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INTRODUCTION

The present study was undertaken with the primary objective of providing information useful to the staff of commodity, support, and training and communication sections of CIAT in improvement and further development of their training and followup support activities. In addition to the gathering of information and its analysis and reporting, systems for continued monitoring of the departing and former trainees were evolved. For example, departing trainees will continue to be interviewed. Records of the whereabouts and present activities of former trainees were also updated to the extent possible.

Emphasis has been on determining where former trainees are, what they are doing, how they view their training, the degree they are utilizing their training, the degree to which they have had or sought continued contact with CIAT and their thoughts and suggestions of all phases of CIAT's training and followup activities. Major focus of the overall study was given to the individually assigned interns rather than the group training programs as they are the largest body of trainees, include the great majority of those who have been out for a year or more, represent the widest variety of training experience received, and have had the least previous study of any sort.

The report is organized around major topics, i.e., recruitment, selection, planning, training, followup and utilization. It has three basic components; trainees who have been back in their countries and institutions for a year or more, departing trainees and senior staff who have been direct supervisors of trainees.

The training section prefers to call all trainees of its two major types of activity interns and within this to have two classes, Production Specialists and Research Interns. Both of these have semantic problems as the former are trained as a group rather than interned as individuals with a scientist or section, and the latter, in a number of cases, do not consider themselves researchers or their training as research or preparation for research.*

* One question in the study asked trainees to briefly describe their training. These definitions were then classified as to whether they

There are also some terms being used such as postgraduate interns which most take to mean the research interns but is also used to mean the production specialists as well in the broad interpretation mentioned before. Hoping to avoid confusion, this report refers to postgraduate production specialists (abbr., PPS) and research/production interns (abbr., RPI).

CIAT is in an early and dynamic phase of development in the evolution of its training programs and philosophy. The amount of experimentation and change in training over a short period has been substantial. Even programs that appear the same on paper have, over time, varied substantially in many ways, including objectives, making comparisons difficult. Physical working and living facilities have also undergone similar rapid transformation. This is to say nothing of the complications of the number of commodity programs involved, the present search within each of these to determine their priorities, and the first efforts at extensive outreach activity getting underway.

All of these factors are reflected in effects upon the complex training picture at CIAT. They also dictate that this study, to be useful, must be as heavily oriented to the descriptive and qualitative as to the quantitative. The thoughtful insights of the individual trainee or staff member are often those which may be of most use in looking to the future development of training activities. Therefore, the tables and findings treated by group are also liberally accompanied by individual observations on each topic.

For its short period of training activity CIAT has had a sizable number of trainees. Not only the numbers but the variety of training undertaken has been ambitious in the midst of establishing an organization, staff and training and research facilities. The following charts summarize this training activity.

* (continued) described training in production, research or a combination of the two. Of the R/P interns who had been out for a year or more 22 percent said they had been in production training, 35 percent said research and 44 percent the combination. With the recently departing trainees, these rates were 25 percent, 50 percent and 25 percent, respectively.

Table 1. SUMMARY OF CIAT POSTGRADUATE TRAINING

as of November 1, 1973

<u>Total</u>	<u>Now at CIAT</u>	
		I. Group Training
		A. Production Specialist Training
41	15	1. Livestock Production, 12 months
44	20	2. Crop Production, 12 months
6	6	3. Seed Production and Certification, 6 months
<u>91</u>	<u>41</u>	
		B. Special Courses
22	--	Brazilian rice workers, 1 month
150	20	II. Research/Production Interns
19	12	III. Research Scholars
14	9	IV. Research Fellows
31	4	V. Special Trainees (those that fit no other category)
<u>327</u>	<u>86</u>	
		VI. Outreach Training
		A. Formal
		B. Informal
		VII. Informal or Unofficial Trainees

As indicated, CIAT's training activities include five principal categories: Research/Production Interns (RPI), Postgraduate Production Specialists (PPS), Research Scholars (usually working on master's degrees), Research Fellows (usually working on their Ph.D.), and Special Trainees (those who do not fit in the other groupings). In addition there are such special programs as the 1-month rice production training provided 22 Brazilian rice workers and very short-term projects as the 1-week vegetable crop production training for 23 Panamanian rural community health workers in 1972 which was considered more of a workshop than a training program. Individuals also are sometimes attached to departments for short-term unstructured training; for example, two Ecuadorian librarians spent several weeks at the CIAT library in early 1973.

The category listed as "unofficial trainees" refers to those who receive training at CIAT but are not officially registered as CIAT trainees. These include university students doing thesis work or projects on their own initiative or sometimes on suggestion of their professors and a few that have just come for experience. A number have spent 4-6 weeks working as laboratory and field assistants to learn techniques.

Such unofficial trainees comprise a larger group than is generally recognized although no figures are available. Several staff indicate they have had five or more of them; one said that of the ten trainees he had had, only two were official.

These trainees are not funded by CIAT although collectively they probably represent a fair cost to the center in terms of staff time, materials and use of equipment. Some have apparently more than repaid these costs in assistance to CIAT projects.

There are a variety of staff opinions on this type of trainee. These range from feelings that they are misused as an inexpensive labor force to a conviction that they have been a channel which has identified a number of the best motivated individuals with whom CIAT has worked. Some staff scientists feel when funds are short significant training can be given a number of trainees in this manner at very low cost. More often the consideration is that the training relationship just evolves so casually and is so short it is never made official.

Some of these trainees have later become official trainees and employees. They have been various nationalities but are usually in a Colombian institution working on a degree. CIAT staff has acted both formally and informally as thesis advisors for some. The unofficial element is being reduced as official forms that cover these needs are established.

This study has concerned itself primarily with the first two categories described, i.e., Research/Production Interns (RPI) and Postgraduate Production Specialists (PPS).

The PRODUCTION SPECIALISTS PROGRAM consists of two principal sections, a Livestock Production Specialists Training Program (LPSTP) and a Crop Production Specialists Training Program (CPSTP). As originally conceived these courses aimed at taking the graduate who is technically trained and providing a "field practice" polish to that training and a broadening of skills to produce "a capable generalist working directly with the producer...[with abilities to introduce improved] production packages and conduct practical research and field trials." This is basically true today though with growing emphasis on his involvement in introducing and promoting such practical experience orientation to training programs in his own country. "Training the trainer" has become more of an objective with later groups, though securing assurance of the opportunity for such a function has been limited.

The following graphs help illustrate the chronology and composition of CIAT's Production Specialist Training Programs.

PRODUCTION SPECIALIST TRAINING PROGRAMS

Table 2

	1970	1971	1972	1973	1974		
1st LPSTP	Jan	Dec	Jan	Dec	Jan	12 mo.	10 Trainees
1st CPSTP						12 mo.	10 "
2nd CPSTP						12 mo.	14 "
2nd LPSTP						12 mo.	16 "
3rd CPSTP						12 mo.	20 "
3rd LPSTP						12 mo.	15 "
SEED CERTIFIC.						6 mo.	6 "
							91 Trainees

Table 3

1st LPSTP	Colombia 10							10 Trainees
1st CPSTP	Colombia 10							10 "
2nd CPSTP	Colombia 4	Ecuador 3	DR 2	Pn 2	CR 2	Hn 1		14 "
2nd LPSTP	Colombia 6	Ec 2	DR 2	Hn 1	Bl 1	Par 2	Mx 2	16 "
3rd CPSTP	Colombia 3	Ecuador 7	Dominican Republic 8				Mx 1 El S 1	20 "
3rd LPSTP	Colombia 3	Ec 1	Par. 3	DR 3	Bl 2	El S 1	Pru 2	15 "
Seed Certific.	Ecuador 6							6 "
								91 Trainees

Abbreviations: DR=Dominican Republic, Pn=Panama, CR=Costa Rica, Hn=Honduras, Pru=Peru,
Ec=Ecuador, Par=Paraguay, Mx=Mexico, El S=El Salvador, Bl=Bolivia

LPSTP: Livestock Production Specialist Training Program
(Programa Adiestramiento Especialistas en Producción Pecuaria)

CPSTP: Crop Production Specialist Training Program
(Programa Adiestramiento Especialistas en Producción Cultivos)

The RESEARCH/PRODUCTION INTERNS represent the largest category of CIAT trainees and the great majority of those former trainees who have been out for a year or more. This program is aimed at providing "direct, on-the-job agricultural research experience for young staff members of national institutions." As noted, it has also trained a number primarily in production and frequently persons who were not affiliated with national institutions.

It is not the intent of the R/P Intern Program that these trainees necessarily become trainers, but some determination of the extent to which they have carried out training or other activity with multiplication effects must be an important consideration in any review of their post-training activities.

This program is by nature flexible, relatively unstructured, and characterized by its variety mainly due to the trainees being assigned individually to senior CIAT scientists. Consequently activities also largely reflect the attitudes, interest and actions of the man to whom the trainee is principally attached.

The length of training varies greatly in this program--2 to 18 months, with a mean of 7.8 months. The following graph will help to illustrate its nature and extent.

Table 4. RESEARCH/PRODUCTION INTERN PROGRAM (As of Nov. 1, 1973)

	Colombia	Ec	CR	Brz	Mx	Bl	Pru	Jm	Hn	Vn	Ar	DR	Gm	Par	Can	USA	TOTAL
BEEF	d																1
FOOD LEGUMES	d c																2
MAIZE	ddddddd bbbbbbb	d (e)															16
PASTURE/FORAGES	cccc dddd	cc (e) e	c		e										e		15
RICE	b	aaa b ccdd	a dd	bbbb dddee			b	d	c ee	c	b	bb	(e)	e			35
SWINE	dd b	add (ee)			d	d (e)	(e)						(e)				13
CASSAVA	dddddd b						(d)										9
CROP PRODUCTION	bbb																3
AG. ECONOMICS	bb c (ee) (d)																7
AG. ENGINEERING	bb cccc d (e)	e															10
ANIMAL HEALTH	b d					(e)											3
ENTOMOLOGY	c ddd	d				d											6
PLANT PATHOLOGY	bbb c dd	aaa e					b										11
SEED CERTIFIC.		a															1
SOC. SCIENCES	d																1
SOILS	bb ddd				e								(ee)				8
WEED CONTROL	d e	d		d			e										5
BEANS		e						(e)					e			(e)	4
TOTAL COMPLETED	72	25	4	10	3	2	2	2	3	1	1	2	1	1	1		130
TOTAL CONTINUING	4	4		2		2	3						4			1	20

Key: Circled letters indicate continuing, i.e., not completed

a= 1968-69 9 trainees

b= 1970 30 "

c= 1971 21 "

