepersad of the Department of Agricultural Extension.

## PARTICIPANTS

The majority of the participants came from the host country, Montserrat; they consisted of extension workers, CARDATS and CARDI personnel, representatives from the Cooperative and Community Development Departments, Peace Corps volunteers and farmers. Other countries represented at the Course were, Antigua (2 participants) and St. Kitts (2 participants). Altogether, 25 persons attended one or more of the business sessions held during the nine days of the Course.

## COURSE OBJECTIVES

The Course was designed primarily to handle the needs of agricultural extension workers in the participating countries. The objectives were:

- (a) to assist participants to identify some key concepts in communication which would be useful to them.
- (b) to increase their understanding of how these concepts apply in their own situation.

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\*Prepared by Joseph Seepersad, Lecturer, Department of Agricultural Extension, U.W.I., St. Augustine, Trinidad and Tobago.

Course, and to the Resident-Tutor of the Extra-Mural Department, for allowing the use of the University Centre for conducting the Sessions.

He then discussed the objectives of the Course pointing out that the ultimate aim was to improve extension services through increasing the knowledge, skills and confidence of individual extension workers.

Mr. Seepersad also announced that Professor James Duncan, of the Department of Continuing and Vocational Education, University of Wisconsin, Madison, U.S.A., would be joining the Course during the final week. It was planned that Professor Duncan would assist in conducting the sessions in Agricultural Extension and also observe the conduct of the Course with a view to suggesting improvements.

(c) *Address by the Minister of Agriculture, Montserrat, Honourable F. Margetson.*

The Minister of Agriculture, the Honourable F. Margetson, in his address, emphasized, first of all, that agriculture is a very intense relationship between man and the land. *"This involves a somewhat delicate relationship between man and his environment,"* he stated. Furthermore, in developing agriculture it is important *"to maintain the very delicate relationship which we have inherited and which we attempt to adapt to our advantage and unfortunately sometimes destroy. In the 1980's it will become increasingly obvious that we are speaking about not just development and exploitation, but survival."* He expressed the view that agriculture is going to be the key to survival and that within agriculture, the role of the extension worker is going to be dominant.

On another note, Mr. Margetson stated that land and people were their only resources and that they should now focus on developing people, since a lot of time has been spent on the development of land. In developing people however, they should not concentrate all their efforts in working with progressive farmers but should also remember those people, who because of their station in life, do not respond readily to the processes of extension and development. He emphasized that *"unless we can change these people, our programmes of extension will be absolutely useless. Your efforts must be continually extended to those areas traditionally regarded as difficult"*.

Finally, Mr. Margetson reminded the gathering that their countries possessed limited resources and that they must therefore be concerned with evaluating the

impact of extension programmes. "We must examine ourselves and our programmes and evaluate our own success by assessing the progress of development," he concluded.

## COURSE PROGRAMME

Appendix 11 lists in detail the programme followed during the Course:

As in former years; the subject-matter areas that were selected, were developed from a consideration of the following:

- (a) comments of the participants in the previous year's Course as to what areas should be covered in the following year.
- (b) requests from the Chief Agricultural Officers of the various participating Countries.
- (c) areas of need identified by the Agricultural Extension Department, U.W.I.

## CONDUCT OF COURSE SESSIONS

- (1) *Agricultural extension* - Topics covered included - General principles of communication, communication problems of extension workers in the Leeward Islands, and methods of communication (farm visit, method and result demonstration, and mass media). Extensive use was made of the open and small group discussion methods in conducting these sessions. A role-playing session was also held in which groups were required to make presentations portraying the farm visit, the method demonstration, and a radio programme.

Several handouts were also distributed. (See Appendix IV for a list of these and other handouts distributed during the Course).

Lecturers were Professor James Duncan of the University of Wisconsin Madison, U.S.A. and Mr. Joseph Seepersad, Lecturer, Department of Agricultural Extension, U.W.I., Trinidad. We were also fortunate to obtain the services of Mr. Julian Rogers, Programme Director (English), Antilles Radio, Montserrat, to conduct the session on, "The Role of the Mass Media in Extension Work".