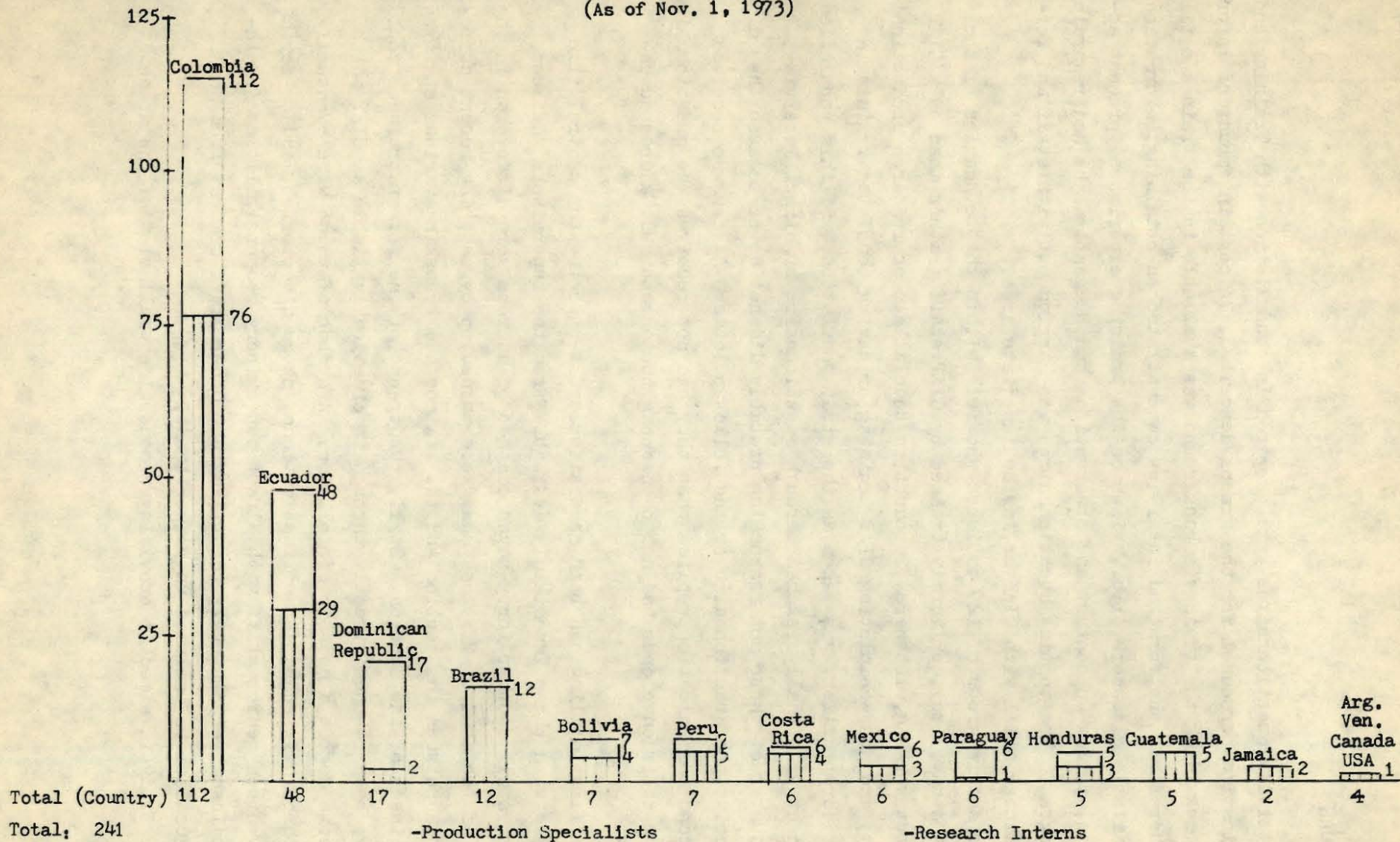
d= 1972 58 "

e= 1973 32 "

Abbreviations: Ec=Ecuador, CR=Costa Rica, Brz=Brazil, /150/
 Mx=Mexico, Bl=Bolivia, Pru=Peru, Jm=Jamaica,
 Hn=Honduras, Vn=Venezuela, Ar=Argentina,
 DR=Dominican Republic, Gm=Guatemala,
 Par=Paraguay, Can=Canada, USA=United States
 of America

Table 5.

SUMMARY BY COUNTRY

PRODUCTION SPECIALISTS AND RESEARCH/PRODUCTION INTERNS
(As of Nov. 1, 1973)

as of Nov. 1, 1973
of which 61 are currently
in training.

PROCEDURE

Interview questionnaires were prepared in consultation with Training and Communication personnel for the groups described. A certain amount of information regarding the trainee's background was available in the trainee's file and, therefore, the form and interview concentrated on obtaining information not available elsewhere, i.e., views on the training experience, present activities, follow-up contact and observations and suggestions he had regarding the program. Pre-testing questionnaires was carried out with staff and former trainees still with CIAT or in the immediate area.

The entire group of 129 trainees who fell within the boundaries of the present study, i.e., primarily trained by CIAT staff (rather than on a CIAT grant but working elsewhere), production specialists or research production interns, and just completing CIAT training or having completed training a year or more earlier, was taken as the study population. Of this population 74 percent was finally reached through questionnaire or direct interview.

A number of those not responding probably did not do so because they did not receive the questionnaire or the followup letter. A few who received the second communication replied that they had not received the questionnaire although their envelopes had not been among those returned "addressee unknown."

The first mailing had been made after cross-checking the central file addresses with those immediately available from the supervisors' offices. However, still another forty-seven changes of address were discovered in the course of the study. Of these some were turned up by checking recent correspondence between the section and the trainee and by asking various staff and trainees of the section. Still, twenty-one of the former trainees could not have been reached directly through information available at CIAT which is to some degree a measure of followup. A number of these were eventually found through friends, former institutions, phone directories, and so forth.

Seventeen senior staff with direct supervisory responsibilities for intern trainees were interviewed at length. Other staff comment from more casual contact is included where pertinent.

The study is aimed at providing a general overall view of the areas

delineated. More detailed studies of some aspects might be considered for the future with more sophisticated analysis. It is doubtful that such procedures would be possible or even very useful at this stage. In describing the findings, therefore, the statistical aspects of the analysis are simple.

The extent of utilization of training is expressed in part by a utilization index formed by cross-tabulating questions on the use of CIAT training on-the-job and in the training of others. This index provides a means of establishing high, middle and low utilizer groups. A satisfaction index was similarly constructed. Where appropriate, findings are related to either, both or a combined index (designated U/S) of these two.

The latter is most commonly used to express the percentage of replies regarding a factor given by individuals within the high U/S or low U/S groups. These groups are defined as the top 25 percent and the bottom 25 percent of the combined index.

In general the former trainees, while questioning certain aspects, gave quite positive ratings to both their satisfaction and utilization. Thirteen percent gave the most positive possible rating on all questions used for either index. None gave the lowest possible rating to all and only one percent fell into the low category on both indices. There were, in fact, only seven percent who fell into either low category. In designating the bottom 25 percent as the low category for the combined index (U/S), therefore, a number were included whose replies placed them in medium categories in the two component indices.

OUTLINE OF FINDINGS

This study was undertaken to provide a view of the nature of the major CIAT training activities and areas of consensus and disagreement among staff and trainees in relation to these.

Although the following information emphasizes a number of problems in training that have arisen in these initial years, many have been remedied and others are being acted upon or considered. Some remain that need more attention than they have received.

The majority of former trainees commenting on the study indicated appreciation that CIAT was consulting former trainees on its program. Several hoped that this meant CIAT was giving more attention to trainees in general and suggested they thought trainees had been seen as an element of too little importance in this institution.

Recruitment. Discussion centered on the twin questions of who and how to recruit. In these initial years recruitment of the majority of CIAT's trainees has been somewhat haphazard. From the comments of many staff it has also often been passive. That is, trainees were taken on as they or their institutions come into contact with CIAT. This is one reason for the overwhelming predominance of Colombians among early trainees. Also training structure and philosophy were frequently put together with persons present or on their way. Too few trainees were apparently recruited to participate in an already well thought out training program.

Recruitment of a number of the earliest intern trainees was primarily to meet needs for junior staff. Their actual training was often minimal

and not oriented to anticipate outside employment. This caused a few problems where this purpose of recruitment was not sufficiently clear and led later to complaints of inadequate training. Another problem arising from this early practice was the difficulty in discouraging assumptions by some later trainees that training at CIAT led automatically to employment at CIAT.

The earliest of what might be considered recruitment campaigns were notably ineffective. Early mailings to institutions for production specialist training produced a 5 percent response and few nominees for training.

Improved recruitment response seems primarily related to greater involvement of staff with institutions in the region, training for explicit employment, and the increasing number of CIAT alumni.

From an overall point of view the most common point of contact between CIAT and the potential trainee was through government agencies where the candidates were employed (25 percent), followed by direct contact by CIAT staff and contact through college or institute where studying (about 20 percent each).

CIAT's increasing involvement with regional institutions was reflected in the fact that almost 90 percent of the recent trainees indicated they had applied for CIAT training through an institution, while only half of the former trainees did so.

About a third of the staff receiving new trainees this year indicated some were the first being sent by certain institutions. A number of staff increasingly view the taking of trainees as an important channel for establishing contact and cooperation with Latin American institutions. A few suggested CIAT should have some staff whose primary responsibilities would be to develop relations with institutions in the region, recruit, assist development of outreach potentialities, and followup on utilization of trainees. The rationale was that this takes much more time and continuing contact than hurried and brief visits by staff preoccupied with other responsibilities can give it.

Others thought the most effective recruitment results from extensive travel and the building of personal relationships with the leadership of institutions in the area by the staff of the section concerned. According to this view there is little assistance that other CIAT staff could provide

in this regard.

There were conflicting opinions as well regarding what assistance the Training and Communications (T&C) section might provide to the recruitment process. Some staff thought T&C should take more responsibility for identifying likely institutions and other places from which the appropriate program section could seek trainees and develop contacts. According to this view program sections would have the primary role for final selection but T&C could be more active in providing information about the needs of the institutions, suggesting individual candidates and perhaps performing initial screening. It would also play a greater role in informing institutions, administrators and scientists in the region about CIAT, its programs and training opportunities.

The importance to the recruitment process of getting better information on CIAT out to the field was reflected in many comments. Some staff thought CIAT should be sending out circulars and encouraging institutions to post them so there would be more self-nominations by potential trainees as well as by their administrators. This suggestion was mirrored by one departing trainee who felt CIAT staff only talked to administrators who they felt often knew little about the students, their real interests, or capabilities beyond a very few they knew well.

There was also evidence that this information should be out sooner to allow the applicant more lead time for preparation and inquiry, and that the information needed to be more specific about the strong practical orientation of CIAT training.

The growing importance of information passed by alumni was evident when nearly a fourth of departing trainees reported first learning of the program through former CIAT trainees compared to only 12 percent of those who completed training a year or more earlier. Although few staff mentioned former trainees as an important recruiting medium, there was some recognition that CIAT should be making better use of this resource. These observers tended to be those who maintain relatively close contact with their former trainees. In addition a few credited recruitment from institutions not previously contacted to the spreading word about CIAT programs via former trainees.

In considering who should be recruited a number of staff said they

preferred trainees who were already employed. Several reasons were cited. One was that the short-term nature of training opportunities offered by CIAT are less attractive than permanent positions offered elsewhere to the best candidates. Therefore if CIAT training is undertaken as in-service training or with employment assured on completion, CIAT's position is more competitive. In addition, if training is a part of their job, then there is less of an opportunity cost factor in relation to other pre-employment schooling such as continuation for a masters degree.

The study showed that 56 percent of all the trainees were employed at the time they entered training. Among departing trainees this figure was 74 percent, a substantial jump over the 38 percent reported by former trainees.

On the other hand there was a decline in the percentage of trainees who reported they had been recent graduates when beginning CIAT training. Thirty-nine percent of the former trainees said they had just completed university degrees, but only 21 percent of the departing group indicated this. Of the overall population, about 9 percent considered themselves unemployed (not just recent graduates) in the period just before coming to CIAT.

Another staff concern about recruitment was that it should assume geographic priorities and concentrate training efforts where deficiencies and problems exist and that numbers of relevant specialists available in a country should be considered. The geographic concentration was also seen necessary in order to make the small numbers CIAT can train have any appreciable impact.

In the opinion of several staff, the two main problems in recruitment are the dearth of candidates for intern scholarships and doctoral and post-doctoral fellowships and the lack of funds to support their work. They feel those individuals we now have are too much the good luck of chance encounter and that T&C should do more to help find and inform institutions in Latin America, the U.S., Europe and elsewhere that might send persons with an interest in the lowland tropics to CIAT for study and research.

It is obvious that between sections there is considerable difference in the training load that can be handled. The nature of the material involved, the equipment and physical facilities and the staff availability and interest are all widely varying factors. Though perhaps irrelevant to others

it is interesting to note the estimate of one senior staff member that each scientist in his section should be able to handle one person working under him on his doctorate, one post-doctoral researcher and perhaps two R/P Interns.

A more active recruitment from private business was also encouraged. Such trainees are seen as probably having more of an impact at the farm level than a number of the persons presently being selected for training. It is also believed that it is particularly relevant with training funds short and some sections interested in taking in more trainees to give more attention to trainees from private businesses who would pay their expenses.

There was also opinion that recruitment continues to suffer because CIAT offers no masters degree program either directly or in association with various universities. There is substantial opposition to the former concept and support for the latter.

Finally, a major question in recruitment has been policy regarding married trainees. The following summarizes some of the opinions of trainees in this matter:

Table 6.	Importance to married trainees of being able to bring wife in deciding to come (30 respondents)			Consider it necessary that spouse accompany trainee (61 respondents)		
	Much	Moderate	Little	Yes	No	If extended period (6 mos +)
Research/Prod. Interns	50%	28%	22%	68%	11%	20%
Production Specialists	42%	17%	44%	65%	29%	6%
Total Trainees	47%	23%	30%	67%	16%	16%

In related comments--though there was occasional mention that the stipends in general were too low--more serious according to a number of single and married trainees was the inequitable and inadequate stipend for couples.

In general, most supervisors of interns feel they have been relatively fortunate in the quality of candidates that have been recruited and feel

it is improving with developing contacts and programs with institutions in other parts of Latin America. Many of the early difficulties still with CIAT in recruitment of numbers of qualified candidates should be alleviated as outreach activities as well as returning trainees establish closer relations for the institution with others throughout the region.

Selection. Objectives being the basis on which selection criteria are based, the rapid change in the nature and objective of the various programs has had a substantial change. In earlier years a prime objective of many staff was to fill junior staff slots. One commented that it was much easier to select them as the nature of the job and the needs involved were those of CIAT and, therefore, better known. The suggestion is that selection now too often tends to lack adequate knowledge of the slot to be filled (if there is one) or the needs, objectives and goals of the sending institution (if there is one).

Trainees repeatedly suggested CIAT should better understand the institutions before it strove to train for them. Some of the staff suggest selecting the institution is of prime importance, especially to utilization, that minimum involvement of the sending organizations in selection had often contributed where former trainees were utilized particularly well. One example suggested as ideal was an institution which recently created a committee including sub-directors and others to carefully select and nominate candidates. More important than the quality of the applicant they stress, is the opportunity he will have, the equipment and material backing he can expect, and the commitment to using him that exists within the institution.

The importance of sending institutions in selection of the research interns in CIAT has shifted notably. Twenty-seven percent of former interns thought their institutions had a primary role in their selection; 43 percent of the departing interns gave this rating. Twenty-four percent of the earlier trainees thought the institutions had no involvement in the process, while less than 2 percent of those departing felt this to be the case.

Of the 25 percent of the trainees who placed highest in both utilization and satisfaction indices (high U/S) only 15 percent thought their institutions had had no role in their selection. Of the group placing at the

lower end of both indices (low U/S) 44 percent thought their institutions had no role.

Relatively few trainees responded to a request for suggestions on improving selection. The largest single category of response (22 percent), however, related to more involvement of the sending institutions in the selection process.

Some staff give more importance to criteria such as leadership potential than to high technical qualifications. This reflects the belief that in many situations this quality will foster the greatest effect beyond the one person reached.

Geographical considerations are a criteria for many. Some note the need to accept persons from some areas with qualifications below what might be desired in order to complete and strengthen general effectiveness of a developing network of workers.

There is concern that training decisions are sometimes made only on the basis that a section has training capability and a qualified candidate happens to be available. The husbanding of CIAT's limited training capability is seen by some staff as too casually treated in light of the small numbers it can handle and the great responsibility this places on CIAT to plan, select and train for greatest effect. One senior staff member observed that his rationale for taking on a qualified trainee, but one he did not think would be of particular relevance to the country's problems or programs, was that he thought he was supposed to have trainees; the orientation was to CIAT policy rather than contribution.

Other staff feel trainees who do not fit well with the ongoing research focus of the program are accepted without proper consideration and do not receive training the trainee and his institution anticipates because of this. A few believe all initiative for training should come from the section and should be entered upon only when the research program evolves in such a way that a useful position for a trainee exists; they generally see training as primarily an adjunct to research rather than having possible viability on its own. The differences in viewpoint are obviously vast, suggesting a need for more discussion and clarification of CIAT's overall training philosophy.

In the training of groups there has been much concern expressed by trainees about the variety of backgrounds thrown together. Those commenting feel such wide selection criteria dilutes what might be learned and suggest selection for greater uniformity. This is beginning to resolve itself as the production specialist programs learn from the activities of former trainees and growing institutional relationships what levels they should focus upon for greatest impact and greater numbers of candidates become available from which to select.

Another concern of production specialists, in particular, was that too many were selected who had little or no interest in practical field work. One hazarded an estimate that this ran to 30 percent of his group and, with others, suggested that CIAT should not waste its time trying to implant such interest at this stage, that more effort should be given to determining this in selection. Several trainees among both production specialists and R/P interns think selection criteria which would include a requirement of at least a year's previous work experience in their specialty would give them a better knowledge of the problems of their country, enhance the benefit of their training and resolve some identification problems in the selection process as well.

Slightly more than half (56 percent) of the trainees studied said they had been employed in the period just before entering CIAT training. This was even higher (74 percent) for the departing trainees reflecting, perhaps, growing staff predilection for trainees with such experience. However, there were about equal percentages of the high and low utilization groups who fell into each of the two categories, employed or recent graduates.

The personal interview has been by far the most important medium for selection of trainees. In only a third of the cases did the trainees think recommendations played any significant role. Less than 4 percent indicated they were selected through other means such as correspondence or examination.

Some staff feel they can adequately judge a person on even very short acquaintance and have less confidence in recommendations or nominations by others. Most believe personal interviews should be by senior staff of the section concerned and in the trainee's own country and institution if possible.

A few believe interviews by any CIAT senior staff are of great use and would like to see all traveling senior staff assisting in this work. This would involve improved communication of travel plans among staff and probably a significant lengthening of the time spent in various countries.

A number of staff mentioned a lack of depth in interviews as a problem. Several indicated they would welcome some assistance in interview techniques.

Trainees have generally had little or no information about CIAT prior to the selection interview and virtually all felt what had been received on the nature of training was extremely vague. Some suggested this prevented adequate self-selection and led to appointment of persons unsuited to CIAT's-- and their own--objectives.

A few trainees complained of interviews by persons not in their field or of the interviewer speaking inadequate Spanish. It was also suggested that the trainee have the opportunity to respond on a variety of subjects, not just his technical speciality. One trainee thought his selection process particularly thorough and appropriate in that it combined an interview followed with a request for a brief written report on the nature of his work in the area.

At least a third of the staff interviewed thought recommendations of considerable importance though many had not yet given them much emphasis in selection. A few feel they are of little importance. It was suggested that, as in the recruiting visits, recommendations too often were given by high administrators rather than the candidates' immediate supervisors and others who might better know his work.

Those staff who gave much more weight to recommendations than interviews were generally those with close working relationships with the institutions which are sending them the bulk of their trainees. One interviewed only one of five trainees he has had because of such close working relationships and confidence in judgement of nominating institutions. He strongly believes a quick interview does not identify the best leader or researcher. Another suggests a reason for depending strongly on recommendations is that the individual is more likely to be used on return.

A combination of interview and recommendation would seem to be important. Most staff were increasingly requiring recommendations,

It is interesting that among the high U/S group, twice as many (28 percent) said they were selected through a combined interview-recommendation process as was reported for the population as a whole. Although half of the high U/S group were still selected through interview alone, this was reported for 70 percent of the sample as a whole.

A few former trainees called for a role for CIAT alumni in selection. A former research intern trainee now on the CIAT staff suggests junior staff who have training responsibilities participate in the process.

Pretraining Preparation by Trainees. Trainees appeared more concerned with the need for improvement in this area than staff. Trainees primarily would like to have been better informed and able to prepare more. This was sometimes accompanied by pleas for more lead time before coming to CIAT which was insinuated to have often been extremely short.

It was overwhelmingly apparent from the replies to several questions that the trainees considered the lack of information about the nature of their training program before arrival at CIAT an important deficiency. A few indicated that they would not have come if they had had a clear conception because the training was not appropriate for them; others that they would have prepared differently.

Of the kinds of additional information they would have liked, by far the largest single category was for more detailed training plans (46 percent of responses), followed by more on objectives and programs of CIAT (27 percent) and on CIAT's facilities and staff (12 percent).

Planning. This was an area considered one of the most important weaknesses in CIAT programs by both staff and trainees. At the same time, the tables in this section generally indicate improvement from former to departing trainees.