- (2)(a) *Food production (b) Multiple cropping* - Both of these topics were handled by Dr. T.U. Ferguson of the Department of Crop Science, U.W.I., Trinidad. The morning sessions were devoted primarily to lecture/discussions on the major food crops (breadfruit, corn, sweet potato, yams, pigeon peas); a short discussion was also held on the principles and practices of multiple cropping. During the afternoon, slides, illustrating various aspects of the topics covered in the previous sessions were presented and discussed.
- (3) *Human nutrition* - The sessions in Human Nutrition were conducted by Dr. Doris Bramble, Nutritionist, Ministry of Health Montserrat, and Dr. Curtis McIntosh Food Economist attached to the Caribbean Food and Nutrition Institute (CFNI) St. Augustine, Trinidad. Dr. Bramble dealt with some basic concepts and principles of human nutrition; Dr. McIntosh handled various aspects of food production and marketing in relation to human nutrition. Handouts were also distributed.
- (4)(a) *Soil and water conservation (b) Irrigation* - Both of these topics were handled by Mr. Greig Luke an Agricultural Engineer who is employed with the Commonwealth Fund for Technical Cooperation (CFTC) as an adviser to the Government of Montserrat. Mr. Luke dealt with causes of soil erosion, types of water erosion and control measures. With regard to irrigation, various factors that should be considered in selecting and using irrigation systems were discussed. The small group discussion method was employed in conducting these sessions; a small demonstration, illustrating various principles of trickle irrigation, was also mounted. Handouts were distributed.
- (5) *Livestock production* - Sessions on animal husbandry were conducted by Mr. Lionel James of the Caribbean Development Bank, Barbados. The focus was mainly on the care of young animals - calves, lambs and piglets. Handouts were distributed.
- (6) *Reproduction in livestock* - Dr. H. Hollatz, Veterinarian attached to the Ministry of Agriculture, Montserrat, dealt mainly with diseases and other problems associated with infertility in livestock in the Leeward Islands.

- (7) *Forage legume and grass production* - These sessions were conducted by Dr. John Keoghan, who is attached to the CARDI Forage Legume Project, Antigua. Dr. Keoghan dealt first of all with the advantages and disadvantages of the various forage legumes and grasses that can be used in the region. He then discussed the applicability of some systems of livestock production (e.g. intensive pastures, protein-energy banks) to the situation in the Leeward Islands. The lectures were supported by a number of photographs and handouts.
- (8) *Vegetable production* - The first day's sessions on vegetable production were devoted to lecture/discussions on general principles of vegetable production.
- Mr. F. Michael of the Ministry of Agriculture dealt, first of all, with the question of how to ensure the use of good quality seed in producing vegetables; he then discussed several important aspects of nursery preparation and transplanting.
- Mr. J. Kumar, Agronomist, attached to CARDATS, Montserrat dealt with the use of fertilizers in vegetable production and then later discussed the marketing of crop produce.
- The session on weed control in vegetables was conducted by Mr. N. Meade of the Ministry of Agriculture. The focus was on chemical weed control and recommendations for the various crops to be covered in the course, were discussed.
- Messrs Brown and Ryan of the Ministry of Agriculture dealt with crop protection, particularly the area of insect and disease control.
- On the second day, Messrs. Kumar and Michael dealt with the agronomy of individual crops - beans, cucumber, cabbage, carrot, hot pepper, onion, peanut and tomato.
- Several handouts were distributed during the sessions.
- (9) *Field trips* - Two field trips were conducted during the Course - the first one dealt with various aspects of crop production, while the second one focused on areas relating to the production of livestock.

What field trip - the following morning...

First field trip - The following areas were visited:

Development and Food Marketing Corporation (D.F.M.C.) - Mrs R. Forester of D.F.M.C. discussed the operation of the agency and conducted the group on a tour of the facilities existing on the compound.

Grove Agricultural Station - Various types of crop protection equipment and hand seeders were displayed and their operation was discussed by Mr. F. Michael of the Ministry of Agriculture. The operation and use of meteorological instruments on the station were discussed by Mr. J. Ponteen, also of the Ministry of Agriculture.

Leeward Islands Plants Ltd. - This company is concerned primarily with the production of ornamental house plants for export to the United Kingdom. The group was taken on a tour of the compound by Mr. C. Fergus of the Company. Mr. G. Luke (C.F.T.C.), who accompanied the group, also discussed systems of trickle irrigation that were being used.