Table 7. Was There a Detailed Training Plan?

<u>Research Interns</u>	<u>Prior to Arrival</u>	<u>After Arrival</u>	<u>No Plan</u>
Former	18%	39%	43%
Departing	25	62	13

A much higher percentage of former trainees (43 percent) indicated they had no plan than did departing trainees (13 percent). For the same groups, the percentage who felt they had sufficiently detailed training plans prior to coming to CIAT rose from 18 to 25 percent. Of the high U/S only 17 percent reported having no training plan, while 61 percent of the low U/S indicated this deficiency.

Both trainees and staff mentioned that much time was wasted in trainees standing around and wandering about because the staff did not have sufficient time to outline their programs adequately. This was one of the primary criticisms by trainees of their training programs.

Most staff indicated concern in this area and are giving more attention to it. Several felt detailed plans were particularly critical for those with short training periods, while less structured ones were best for those at CIAT longer than six months when letting the trainee have time to develop some of his program on his own initiative was more practical.

Some indicated that the requiring of more extensive training statements had helped, but others said they had not usually prepared a well-worked up program for interns coming in but threw together at the last minute what they thought would suffice for the administration. "It is assumed something more substantial will be worked out on the trainee's arrival but it often doesn't happen or it is too late to maximize the benefit to him that proper preparation could have provided for the future. I hope to give them maximum freedom to work but within a better thought out framework of objectives."

"For all good intentions, without a plan there is a tendency to drag the trainee into whatever needs attention at the moment. Often this has little relation to his training program as originally conceived."

There was some feeling by supervisors that after reviewing the training statement T&C seems to forget the trainee. They suggest that progress on the plan be occasionally reviewed with both supervisor and trainee.

There is a great variety of opinion among staff on how detailed a plan should be. There is obviously no one answer as individual styles of training operation are different and one not necessarily more valid than one another. Also situations differ as to what can be learned about a trainee and his needs before his arrival.

Some staff who contend they have no training plan in effect have very extensive plans if not explicit and written down. They know exactly what they are going to do with the trainees during their time at CIAT and their trainees rarely complain of not being occupied in activities relevant to their training. A written training plan and clearly formed objectives are important but cannot replace a genuine commitment of the staff member to excellent training of any intern for whom he accepts responsibility.

Planning, unfortunately, seems a negative term to some who are ardent supporters of planning but will not admit it. Even individual staff are not always consistent in their attitude towards planning. For example, "Planning except in the very broadest terms is ridiculous. Most is learned by contact and research. To a large extent it is up to the trainee to pick up what he can." And later, "There is much need for assuring that the trainee has the opportunity, equipment and support to start right in on a project when he arrives rather than coming here and then determining his specific work. There is too much fiddling around and decision-making at too late a period in his program. They are entitled to at least the opportunity to get maximum use of their time here and this is the supervisor's responsibility."

In relation to being ready for the trainee when he arrives, one staff member observed that there could be more attention given to the timing of the trainees arrival to take best advantage of the stages of production, projects underway, equipment available, and even meetings planned. They add that, though seemingly obvious, the need for such timing often is overlooked.

Among both staff and trainees there was a belief that CIAT should make a greater effort at determining what the individual knows, what he needs, and what his institution wants and needs. Some staff have little sympathy for interns who cannot spell out exactly what they want. Others feel that even the best recent graduates need some experience in order to know what they want and need to be helped to find what they really want to get out of the work at CIAT; examples are given of some of the most successful trainees CIAT has produced.

As mentioned earlier there is substantial feeling that CIAT should, with rare exception, only accept trainees from institutions with which it has or is developing close relationships, especially those with which it has or

anticipates cooperative projects. Planning in this case is seen as much more easily determined and more effective.*

The involvement of the institutions in detailed training plans some see as offering an important opportunity for furthering the institution-building objectives of CIAT and assisting them to focus on what their needs really are within a national program.

"Involving them in formation of, and agreement on, the training plan is a good training experience for them as well since many do not know what a good training plan is."

While agreeing with the concept of increased training involvement through its relationships with other institutions in Latin America, several staff observed that waiting for these relationships to develop would have drastically reduced the numbers of persons who have been trained which would, in turn, have limited some of the best relationships that have evolved.

One supervisor observed that quite often it seemed there was not enough attention given by supervisors to the real desires and needs of the sending institutions. He believes that often a man is sent to be trained as a particular type of technician when what they really want is a person returned who is competent in a range of related areas. To determine the extent to which he needs very specialized or more generalized and perhaps production-oriented training, he sees as an important responsibility of the section.

In considering the trainee's view of the role of any institution in his country in the design of his training, only one trainee (a departing research intern) of all those surveyed indicated a belief that his institution had a substantial role in designing his training. The great majority of the trainees (78 percent) thought their institutions had virtually no role. This changed little over time, i.e., between former and departing trainees.

*This has certainly been the experience of CIMMYT as it has expanded its cooperative projects over the years. It has even become more true as it has begun assisting in establishment of staff patterns and identification of specific slots that need to be filled in national programs in various countries.

Ninety-three percent of the low U/S group felt they had not had a sufficient role in the preparation of their training plan. In fact, 65 percent felt they had no role at all.

Forty-one percent of the high U/S group saw their role as insufficient and only 17 percent thought they had no role. A similar dramatic difference between the low U/S and high U/S groups (6 percent and 56 percent, respectively) occurred among those trainees who saw themselves as having a moderate role in design of their training.

The level of satisfaction with the extent of their role improved dramatically with the more recent trainees, rising from 49 percent of the former trainees conceiving their role as sufficient to 92 percent holding this view among those departing.

Trainees also thought the training plan should be formally appraised by the supervisor and trainee a month or six weeks after training is begun in order to determine what changes in it or the training needed to be made to better meet the trainee's needs. This indicates some dissatisfaction with the concept that it can be just "worked out as we go along."

In considering whether, in the opinion of R/P interns, objectives in training plans were sufficiently specified, 61 percent of the former trainees indicated they thought they were. This figure rose to 91 percent among the departing interns.

Among those in the high U/S group, 87 percent indicated the objectives of their training had been sufficiently specified, only 13 percent of this group gave a negative response. The respective percentages for the low utilizer group were 73 percent and 27 percent.

The stipulation of more specific behavioral objectives was suggested by some staff as a means of providing some kind of measure that could be compared to performance during and at the end of training. They noted that standards or comparisons are nearly non-existent at this stage.

The great majority of trainees of all groups thought their training plans, to the extent they existed, had been followed. A similar percentage (84 percent) thought that any changes made in the training plan had been, on balance, for the better.

In comparing high U/S and low U/S groups, 42 percent of the former thought their institutions had at least a moderate planning input while only 19 percent of the low group thought so. Fifty-eight percent of the high U/S and 81 percent of the low U/S indicated a belief that their institutions played no role.

Several trainees commented on negative results from a lack of understanding between CIAT and the sending institution about the nature of training. They suggest trainees have sometimes been caught adversely in the middle of these misunderstandings. A couple indicate that confusion and lack of agreement on what type of training the institution was sending them for resulted in their arriving before CIAT had the facilities to provide the training, a good deal of time wasted and some bad feelings. There were repeated calls for greater contact between the agencies and more specificity in development of training agreements and plans.

Seeming at least partially, but not necessarily, contradictory to this concept of low sending institution involvement in training was the finding that over half of all trainees thought their training was related to specific projects underway or planned in their countries.

Of the 56 percent of trainees who have been back in the field for a year or more and said their training had been related to specific projects planned in their countries, 91 percent fell into the high level category of the utilization index. In comparison, of the 44 percent who indicated their training was not related to such specific activity, 61 percent were in the high utilization group.

Several trainees suggested training programs more closely fit the situation in the home country, including more consideration of the sophistication of the equipment and materials they would have to work with on return.

Table 9. Research/Production Interns' View of Extent of Their Own Participation in Design of Their Training Plan

	Participation				Thought Role Sufficient	
	Very Important	Moderate	Little	Not Consulted	Yes	No
Former	4%	38%	19%	40%	49%	51%
Departing	27	55	18	0	92	8

Of the high U/S index group, 89 percent indicated their plan had been followed, while the low group split evenly between those whose plan was followed and those for whom plans had been significantly changed. For those in these two groups indicating change, all those of the high group indicated changes for the better. The low group split about evenly between changes they considered were better and those they thought worse.

In overall satisfaction with their training program the percentages ran as follows;

Table 10. Satisfaction with Training Plan

	Very	Moderately	Not Satisfied
Former	47%	41%	12%
Departing	63	32	5
Total	51	32	10

All of the high U/S and none of the low U/S trainees fell within the very satisfied category. The low U/S group was split 59-41 percent between moderately satisfied and not satisfied categories.

Training Activities. The trainees in general give ORIENTATION more importance than do many staff. Eighty-five percent of the trainees rated this aspect of training very important.

In terms of areas covered, orientation about the staff and physical plant of CIAT rated the most unsatisfactory. Responding to a question on areas in which they would like more orientation, 94 percent indicated programs and objectives of CIAT, 91 percent suggested more on personnel of CIAT, 74 percent more on Colombia, and more on CIAT's physical plant was requested by 74 percent.

All but one trainee thought there should be some type of periodic orientation meeting at which all the trainees who had arrived during a period could be briefed. Although some staff are concerned this would be one more occasion to take them away from office, field and laboratory to give yet another exposition of their programs, such a general orientation would not necessarily require the presence of a staff member from the section. It could be handled by someone with responsibilities for such presentations for all sections who, of course, would need to frequently update the material in the presentation with the section. It would be important, however, that a few staff attend as much to demonstrate a CIAT-wide interest in the newly arrived young professionals as to field questions.

Several staff have indicated they wish to put together a slide presentation, perhaps with written or taped script, to describe their activities for visitors. They see this as not only saving their own time but providing visitors with more background and thus better utilization of the time he does spend conversing with the staff member.

This is discussed later in consideration of training and followup information services suggested by trainees. It is relevant to mention here, however, as parts of such prepared presentations would be very useful for trainee orientation. Perhaps T&C should be providing financial and staff assistance in the preparation of such presentations; several staff have indicated an interest in such cooperation.

Nearly a third of the trainees thought their orientation to CIAT's physical plant was poor at best. One staff member noted that a colleague had once taken a number of program secretaries on a bus tour of CIAT and this

had been greatly appreciated. A similar and more extensive trip might be an integral part of the orientation meeting for new trainees. This should help alleviate the feeling of isolation within their sections some trainees express and promote the sense of being part of CIAT as a whole.

A further suggestion was that a lunch be included to introduce recent arrivals to other trainees and staff.

The TYPE OF TRAINING that should be provided by CIAT was the subject of much staff discussion. Generally it was thought that the acute shortage of trained personnel in many Latin American countries requires more attention to generalist training with overlay of some specialization. This is especially apparent when contrasted with the specialists highly trained at U.S. and European universities returning to find their skills difficult to put to use. It is also apparent from many trainee requests reported by staff for a broader experience within their specialist training program. Thus within their specialized departments some staff are attempting to provide their trainees some generalist background and, to some extent, a production orientation. This has been reflected by some former trainees who describe their training as being production as well as research oriented even though they were officially in a research training capacity.

Some staff see other justification as well for a broadened training program. They believe that trainees having some working experience in other sections have less chance of "going stale" during their stay at CIAT and, in addition, are better sources of information about CIAT activities, projects, teams and opportunities on return to their countries and institutions.

Several indicate they have their R/P interns attend a portion of the production specialist courses. They plan to have even more participation of this type.

A number of staff feel more trainees need a training experience beyond the CIAT facilities themselves. The study and work outside CIAT permits trainees to gain experience in several types of environments and with commodities and problems under differing conditions. It may also help CIAT to widen its cooperative relationships with other institutions. It would certainly be popular with trainees who complain the experience at CIAT is too insular and removed from the realities of the countryside.

Proposals to broaden CIAT's training of R/P interns to include more production experience led to discussion about the production specialist program itself and the use of staff time in it. Some felt there needs to be more planning for the effective utilization of senior staff involved, that they were subject to unrealistic demands and given too little time to properly prepare presentations. Perhaps a third of those scientists providing lectures to production specialists felt their participation had little value because it was not extensive enough. Others found the production specialist groups difficult to teach because the classes are so heterogeneous in background.

Despite these reservations the large majority of senior staff said they wanted to participate in the production specialists' training. One staff member indicated that participation in the production specialist training was not always a one-way affair. By arranging with the crop production program to conduct experiments, the trainees received additional experience and the commodity section accomplished trials not otherwise possible.* Some feel greater participation by junior staff of their sections could provide excellent training experience on both sides, though warning that this would have to have careful planning and not become only a procedure for senior staff to shift these responsibilities elsewhere.

Several staff mentioned that these sessions were an enormous waste of time as they were largely putting forth material that should, in fact, be prepared in printed units. The trainee would then have these in greater detail for use on return home (instead of incomplete notes) and be the basis for the staff member spending his time with them on clarification and discussion.

In looking at the content of the production specialist program, some staff felt this too should be broadened to include consideration of more practices immediately applicable to the improvement of life on the farm, not just technology of the major production aspects. They approved of the garden vegetable training already in the program and would like to see other

*One of the trainees involved had not completed his B.S. thesis and used this experience with permission of his university as the basis for it.

information materials made available on small animal (goats, ducks, etc.) husbandry and fruit horticulture. Some even suggested the trainees should spend part of their time on farms of varying size, including a subsistence farm where they must deal with limited resources. Again, this would be heartily seconded by the numerous former trainees who thought the CIAT experience too far removed from many of the farm level problems they had to face.

It was also suggested that the production specialist program should be affiliated with a university in order for the trainees to obtain masters degrees in production. CIAT would provide the thesis work in cooperation with a local university.

Staff opinion on short training courses in their speciality was strongly divided. As generally defined, the short course lasts 2-8 weeks and concentrates on a single commodity.

Many staff thought the effort required to provide them too diluting for staff and that the short time would not allow the trainee more than a classroom exposure and certainly no time to undertake a project himself. They thought that CIAT should only use the short course to provide a practical polish to persons already well grounded in the area concerned. Even so, many thought the short, specific course is antithetical to the apparent need for more generalist training in Latin America and that it would be a mistake for CIAT to stress it.

Those supporting the short course felt they would make more effective use of their own time as well as that of the young scientist if he were brought in for highly specialized, intensive training in a particular activity such has been done with rice workers and is being planned by the yuca program. It was even suggested that some groups might benefit from a series of short courses put on by different commodity sections. For example, a group of credit supervisors might be invited to attend short courses on pastures establishment, crop production, and a livestock grazing management series of very intensive and highly specific focus with fairly narrow training objectives. These could eventually be worked into flexible packages by each section so they could be designed and strung together as dictated by the needs of the group. Of course this would require more assistance and coordination from outside the various sections than presently exists.

Another type of training experience CIAT might offer would be a form of "re-entry" orientation of several weeks for Latin American graduates of U.S. and European universities who wish to familiarize themselves with work going on at CIAT in their specialities.* Another possibility would be to provide more opportunities for Latin Americans taking their degrees in the U.S. or Europe to do their field research at CIAT or with CIAT dissertation supervision in other Latin American locations. CIAT is developing unique experience to offer such as in techniques of data collection and interviewing, and some knowledge of the interplay of social and economic factors in decision-making among low-income farmers that is largely ignored in training in the more developed countries.

One of the criticisms of TRAINING PROCEDURE at CIAT has been the level of coordination of the research/production intern program. Interns arriving at CIAT have been assigned to work with specific scientists, and a number of these staff members feel too little attempt is made to coordinate their activities and give them an identity as a group.

Some staff have also recommended that commodity sections consider assigning a staff member primary responsibility for coordinating training efforts within each section. Such a person might spend a major portion of his time on training coordination and the balance on research.**

The diversity and size of CIAT's training program has required frequent use of junior staff as trainers. This has proved to be an excellent professional experience for them as well, in the opinion of the senior staff. The use of junior staff as trainers at CIAT has also drawn the attention of CIMMYT staff members who are considering implementing a similar procedure. Although some staff have wondered whether trainees might resent being taught by junior staff, this concern was not voiced by a single trainee respondent in interview or questionnaire.

*CIMMYT has found this procedure very effective in building relations within countries and institutions.

**A training study at IRRI said from their experiences training coordinators needed to have specific duties in maintaining regular contact with interns or they rarely saw them.

Various thoughts on TRAINING METHODS for the research/production interns emerged from interviews with staff. Although it is recognized that needs and possibilities are different for various sections and circumstances, it is perhaps helpful to demonstrate one team's thinking on the matter.

A general and flexible formula evolved by this commodity group incorporates 30 percent of the trainee's time in production training, 20 percent on a specialized research project, and 40 percent on work within the area of his special interest as a member of the team. In addition, 10 percent of his time is spent off the station in extension work.

Several sections give each of their interns a research project of his own to do in addition to working with the team. Their supervisors see this training as similar to a graduate program without the formal coursework.

In various ways throughout the study it was apparent that CIAT needs to give more attention to the development of TRAINING MATERIALS AND INFORMATION SERVICES for trainees. Trainees thought the provision of more technical materials and publications was by far the most useful expansion of followup support that CIAT could provide and this is discussed at greater length elsewhere in the report. Materials developed for followup services, of course, often have great applicability to training programs conducted at CIAT and therefore some mention is made of them here.

Concerns about training materials and services were directed at three issues; developing new materials, better packaging of those already existing, and doing a better job of introducing trainees to the various information systems.

Development of new materials was thought to be particularly useful to help solve two training problems; 1) to familiarize trainees with varied conditions they might not be able to encounter in only one growing season's stay or part of a season's stay at CIAT, and 2) to minimize the problem of differing backgrounds in heterogeneous training groups. Development of visual aids was recommended in the first case and an audio-visual self-study package in the second.*

There is a substantial amount of potential training information material at CIAT. A great deal has been generated by the commodity sections and for

*CIMMYT is relying increasingly on self-study materials to allow more effective training of heterogeneous groups.

theory courses of the livestock and crop production specialist programs. Some sections have made a special effort at collecting training materials of other institutions related to their commodity which is used or modified as needed. There has been agreement among CIAT's sister centers to exchange inventories of training materials, but no action taken as yet. There is much interest in packaging such materials in flexible training units for use by CIAT at the station, in outreach activities, and in support of former trainees.

Improving trainee introduction to CIAT's information systems is intimately related to library services and language problems. Most staff thought CIAT should be doing a great deal more to assist trainees in preparation of bibliographies and reviewing literature in their fields. New trainees need to be familiarized promptly and systematically with basic bibliographic sources and key articles in their speciality.

There were a number of calls for longer library hours but though recently extended, use by trainees has not yet gone up substantially. This will probably improve as the accessibility becomes better known and the staff, as some have indicated an intention, give more help to the library in developing its collection of technical materials of use to these trainees.

While most staff feel the \$50 book allowance for trainees is a good idea and should be increased, many who commented on it felt the allowance was rarely well used. Citing their own failure to give their trainees sufficient assistance in identifying the materials that would be most useful to them in the future, several also suggested the allowance might even be more useful if used to pay for reproducing basic articles and abstracts in their speciality.

It was also suggested that a specific amount be set aside for each trainee that could be used by them for requests to CIAT for such services for up to two years after departure.* From recent indications by the World Bank, it is probable that additional funds for such information followup support activities would be available from that source. Several staff said that just asking the trainee to provide a list of textbooks is easiest for the staff to handle but is not the most beneficial or useful to the individual.

*IRRI reportedly provides materials at no cost to graduates of its training programs.

The majority of trainees, including 85 percent of the production specialists and 79 percent of the research/production interns, thought the LENGTH OF TRAINING appropriate. There was little difference of opinion on this between the high and low utilizer/satisfaction groups. Most of the few indicating a preference for a different length of training thought an increase of 25-50 percent desirable and most of these were on training programs of less than six months.

As shown in Table 11 the LEVEL OF TRAINING was thought adequate by a high percentage of the trainees. The production specialists were more positive than the R/P interns, about a fifth of the latter and 7 percent of the former thought the level too elementary. Only one trainee in the entire population declared it too advanced. There was negligible difference shown between former and departing trainees of any group.

The entire high U/S group felt the level of their program appropriate. The low U/S group was evenly divided between those who found it appropriate and those who thought it too elementary.

Table 11. Trainee View of Level of Training and Non-Training Activity

	Level of Training Was;			Too Much Time Given to Work That Was Not a Training Experience	
	Appropriate	Elementary	Advanced	Yes	No
Prod. Spec.	93%	7%	-	21%	79%
R/P Interns	77	21	1	29	71
Total	82%	17%	1%	27%	73%

Among the high U/S group 94 percent felt there was no problem of too much work being unrelated to their training. Sixty-five percent of those in the low U/S group felt they did have this problem.

Table 12 shows the trainees' evaluation of SPECIFIC ASPECTS of their training. Many observations can be made from this table, including:

Practical experience received the most frequent excellent rating. This was particularly evident with those production specialist and

Table 12. Evaluation of Specific Aspects of Training

(Excellent, 5; Good, 4; Adequate, 3; Poor, 2; Very Bad, 1. Expressed in percentages.)