Lee's Dam - Here the group was able to look at a recently built unlined clay dam and also to discuss the various steps followed in its construction with Mr. G. Luke.

Lee's Estate - Discussion here centred around land use in steeply sloping areas. Various practices employed in soil conservation were observed. Messrs. F. Michael and G. Luke were the discussion leaders for this part of the trip.

Second field trip - The group was accompanied by Dr. J. Koeghan and Mr. L. James. Areas visited were as follows:

Grove Agricultural Station - The main point of interest here was the cultivation of forage grasses - Sorghum, Sudan and Elephant grass.

Brodericks-Livestock Station - This is a government-run station concerned with the production of cattle as well as small livestock - sheep, goats and rabbits.

Dannenberg Farm - This is a privately-run large livestock farm; the major enterprise here is the production of beef cattle. The group was able to observe pasture legumes as well as forage grasses on the

holding. Mr. C. Taylor, Manager, conducted the tour of the holding.

## EVALUATION SESSION

At the end of the Course, participants were requested to complete Course Evaluation Questionnaires. Twelve participants submitted completed questionnaires. The responses have been analysed and the results are discussed below.

### Results of the Course Evaluation

#### (a) *Course Objectives*

Table 1 illustrates that all the Course objectives can be considered to have been satisfactorily achieved. The results of the specific items on the questionnaire related to objectives are as follows:-

- (1) Most of the respondents (11 or 92%) felt that, as a result of taking part in the Course, they were able to identify some key concepts in *communication* which would be useful to them to the extent of "very much" and/or "quite a bit".
- (2) Most of the respondents (11 or 92%) felt that the Course increased their understanding of how these concepts ( in *communication* ) apply in their own situation to the extent of "very much" and/or "quite a bit".
- (3) Three-quarters of the respondents (9 or 75%) felt that the Course increased their understanding of extension techniques to the extent of "verymuch" and/or "quite a bit".
- (4) The majority of the respondents felt that the Course increased their working knowledge in areas related to *crop production* (9 or 75%), *livestock production* (8 or 67%), and *human nutrition* (10 or 83%) to the extent of "very much" and/or "quite a bit".
- (5) The majority of the respondents indicated that the Course assisted them in securing answers to specific questions they had about *extension work* (10 or 83%), *crop production* (8 or 72%), *livestock production* (8 or 72%) and *human nutrition* (10 or 83%) to the extent of "very much" and/or "quite a bit".
- (6) Three-quarters of the respondents (9 or 75%) felt that the Course increased their confidence in their ability to do extension work to the extent of "very much" and/or "quite a bit".

- (7) Most of the participants (10 or 83%) indicated that the Course helped them to gain ideas for things they might do in their own country to the extent of "very much" and/or "quite a bit".

Table 1 : Opinions regarding the extent to which the Course objectives were achieved.

Objectives	N.R.P.		M.N.R.		V.V.M.		C.Q.B.		S.S.		L.L.		N.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(1) to help participants identify some key concepts in communication which will be useful to them.	12		1	8	8	67	3	25	0	0	0	0	0	0
(2) to increase participants' understanding of how these concepts apply in their own situation.	12		1	8	4	33	7	58	0	0	0	0	0	0
(3) to increase participants' understanding of extension techniques.	12		1	8	7	58	2	17	2	17	0	0	0	0
(4) to increase participants' working knowledge in areas related to														
(i) crop production	12		1	9	5	45	4	36	1	9	0	0	0	0
(ii) livestock production.			1	8	5	42	3	25	1	8	2	17	0	0
(iii) Human nutrition.	12		1	8	5	42	5	42	1	8	0	0	0	0

Table 1 (continued).

Objectives	N.R.P.		N.R.		V.M.		Q.B.		S.		L.		N.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(5) to help participants to secure answers to specific questions they had about -														
(i) Extension work	12	100	2	17	6	50	4	33	0	0	0	0	0	0
(ii) Crop production.	11	100	1	9	4	36	4	36	1	9	1	9	0	0
(iii) livestock production.	11	100	1	9	4	36	4	36	1	9	1	9	0	0
(iv) human nutrition.	12	100	1	8	4	38	6	50	1	8	0	0	0	0
(6) to increase participants' confidence in their ability to do extension work.	12	100	1	8	4	33	5	42	2	17	0	0	0	0
(7) to help participants to gain ideas for things they might do in their own country.	12	100	1	8	5	42	5	42	1	8	0	0	0	0

- N.R.P. = No. of respondents present at sessions.
- V.M. = Very Much
- Q.B. = Quite a bit.
- S. = Somewhat.
- L. = A little.
- N. = Not at all.
- N.R. = No response.

(b) Relationship of Course content to the past experiences of the participants

Participants were asked to select from a list of statements on the questionnaire, the one which best expressed how they felt regarding how the course content related to their past experiences.

the content of the Course-related to their past experiences. Slightly more than half the number of respondents (7 or 64%) indicated that they had most of the material before, but the course helped them to recall it and see how it applied in their present position. Two persons (17%) indicated that the Course helped them review some things but many of the ideas were new to them or they saw them in a broader context or sharper focus. Another two respondents (17%) indicated that much of the content was new to them but the ideas seemed important. One person did not respond to this item on the Questionnaire.

(c) Opportunities for discussing mutual problems and ideas with other participants.

Most of the respondents (10 or 83%) agreed that the Course provided sufficient opportunity for them to discuss mutual problems and ideas with other participants; two persons (17%) did not feel that sufficient opportunities existed for this kind of experience.

(d) Duration of the Course

Two-thirds of the participants (8 or 67%) felt that the duration of the Course was adequate; the remainder felt that it was too short.

(e) Adequacy of the amount of time devoted to Course topics

Table 11 illustrates that for most of the topics (20 out of 22), the majority of the respondents indicated that within the context of the two-week Course, the time devoted to them was "about right". The exceptions were (i) the sessions on *Small livestock production* where 4 or 40% replied that the time was "about right" and 6 or 60% indicated "too little time" - and (ii) *reproduction and diseases in livestock* where half the number of respondents (5 or 50%) indicated that the time was "about right" and the other half replied that the time was not enough.

Only in the case of two sessions did any one reply that the time was too much. These were the sessions on *Food crop production* (1 or 8% indicated "too much time") and *field trips* (2 or 17% indicated "too much time").



Course topics	N.R.P.			T.M.T.		A.R.		T.L.T.		N.R.	
	No.	No.	%	No.	%	No.	%	No.	%	No.	%
(r) Fodder conservation	12	0	0	8	67	4	33	0	0		
(s) Small Livestock production	10	0	0	4	40	6	60	0	0		
(t) Reproduction and diseases in livestock	10	0	0	5	50	5	50	0	0		
(u) Agricultural Extension	11	0	0	8	73	3	27	0	0		
(v) Field trip	12	2	17	8	67	2	17	0	0		

N.R.P. = No. respondents present at sessions.  
 T.M.T. = Too much time.  
 A.R. = About right.  
 T.L.T. = Too little time.  
 N.R. = No response.

(f) Work Schedule

Most of the respondents (10 or 83%) found the work schedule "just right"; the remaining two persons (17%) found it "too tight".

(g) Adequacy of handouts

Nearly everyone (11 or 92%) felt that the amount of handouts was adequate; one person indicated the amount was too little.

(h) Most useful sessions

The sessions found to be most useful with the highest frequency were as follows:

Human nutrition	-	9	responses.
Vegetable production	-	7	"
Agricultural Extension	-	6	"
Soil and water Conservation	-	5	"
Pasture Management	-	5	"

(i) Least useful sessions

No clear patterns emerged from the responses to this item to indicate which sessions were regarded as being the least useful.

(j) Recommended topics for next year's Course:

Topics recommended for inclusion in next year's Course with the highest frequency were as follows:

Soil and water conservation	-	5
Agricultural extension	-	4
Multiple cropping	-	3
Vegetable production	-	3
Human nutrition	-	3

(k) Course arrangements

Two-thirds of the participants (8 or 67%) indicated that the accommodation and administrative arrangements were satisfactory, although there was "some need for improvement." One person indicated that the arrangements were "quite satisfactory" with "very little need for improvement"; another indicated that it was not satisfactory, with "great need for improvement." Two persons (17%) did not respond to this item on the questionnaire.