	Theoretical Material					Practical Experience					Type of Techniques					Number of Techniques					Technical Facilities Available				
	5	4	3	2	1	5	4	3	2	1	5	4	3	2	1	5	4	3	2	1	5	4	3	2	1
Prod. Spec.																									
Former	19	38	43	-	-	38	57	5	-	-	29	62	10	-	-	10	71	19	-	-	43	43	10	4	-
Departing	14	71	14	-	-	43	57	-	-	-	14	71	14	-	-	-	71	29	-	-	-	86	14	-	-
Subtotal	18	46	36	-	-	39	57	4	-	-	25	46	11	-	-	7	71	21	-	-	32	54	11	4	-
R/P Interns																									
Former	13	26	39	8	13	45	49	6	-	-	27	56	8	4	-	23	51	21	2	2	48	35	10	6	-
Departing	20	60	10	10	-	42	50	8	-	-	50	42	8	-	-	33	33	33	-	-	8	67	17	8	-
Subtotal	14	33	33	8	10	44	49	7	-	-	32	57	8	3	-	25	47	24	2	2	40	42	12	7	-
Total	16	38	33	5	7	43	52	6	-	-	30	59	9	2	-	20	55	23	1	1	38	46	11	6	-
	54			12		95			0		89			2		75			2		84			6	
% of low U/S	13			40		81			13		69			13		82			-		71			18	
" high U/S	60			-		100			-		94			-		100			-		94			-	

research/production interns interviewed as even those who had not been happy with their training experience repeatedly indicated their appreciation of CIAT's practical orientation to training. In the table this is unique in receiving not one rating lower than adequate and 95 percent good or excellent.

Several of the former trainees who have since risen to high positions in their home institutions commented that even though they no longer physically used the practical skills they had learned at CIAT, they had gained a confidence and feeling from the experience that allowed them to understand better and support what those under them were doing and better evaluate proposals for practicality.

Numerous research/production interns thought the biggest deficiency in their training was lack of contact with the small farmer. Even the work with and visits to farms off the station were usually with large commercial operators whom many did not see as particularly relevant to the major problems in their countries.

Experiences provided the production specialists (and a few R/P interns) like recent visits to small farms in the Santander de Quilichao area were repeatedly given as among the richest experiences received at CIAT and a highlight of their stay.

There was not only a desire for more contact with the small farmer but for more exposure to the methodology presently practiced at the small farm level and for more emphasis on production economics and accounting at the field level. There was also some need expressed for greater consideration of community development and sociological aspects of working in rural communities.

The assumption seemed to be that CIAT knows more about these small farm related subjects than it is passing on to the trainee. It is possible that those trainees especially interested in these problems might provide willing manpower for the gathering of field information on farm level operations that CIAT is now seeking. This would necessitate, however, that time be built into the

training program for field work of this type.

In the case of theoretical material the production specialists appeared considerably less critical of what they had received than the research/production interns. Perhaps this is reflected in the comment of one departing trainee who was both very satisfied with his training and highly rated by his supervisor. "It would have been very useful for me to understand better some of the chemistry behind a number of the techniques that I simply learned by rote." As the practical experience was the least criticized aspect of training the theoretical material has been the most criticized.

None of the trainees in the high U/S group was critical of any of these categories. The one they were least positive on was theoretical material. This was also subject to strong criticism by the low U/S group.

One of the most striking changes in opinion between former and departing trainees is the apparent shift down from excellent to good or adequate in ratings of technical facilities available at CIAT. There is no clear explanation of this except occasional comment that unavailability of facilities, equipment, material and labor at times they were most needed was too common an occurrence.

Table 13 shows trainee preferences regarding certain aspects of the work they encountered while at CIAT and whether they would have preferred more (+), less (-), or an equal (=) amount.

Table 13. Trainee Preference Regarding Work at CIAT (expressed in percentages).

	Theory			Work in laboratory			Work in fields			Responsibility for own project		
	=	-	+	=	-	+	=	-	+	=	-	+
Prod. Spec.	46	35	19	39	9	52	46	8	46	20	-	30
R/P Interns	26	6	69	52	-	48	60	13	26	45	2	53
Total	37	17	60	48	3	49	56	11	33	37	1	49
All Former	30	16	55	48	3	48	60	11	29	38	-	63
All Departing	44	13	44	47	-	53	41	12	47	36	7	57

Among the interesting observations here is that the production specialists and the research/production interns take opposite views regarding the desirability of more or less theory in their programs. Another is the strong interest in more responsibility for their program expressed by the production specialists. In addition, while the most common opinion regarding personal responsibility is still that more should be given, this has dropped among recently departing trainees, possibly because they are receiving more. Another substantial increase among those departing is a preference for increased field work.

When asked what other kinds of ADDITIONAL TRAINING they would have liked to receive, the trainees responded with suggestions that ranged from farm construction for persons who are not agricultural engineers to personnel management. The most common suggestions were for English, technical writing, experimental design, statistics and production economics open to all.

In late 1973 an English course was made available. Emphasis is given to spoken rather than written English which some staff feel would be more useful to greater numbers since the greatest need is increased access to the literature. Though the trainees themselves have been very vocal in their belief that training in English is needed, under the voluntary attendance program many have not stayed with it steadily.

A few hours on technical writing have been included in recent production specialist training. There is a general feeling this should be extended and various commodity staff indicated they would like to send their trainees to such sessions if notified sufficiently in advance.

Fifteen percent of the trainees felt there were too many SEMINARS at CIAT, 3 percent thought the level about right and 82 percent thought there should be more. There were repeated statements stressing the importance of seminars as a training and professional experience. Sixty-nine percent would like to see more trainee participation in these or in special seminars to be conducted for that purpose.

The majority of staff felt greater trainee participation in seminars would be very useful, especially in seminars to be conducted by the trainees themselves. These could include literature reviews, provide an opportunity

to introduce new trainees and perhaps allow greater socialization with staff. Most staff said that they would be quite willing to help their trainees prepare for such activities, but that they should be intrinsically valuable and not just a training exercise.

Some of the trainees felt they would like to have more outside presentations in addition to those of visiting scientists, e.g., commercial businessmen and extension and project directors of agricultural institutions.

Several sections carry on extensive seminar and literature review programs within their own groups, others are planning to do more of this type of activity. The trainees involved usually regard these highly. Certain supervisors, in fact, require each of their interns to present a seminar near the end of his training period and consider it an important part of their experience at CIAT. One intern supervisor notes that many of these young trainees will soon be conducting meetings and presenting papers and that preparing them for this to some degree can be an important contribution by CIAT.

Section seminars often cover topics of interest and value to a broader audience. Several staff mentioned they have spread word of their sessions when they thought this to be the case but that even those interested usually forgot about it. Through some regularly distributed notice, perhaps T&C should inform all staff of upcoming topics and schedules for CIAT-wide seminars, the program of trainee seminars--if they evolve, section seminars to which others are welcome, and the production specialist program lectures.

Trainee GENERAL SATISFACTION WITH TRAINING was somewhat higher than most staff seemed to expect. (See Table 14.) It was also higher than negative comments on certain aspects of training would have suggested. When asked for an overall evaluation of their training, however, all categories of trainees were rather positive. It may be that a few of those who were particularly dissatisfied were not inclined to respond to the questionnaire. Others may have felt that "moderately satisfied" sufficiently indicated their reservations.

About half the staff interviewed had their departing trainees write a report that summarized their work. Usually this served as a personal evaluation of their program and performance. Most of the trainees thought this

important and put serious effort into preparing it.

Table. 14. General Satisfaction with Training.

	Very Satisfied	Moderately Satisfied	Not Satisfied
Prod. Spec.			
Former	52%	48%	-
Departing	50	50	-
R/P Interns			
Former	45	47	8%
Departing	50	50	-
Total	48%	47%	4%

Of the 26 former trainees who registered perfect scores in the utilization of training index, 65 percent indicated they were very satisfied with training and the balance that they had been moderately satisfied. Of those trainees in the low range of the index, all were moderately satisfied with training, except one who was not satisfied.

The following may help to identify some of the factors affecting satisfaction:

Fifty-four percent of the trainees said there were no important OBSTACLES to deriving maximum benefit from their training activities. Of those who said there were, the most commonly noted item was lack of a specific training plan (12 percent; half of these individuals were in the low U/S group also). This was followed by dissatisfaction with geographic, social and status distance between supervisor and trainee (8 percent), problems with English, inefficient organization of the trainee's time by CIAT, and lack of equipment when needed (5 percent each). The other 11 percent were widely scattered, including such problems as lack of a seed production and certification program and interpersonal problems with other trainees.

One of the former trainees now working at CIAT called for greater cooperation by the employees of CIAT in the interest of promoting and enhancing the training programs. A staff member complained that CIAT employees in supply

and support sections often do not provide the kind of assistance to the interns that they need and are entitled to in order to accomplish their work. Repeated intervention of the senior staff member is too often required to generate such cooperation. These and other comments suggest that perhaps more should be done to develop a more pervasive concept of CIAT as a training institution and stronger identification of all employees with their role in this function.

In order to identify their problems from a different perspective, trainees were asked to indicate the LEAST USEFUL OR VALUABLE ASPECT of their stay at CIAT. The largest group (26 percent) said there were no particularly important problems. Repetitious field and laboratory work bothered 20 percent. Lack of staff support and problems of communication and relations with staff together accounted for another 15 percent. Inefficient organization of their time by CIAT was again mentioned (13 percent) as was lack of a training plan (9 percent). The other 17 percent were widely scattered and included such items as insufficient time for use of, or inadequacy of, the library. A few resented being sent to the library without specific projects to work on and suspected they were just being "occupied." One thought the isolation of programs at CIAT from one another decreased the potential learning experience trainees might gain from some contact with each. Another found long, tedious meetings were excessive.

It is evident that the question of staff-trainee relationships comes up repeatedly in response to a variety of questions. Accusations of staff despotism or neglect of the trainee are not a majority opinion, but frequent enough with other complaints to justify concern and discussion. Problems in these relationships cut across all types of training, levels of performance, and standing of trainee with staff. Perhaps the saddest commentary on this matter came from several staff who were not sure it needed to be discussed in a staff seminar on training because "there is nothing that can be done about it."

Some of the relationship criticism probably is not justified but it seems a serious enough problem to warrant discussion. Several staff indicated considerable concern about what they saw as neglected trainees.

While some trainees feel they do not get much attention from their supervisors, most supervisors of trainees feel they are giving a sizable pro-

portion of their time to the training function. Some feel they are already extended far beyond what is reasonable for effective performance in training, research, or any other matter.

Among typical trainee comments;

"The staff should receive some training in public and human relations."

"To improve training CIAT must give more attention to the human relations factor."

"There should be a friendlier attitude from the first day." (Several staff members indicated they tried always to meet trainees at the airport as "I would any colleague.")

"In my country we welcome trainees muy calorosa."

"I wish to emphasize the bad treatment given trainees at CIAT. They are underestimated and undervalued professionally." (From a former trainee who has a very responsible position in his own institution and is highly respected at CIAT.)