Improvements suggested were:

Adequate transportation should be provided for the participants.	-	3 responses
Refreshments should be supplied on time.	-	2 "
Efforts should be made to have more people attend the course.	-	1 "
Course should be better publicised.	-	1 "

(l) Opinions as to whether these courses should be continued or stopped.

One person did not respond to this item on the questionnaire; the remainder (11 or 92%) felt these Courses should be continued. Six participants (50%) gave reasons why they felt it should be continued; they generally felt that the Course provided an opportunity for extension workers to obtain up-to-date agricultural information.

(m) General suggestions for improving the Course.

General suggestions for improving the Course were as follows:

(1) More visual aids should be used during teaching Sessions	-	3
(2) More field demonstrations should be held	-	3
(3) The duration of the Course should be increased	-	3

**CLOSING CEREMONY**

The Course was formally brought to an end with a brief closing ceremony, which was attended by the Honourable F. Margetson, Minister of Agriculture, Montserrat. Mr. Seepersad explained that usually, at this time, Certificates of Attendance, would have been presented to participants, who had attended a minimum of 75 percent of the total number of Course Sessions. Because of industrial unrest at the University, however, these could not have been prepared;

the Certificates would therefore be sent to deserving participants later in the year. The names of participants who will receive Certificates are listed in Appendix 1. Professor J. Duncan, Mr. N. Meade and representatives of the participants from St. Kitts, Antigua and Montserrat also delivered brief closing remarks.

### ACKNOWLEDGEMENTS

The Department of Agricultural Extension, U.W.I., wishes to express its sincere appreciation for the invaluable assistance given to the staging of this year's Course by the following organisations and individuals:

The Government of Montserrat for hosting the Course, providing daily refreshments, and local transport for participants and lecturers.

Barclay's Bank International Ltd, for their substantial financial grant to defray expenses incurred in running the Course.

CARDATS, CARDI, CDB, CFNI, CFTC, the Ministry of Agriculture, Montserrat, Department of Crop Science (U.W.I.), and Radio Antilles for providing lecturers to conduct the various Course Sessions.

The U.W.I. Extra-Mural Department, particularly the Resident-Tutor Mr. Fergus for providing the facilities at the University Centre for conducting the Course.

Special thanks to Mr. N. Meade, Director of Agriculture, and his support staff for assisting with local arrangements and generally looking after the welfare of visiting participants and lecturers.

Thanks also to Mr. J. Kumar (CARDATS) and Mr. J. Adams (CARDI) who also assisted with providing local transport for participants and lecturers.

APPENDIX 1

*LIST OF PARTICIPANTS WHO RECEIVED  
CERTIFICATES OF ATTENDANCE*

ANTIGUA

Caleb Benjamin  
Dandridge Joseph

ST. KITTS

Henry Mills  
St. Clair Williams

MONTSERRAT

Thomas Farrel  
Franklyn Michael  
Robert Murrain  
John Ponteen

APPENDIX 11

P R O G R A M M E

Date	Subject-matter	Lecturer
<i>TUESDAY 6th May</i>		
9.00-10.00 a.m.	Opening Ceremony	
10.00-10.15 a.m.	B R E A K	
10.15-11.45 a.m.	General principles of Vegetable Production	J. Kumar & F. Michael
11.45 a.m.-1.15 p.m.	L U N C H	
1.15-2.45 p.m.	Weed Control in Vegetables	N. Meade
2.45-3.00 p.m.	B R E A K	
3.00-4.30 p.m.	Crop Protection in Vegetables	C. Brown & W. Ryan
<i>WEDNESDAY 7th May</i>		
8.30-10.00 a.m.	Production of Onion & Peanut	F. Michael
10.00-10.15 a.m.	B R E A K	
10.15-11.45 a.m.	Production of Tomato & Bean	J. Kumar
11.45 a.m.-1.15 p.m.	L U N C H	
1.15-2.45 p.m.	Production of Cucumber & Hot pepper.	F. Michael
2.45-3.00 p.m.	B R E A K	
3.00-4.30 p.m.	Production of Carrot & Cabbage	
<i>THURSDAY 8th May</i>		
8.30-10.00 a.m.	Soil and Water Conservation	G. Luke
10.00-10.15 a.m.	B R E A K	
10.15-11.45 a.m.	Irrigation	G. Luke