One question asked for comment on living conditions including stipend, free time, social activities, transportation, recreation, food service and contact with staff. The first six are generally recognized by staff to have been problems and much has been done to remedy them. It is the latter item, however, that drew the most frequent comment (35 percent) from trainees, e.g.,

"I had little contact with staff despite my efforts."

"There should be open luncheons with a small and changing group of staff periodically so the trainee could come to know them."

"Very little contact with staff. None of a social nature; some hardly cordial."

"The becarios place in the social structure is very bad."

Despite these comments the trainees generally seem well aware that the demands on the time of their supervisors are great. So long as they believe he has a genuine personal interest in them and their work the lack of attention does not seem to bother them greatly.

Practical experience was by far the dominant choice among all trainees as the MOST VALUABLE ASPECT of the training period. A year in the field seems to generate an increasing appreciation of the practical experience at CIAT as the most valuable part of the training period, i.e., while only 24 percent of the departing trainees cited this as most valuable (still the

biggest single category), 38 percent of those in the field for a year or more put it at this level. The rating for experience in research dropped from 14 to 6 percent (which may suggest that many trained in research are now in extension, production or administrative roles).

Among all trainees, technical knowledge gained was thought most valuable by 16 percent, and the opportunity to meet other trainees and workers from throughout Latin America by 9 percent. The remaining third was divided over a wide range including contact with farmers, responsibility for own project, "everything", prestige gained from studying at CIAT, communication training, use of the library and easy access to information, motivation and discipline for research, learning how to deal with others, organizing and working as a team, being able to participate in field work without discrimination (female trainee), and interest and assistance of supervisor.

Having the opportunity to meet other agricultural specialists from throughout Latin America is not only appreciated by CIAT's trainees. CIAT staff recognize that in coming to know associates in his field the trainee not only builds his own network of contacts for future use, but a network which strengthens CIAT's own as well in his area.

Post-training Activities. Almost half of the former trainees have received some form of FURTHER TRAINING since leaving CIAT. For about 60 percent this training has been provided within their own institutions, usually in the form of short courses and other forms of in-service training. About 20 percent have received further training outside their countries. The balance receiving additional training have attended courses at other institutions in their own country. About 70 percent of the production specialists and 40 percent of the R/P interns have received further training.

The PRESENT OCCUPATIONS of former trainees involve a wide range of activities, positions and types of institutions.

Table 15. Type of Institution in Which Working*

	Government Ag. Inst.	Agro- business	Bank or Credit Inst.	University or College
Former				
Prod. Spec.	65%	18%	12%	6%
R/P Interns	68	8	3	22
Total	67	11	6	17
% High U/S	50	6	6	19
% Low U/S	35	12	6	18
Departing				
Prod. Spec.	80	--	20	--
R/P Interns	78	--	--	22
Total	79	--	7	14

*An additional 16 former trainees are employed at CIAT.

Few trainees expect to enter agro-business on departure but within a few years a number have. Several who were R/P interns indicated that although they would have preferred to remain in research activity, opportunities and compensation were limited. They were also among those trainees taken on without the assurance of positions on completion of training. Those in universities and colleges include students and professors.

Table 16. Present Position

	Director or Manager	Professor or Instructor	Other Profes- sional	Business- man	Student	Unem- ployed
Former						
Prod. Spec.	30%	5%	60%	5%	--	--
R/P Interns	21	15	53	6	4	--
Total	24	12	55	6	3	--
% High U/S	24	6	53	--	6	--
% Low U/S	17	6	50	11	6	--
Departing	21	--	64	--	--	14
Total	23%	10%	57%	5%	2%	3%

A sizeable percentage of former trainees indicate they have now reached executive-level positions as evidenced both by the numbers who designate themselves as directors or managers (Table 16) and the number indicating substantial responsibility for the supervision of others (Table 17). CIAT staff might give more consideration in selection and in structuring their training to the needs of persons likely to assume such responsibilities.

The "other professional" group is predominately researchers and extension workers who are in technical but not authoritative positions. Eleven percent of those in the low U/S group and none of those in the high U/S group are among the trainees who have gone into the business community.

Table 17. Supervisory Role

	Supervise Others		How Many		
	Yes	No	(1-5)	(6-25)	(25+)
Former					
Prod. Spec.	26%	74%	77%	--	22%
R/P Interns	23	77	44	38	9
Total	24	76	56	23	12
% High U/S	11	87	53	27	20
% Low U/S	36	67	66	22	11

A sizable number of departing trainees see themselves as having immediate and substantial supervisory responsibilities which, with other findings, suggests that CIAT is gradually selecting persons, especially as R/P interns, who are further along in their careers. This may also be one reason for the seeming irritation of some trainees at not, in their opinion, being sufficiently treated as fellow professionals and colleagues by CIAT staff. Most of those with extensive responsibilities for personnel are active technical supervisors of projects or programs rather than principally administrators.

There is a lower percentage of high U/S than low U/S trainees who report they are in supervisory positions. However, of trainees in these positions, those of the high U/S group appear to have a higher level responsibility.

Table 18. Primary Activity (more than one category possible).

	Research	Training	Extension & Tech. Assistance	Adminis- tration	Student	Other
Former						
Prod. Spec. 19%		24%	43%	43%	-	7%
R/P Interns 64		20	6	24	4	2
Total	51	21	22	26	3	3
% High U/S	61	33	-	22	11	-
% Low U/S	33	22	13	28	-	6
Departing	54	9	54	-	-	-
Total	52	20	23	26	3	3

Of particular interest is the sizable proportion of former trainees who see training as one of their primary activities. It is especially surprising to find this so prevalent among the R/P interns relative to the production specialists since this function was much less a consideration in the training of the former than the latter.

Among the high U/S trainees there is a high incidence of trainees having research as their primary, or one of their primary, activities. None of this group gave extension as a primary activity. Those trainees in the low U/S group were relatively dispersed among the various activities.

Table 19. Importance of CIAT Training in Present Position.

	Very	Moderately	Little	Of No Importance
Former				
Prod. Spec.	81%	14%	5%	-
R/P Interns	66	26	-	8%
Total	73	21	1	5

The information used for this table was one factor in the utilization index. More than 90 percent of the trainees felt their training is of at least moderate importance in their present work and the majority that it is very important.

The six percent who believe it of little or no importance include those who were completely dissatisfied with their training and a number

for whom change of circumstance and nature of anticipated activity have made the training superfluous. Examples include one R/P intern who contended CIAT failed to provide the training that had been agreed upon. Another trained in animal work at CIAT is now in vegetable production. Sales and credit administration completely occupy two who spent their time at CIAT learning very specific research techniques.

All of the departing trainees who knew specifically what the nature of their new job was going to be believed the training received would be very relevant to their positions.

The means of finding employment after training has changed substantially over time. It reflects the effect of closer relationships with host country institutions and increasing insistence on the long-held ideal that every entering trainee have an assured position awaiting him.

Of former trainees only 26 percent reported their sending institutions helped them find employment. That figure rose to 46 percent with the departing trainees. Whereas only 33 percent of former trainees indicated their employment had been arranged before coming to CIAT and 27 percent that it was not arranged until after they departed CIAT, these figures were 71 percent and less than 2 percent, respectively, for departing trainees.

The substantial difference in FOLLOWUP and closeness of contact with former trainees varies from those staff who refer to "our man" in whatever country or institution to those who do not know where their trainees are three months after training. "I have helped occasionally with job references--beyond that, not much," and "I sometimes run into them" were surprisingly frequent total replies from staff regarding their followup activity with former trainees.

This was reflected in some trainees' comments that they had never received information promised from CIAT. Sometimes they claim this was after

repeated requests and assurances of the help or material.

Several staff members said that not being able to be of more help to those they had returned to the field was the most frustrating part of their job. They note that in many areas some technical specialities in which CIAT is working are virtually devoid of trained scientists at any level. Thus those few individuals CIAT does feed into local institutions are of considerable significance and it is of particular importance that CIAT see they are off to a good start.

Comments on why more extensive followup has not been carried out to date included;

1. CIAT has not long had a sizable body of former trainees returned to their home countries.
2. These trainees have only occasionally been associated with projects in which CIAT has a direct cooperative interest.
3. There has been little investigation into what followup support was needed or wanted.
4. There has been neither staff nor time in some cases to act where both the need and the remedy were known, and
5. Lack of funds has been inhibiting to some extent.

A recent training meeting of representatives of CIP, CIMMYT, CIAT, and the World Bank discussed training followup activities of the international centers in Latin America. The discussion reflected the growing concern by all for more active support to former trainees in their jobs. It was clear that occasionally writing letters, sending circulars and perhaps finding out what former trainees are doing is insufficient but all too characteristic of what followup does take place.

As the contribution of the trainees to agricultural development in their countries is the objective rather than the training itself, the centers are gradually concluding that they must be more involved in assuring the trainees' maximum utilization. This will require much more extensive followup than practiced.

For maximum effectiveness it is an activity that must receive consideration from the time the need is determined for which training will be given. Its preparation must continue right through planning and training and its nature must

be clear and determined jointly by CIAT staff, the trainee and the home country institution involved.

Aside from a decision to give more conscious attention to followup there are other trends that should greatly enhance it in the future. Primary among these are the tendency to orient recruitment to evolving relationships and cooperative projects with institutions throughout the region; the more specific identification of priorities by the various sections, narrowing the focus of recruitment and increasing the section's vested interest in the trainee's later activities; and the growing importance of outreach programs which will increase both use of former trainees and the presence of CIAT staff in areas where former trainees are at work.

Although limited during these early years of focus on establishment of programs and facilities, a number of observations can be made about CIAT followup to date. It has been casual and most often by chance or initiative of the former trainees. Over 10 percent of the former trainees indicated that continued contact and cooperation after their departure had not even been discussed.

All of the high U/S group indicated specific mechanisms had been established with CIAT staff for continued contact as compared to 75 percent of the low U/S group. All of the high group report having had some contact since departing while 14 percent of the low have had none. The following tables provide a partial description of followup activity;

Table 20. Contact With CIAT Professional Staff Since Training.

	Frequently (7+ Times)	Occasionally (3-6 Times)	Rarely (1-2 Times)	Have Had No Contact
Former Trainees (excluding those employed by CIAT)				
Prod. Spec.	19%	43%	19%	19%
R/P Interns	35	43	19	3
Total	29%	43%	19%	9%

The former R/P interns indicate substantially more contact with CIAT than the production specialists. This is perhaps to be expected since those involved in research would be more oriented to following developments at CIAT

and calling more frequently for technical advice and cooperation than those more involved with production and extension. Also an increasing number are part of cooperative projects between CIAT and institutions in their own country. From Table 21 we see that contact has also been more recent for the R/P interns.

Table 21. Last Contact With CIAT Professional Staff Since Training.