Date	Subject-matter	Lecturer
<i>THURSDAY (con't)</i>		
11.45 a.m.-1.15 p.m.	L U N C H	
1.15 p.m.-4.30 p.m.	Field Trip	
<i>FRIDAY 9th May</i>		
8.30-10.00 a.m.	Human Nutrition	D. Bramble
10.00-10.15 a.m.	B R E A K	
10.15-11.45 a.m.	Human Nutrition	C. McIntosh
11.45 a.m.-1.15 p.m.	L U N C H	
1.15-2.45 p.m.	Human Nutrition	C. McIntosh
2.45-3.00 p.m.	B R E A K	
3.00-4.30 p.m.	Human Nutrition	C. McIntosh
<i>MONDAY 12th May</i>		
8.30-10.00 a.m.	Food crop Pro- duction	T.U. Ferguson
10.00-10.15 a.m.	B R E A K	
10.15-11.45 a.m.	Multiple Cropping	T.U. Ferguson
11.45 a.m.-1.15 p.m.	L U N C H	
1.15-2.45 p.m.	Food Crop Pro- duction & Multiple Cropping	T.U. Ferguson
2.45-3.00 p.m.	B R E A K	
3.00-4.30 p.m.	Food Crop Pro- duction & Multiple Cropping	T.U. Ferguson
<i>TUESDAY 13th May</i>		
8.30-10.00 a.m.	Pasture Management	J. Keoghan
10.00-10.15 a.m.	B R E A K	
10.15-11.45 a.m.	Fodder Conservation	J. Keoghan

Date	Subject-matter	Lecturer
<i>TUESDAY (con't)</i>		
11.45 a.m.-1.15 p.m.	L U N C H	
1.15-2.45 p.m.	Livestock Pro- duction	L. James
2.45-3.00 p.m.	B R E A K	
3.00-4.30 p.m.	Livestock Pro- duction	L. James
<i>WEDNESDAY 14th May</i>		
8.30-10.00 a.m.	Reproduction in livestock	H. Hollatz
10.00-10.15 a.m.	B R E A K	
10.15-11.45 a.m.	Livestock Diseases	H. Hollatz
11.45 a.m.-1.15 p.m.	L U N C H	
1.15-4.30 p.m.	Field Trip	
<i>THURSDAY 15th May</i>		
8.30-10.00 a.m.	The Communication Process and Agric- ultural Extension Work	J. Duncan & J. Seepersad
10.00-10.15 a.m.	B R E A K	
10.15-11.45 a.m.	Communication Problems of Extension Workers in the Leeward Islands	J. Duncan & J. Seepersad
11.45 a.m.-1.15 p.m.	L U N C H	
1.15- 2.45 p.m.	Individual Methods of Communication - Farm and Office Visit	J. Duncan & J. Seepersad
2.45-3.00 p.m.	B R E A K	
3.00-4.30 p.m.	Result and Method Demonstrations	J. Duncan & J. Seepersad

Date	Subject-matter	Lecturer
<i>FRIDAY 16th May</i>		
8.30-10.00 a.m.	Mass Media in Extension Work	J. Rogersad
10.00-10.15 a.m.	B R E A K	
10.15-11.45 a.m.	Preparation of Assignments on Extension for Group Presentations	
11.45 a.m.-1.15. p.m.	L U N C H	
1.15-2.45 p.m.	Group Presentations of Assigned Projects	J. Duncan & J. Seepersad
2.45-3.00 p.m.	B R E A K	
3.00-4.30 p.m.	Course Evaluation & Closing Ceremony	

APPENDIX 111

*LIST OF COURSE LECTURERS*

Dr. D. Bramble	Nutritionist, Ministry of Health, MONTISERRAT.
Mr. C. Brown	Agricultural Officer, Ministry of Agriculture, MONTISERRAT.
Professor J. Duncan	Department of Continuing and Vocational Education, University of Wisconsin, Madison, U.S.A.
Dr. T.U. Ferguson	Lecturer, Department of Crop Science, U.W.I., TRINIDAD .
Dr. H. Hollatz	Veterinary Officer, Ministry of Agriculture, MONTISERRAT.
Mr. L. James	Project Officer, Caribbean Development Bank, BARBADOS.
Dr. J. Keoghan	Project Coordinator, CARDI Forage Legume and Pasture Utilization Project, ANTIGUA.
Mr. J. Kumar	Agronomist, CARDATS, MONTISERRAT.
Mr. G. Luke	CFTC Agricultural Engineer attached to the Government of MONTISERRAT.
Dr. C. McIntosh	Food Economist, Caribbean Food & Nutrition Institute, c/o U.W.I., TRINIDAD
Mr. N. Meade	Director of Agriculture, Ministry of Agriculture, MONTISERRAT

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*LIST OF COURSE LECTURERS (con't)*

Mr. F. Michael

Agricultural Officer,  
Ministry of Agriculture,  
MONTSERRAT.

Mr. J. Rogers

Programme Director  
(English),  
Radio Antilles,  
MONTSERRAT.

Mr. W. Ryan

Agricultural Officer,  
Ministry of Agriculture,  
MONTSERRAT.

Mr. J. Seepersad

Lecturer,  
Department of Agric-  
ultural Extension,  
U.W.I., TRINIDAD.

APPENDIX IV

LIST OF HANDOUTS

1.	General Principles of Vegetable Production	-	J. Kumar
2.	Signs of Pests and Diseases	-	"
3.	Notes on Seeds	-	F. Michael
4.	Seed boxes	-	"
5.	Notes on Nursery Preparation	-	"
6.	Notes on Seeding - Transplanting	-	"
7.	Notes on Cucumber Production	-	"
8.	Notes on Hot Pepper Production	-	"
9.	Production of Onions	-	"
10.	Production of Peanuts	-	"
11.	Soil Conservation	-	G. Luke
12.	Care of Young Animals	-	L. James
13.	"Intensive Calf Production" Extract of a paper by P. Osuji, presented at the Twelfth Biennial International Con- vention, Caribbean Vet- erinary Association, TRINIDAD, 1980.	-	
	This paper was distributed and discussed at the Course by	-	L. James
14.	Aspects of Food Production and Marketing in relation to Human Nutrition	-	C. McIntosh
15.	Forage Grasses for Caribbean Livestock Systems	-	J. Keoghan
16.	"Wild Tamarind" ( <i>Leucaena leucocephala</i> )	-	"
17.	"Winer" ( <i>Teramnus labialis</i> ) - A Promising Productive Forage Legume for Caribbean Livestock Systems	-	"

18. "Blue Pea" (*Clitoria ternatea*) - A Vigorous Forage/Grain Legume for the Caribbean - J.M. Keoghan
19. "Caribbean Hamata" (Mother Segel) - The Key Forage Legume for Pasture Development on Droughty Shallow Soils in the Caribbean. - "
20. "Perennial Soybean" (*Glycine wightii*) A Persistent Productive Forage Legume for Drier Parts of the Caribbean - "
21. "Mexican Macro" (*Macrophilium atropurpureum*) - A Drought Tolerant Forage Legume for Drier Parts of the Caribbean - "
22. How to Produce your own "Guinea Grass" (*Panicum maximum*) Seed Successfully - "
23. "Communication in Agricultural Development"- An article by Dennis W. Pett, published in Extension, FAO, Rome, 1970. This paper was distributed and discussed at the Course by - J. Seepersad
24. "Farm Visits" A paper by Garth Southwell, distributed and discussed at the Course by - "
25. Method Demonstrations - "
26. Result Demonstrations - "



# UNIVERSITY of the WEST INDIES

FACULTY OF AGRICULTURE

*This is to Certify that*

*has attended the **TWELFTH LEEWARD ISLANDS' AGRICULTURAL  
EXTENSION IN-SERVICE TRAINING COURSE** sponsored by the  
Department of Agricultural Extension, University of the  
West Indies and held in MONTERRAT FROM MAY 6th - 16th, 1980.*

.....  
*Dean, Faculty of Agriculture*

.....  
*Director, Agricultural Extension Department*

(See Back)

COURSE CONTENT

1. Agricultural Extension
2. Human Nutrition
3. Food Crop Production
4. Vegetable Production
  - a. Bean
  - b. Cabbage
  - c. Carrot
  - d. Hot Pepper
  - e. Onion
  - f. Peanut
5. Soil and Water Conservation
6. Irrigation
7. Principles and Practices of Multiple Cropping
8. Animal Husbandry
9. Reproduction in Livestock
10. Forage Legume and Grass