	In Last 2 Months	2-6 Months Ago	6 Months to 1 Year Ago	More Than 1 Year Ago
Former Trainees (excluding those employed by CIAT)				
Prod. Spec.	26%	37%	5%	32%
R/P Interns	49	33	15	3
Total	40%	35%	12%	13%

The value trainees place on the opportunity to meet other workers from throughout the region while at CIAT has been mentioned. Ninety-three percent of former trainees indicate they have had some contact with such new acquaintances after leaving CIAT. Twenty-seven percent describe these contacts as technical and professional in nature, 25 percent state such contact has been social, and 47 percent say their contacts have been both social and professional.

Tables 22 and 23 deal with followup as a function of services and cooperation requested of CIAT staff by former trainees.

The degree of followup support indicated in Table 22 shows dramatic differences between the high and low U/S groups. Ninety-three percent of the high U/S group requested assistance from CIAT. In all but one case this assistance was forthcoming and in that one it was partially provided.

Only 57 percent of the low U/S group requested assistance. Of these requests assistance was provided in 61 percent of the cases. In 9 percent it was only partially provided and in 30 percent it was not provided.

The high frequency, in comparison to the average for all trainees, of contact by the high U/S group with CIAT staff coupled with the high incidence of these individuals' receiving positive action on their requests as shown here, suggests a significant influence of followup on high ratings in both satisfaction with, and utilization of, training.

Table 22. Cooperation Requested

Group	Cooperation Requested		Type of Cooperation Requested Received (3), Partially (2), Not Received (1); % of Trainee Group Requesting																					
	Yes	No	Technical Assistance			Technical Printed Materials			Another Scholarship for						Training Assistance			Audio-Visual Materials			Other			
			3	2	1	3	2	1	Self			Others			3	2	1	3	2	1	3	2	1	
									3	2	1	3	2	1										
Prod. Spec.	71	29	19	19		10	-	10	-	-	10	10	-	10	10	-	10	24	10	14	-	-	-	
R/P Interns	86	14	39	8	3	50	-	3	5	-	8	16	-	3	5	-	5	8	-	13	11	-	5	
Total	74	26	33	12	2	42	-	7	4	-	9	14	-	5	7	-	7	14	2	14	7	-	4	
High U/S	93	7	50	7	-	50	-	-	7	-	-	21	-	-	14	-	-	14	-	-	14	-	-	
Low U/S	57	43	38	25	13	100	-	-	-	-	13	13	-	-	-	-	-	13	-	38	13	-	25	
Type as % of Total Requests			26			27			7			11			8			16			6			100%

Table 23 indicates some substantial changes of opinion regarding the importance of CIAT contact with authorities of the trainees' home institutions. Only one percent of the departing trainees believed this to be one of the most useful services, while 18 percent of those who had been back in the field for a year thought so.

This increased rating is complemented by comments of several Latin American senior CIAT staff. They stress that in their culture a continuing relationship with a prestigious institution such as CIAT enhances the trainee's position and influence and, hence, his opportunities to maximize utilization of his training. This suggests even brief visits have a particular value at least in this respect (although some of the following paragraphs express some reservations of trainees to brief visits paid to them personally by traveling staff).

There is little difference between the high and low U/S groups or between them and the percentages for all former trainees except the importance assigned staff visits to the trainees themselves. Nineteen percent of the low U/S group felt visits from staff were of little or no importance, whereas none of the high U/S group thought so. Seventy-five percent of the latter group thought such visits very important compared to 56 percent of the low U/S group.

Staff visits to trainees were the least frequently rated by former trainees as "very important." However, as compared to the departing trainees the former production specialists increased their evaluation of these visits while the R/P interns apparently decreased theirs. Of related significance are comments by trainees that visits to them are usually too short, too social, not planned or announced in advance and unrelated to specific technical problem solving. This situation can improve as staff visits become more related to outreach and other specific project cooperation and certain staff members allocate more time and responsibility to field support.

In response to another question asking which of these services would be of most use, providing informational materials again dominated for all classes of trainees. The lack of materials available to provide to former trainees is seen by many staff as one of the important reasons for insufficient followup today.

Table 23. Importance of Various Followup Services.

(Very, 3; Moderately, 2; Little or No Importance, 1. Expressed in percentages.)

	Visits by CIAT Staff			Contacts with Institution Personnel by CIAT Staff			Sending Abstracts in Their Field			Reunions Every 2 Years for People in Their Field			Sending CIAT Reports and Publications		
	3	2	1	3	2	1	3	2	1	3	2	1	3	2	1
Former															
Prod. Spec.	85	15	-	85	10	5	95	5	-	100	-	-	100	-	-
R/P Interns	62	31	7	77	12	12	100	-	-	88	9	3	98	2	-
Total	69	26	5	79	11	10	98	2	-	92	7	2	99	1	-
Departing															
Prod. Spec.	57	14	29	67	-	33	43	43	14	50	33	17	57	43	-
R/P Interns	83	17	-	83	8	8	75	8	17	58	42	-	92	-	8
Total	74	16	11	78	6	17	63	21	16	56	39	5	79	16	5

There is a considerable amount of material prepared or in process in the various program sections. Examples of types include a rice production manual, technical newsletters such as "El Macero," a book on bean diseases which is being updated by scientists collaborating within and outside CIAT, and a variety of technical leaflets and other items. Many staff feel CIAT should provide more financial and staff support--beyond what is available in the commodity sections--to expand such information activities.

Preparation of abstracts and other material through the library is seen as an activity of major assistance which many feel should be broadened. Several sections are preparing or considering preparation of such abstracts and would appreciate assistance in their preparation and distribution to former trainees and others working in their area. Some staff have also suggested CIAT publish lists of new materials available at the library and distribute this to former trainees and others by interest categories.

As opposed to the opinion of departing trainees, those who have been out for a year quite strongly give increased importance to receiving information materials (CIAT publications, abstracts of articles and other items) when evaluating the degree of importance of these services on an individual basis. Yet, when estimating the relative usefulness between these services in the previous question there was a great drop (62 percent of those departing, 26 percent of former trainees) for the CIAT publications category when valued against other services.

Table 23 also shows a sizable divergence of opinion regarding the importance of biennial reunions for groups by speciality between recent trainees and those who have been in the field for a year and thought this much more important. The rice seminar of this type was apparently a great success. However CIAT might also take note of the experience of CIMMYT in which meetings for entire groups conducted on a number of occasions were dropped in favor of inviting selected trainees back to technically oriented seminars to which outside resource persons were also invited.

Some staff felt such reunions so important that the number of trainees should be cut back if necessary to make followup meetings economically possible. They felt former trainees need to be brought back to exchange ideas and build professional consciousness, group awareness, and an identity with

one another and with CIAT. In addition they felt there is a certain prestige and recognition bestowed on the young scientist who is brought to such meetings which could be an important stimulus to his utilization by his organization.

While sponsored by CIAT, these meetings would most usefully be rotated and only infrequently held at the center. Some staff felt the faster the leadership, organization and support of such meetings could be shifted to responsible groups or persons outside of CIAT the better.

Sponsoring former trainee attendance at meetings of the various Latin American scientific associations would also increase contact of former trainees with other institutions and strengthen the image of CIAT as an organization seeking to work cooperatively. Some staff suggest such sponsorship would be less expensive to CIAT than group reunions and, at the same time, provide an occasion where ad hoc reunions of former CIAT trainees attending could be organized. If funds were limited for such sponsorships, perhaps funds and systems could be developed whereby supervisors may nominate former trainees to receive assistance by indication of need, benefit, program, and relation to CIAT goals.

There were few trainee suggestions regarding what other followup services CIAT should be providing. Provision of equipment and materials such as seeds drew the largest response (22 percent), followed by more technical and training materials (18 percent each). Thirteen percent suggested joint research projects with former trainees and a few recommended providing laboratory services not available to them at home. The balance were widely scattered and, for the most part, suggestions for activities which CIAT is already pursuing though apparently unknown to some trainees.

Several supervisors interviewed concluded that expanded followup activities will require additional staffing. T&C has suggested that the office or officer proposed to work with outreach and special program efforts also assist the sections with followup of trainees. At least one program section also conceives a full-time staff position for followup support.

Utilization. Factors affecting how the former trainees' experience is brought to bear on problems in his own country are obviously of prime importance and should be of great concern to CIAT. Much of the earlier discussion, in fact, demonstrated how important the center's actions before, during and after training affect utilization of that training by the trainee and by his institution.

The importance the trainee conceives his training to be to his job has been indicated in Table 19 (p. 48). His success in applying it is somewhat different. Fifty-nine percent of the former trainees indicated they were applying it extensively, 27 percent said moderately, 10 percent that it had been only marginally applied and 4 percent that it was not applicable to present work. There was very little difference in percentages between the production specialists and R/P interns, except the latter included the few whose training was not applied at all.

The "multiplication effect" of individuals trained was from the start called one of the most valuable aspects of the trainees' potential impact. The first programs, however, and selection of the trainees did not give particular emphasis to the concept of trainees becoming formal trainers or, in fact, usually speculate on how such an effect was to be achieved. Also less attention was given to there being specific training programs of national institutions in existence or planned to utilize these trainees in such a capacity.

The shift in emphasis in these directions has been gradual with experience with the first several groups. In reviewing the positions now held by former trainees, therefore, and the extent of any multiplier effect such shifts over time in the nature of the program must be kept in mind.

One indication of multiplication effect was the response to a question of whether they had been able to communicate something of what they had learned to others. The following provides the response:

Table 24. Extent of Communication to Others of Information and Skills Acquired in Training.

	Great Deal	Some	Little	No Opportunity
Prod. Spec.	48%	38%	10%	5%
R/P Interns	55	39	2	4
Total	53%	39%	4%	4%

Fifty-three percent reported passing on a great deal, 39 percent said some was passed on, and 4 percent each indicated they had either passed on little or had had no such opportunity. Those now CIAT employees (mostly former R/P interns) indicated a high rating, 70 percent a great deal and the balance a moderate amount, in comparison.

Table 25. Manner in Which Communicated (more than one answer possible; percent of total answers).

	<u>Formal Classes</u>	<u>Conferences, Re- unions, Seminars</u>	<u>Informal Discussions</u>	<u>Extension</u>	<u>Other</u>
Prod. Spec.	18%	26%	41%	10%	5%
R/P Interns	24	20	44	4	9
Total	22%	21%	43%	6%	7%

Informal discussions with their colleagues is given by far the most frequently as the means of passing on what had been learned at CIAT. Somewhat surprisingly, extension is a distant fourth.

The high U/S group lists formal classes about twice as frequently as the low U/S or average for former trainees.

In rating their utilization the trainees provided the following results to a utilization index combining several questions:

Table 26. Utilization of Training

	<u>High</u>	<u>Moderate</u>	<u>Low</u>
Prod. Spec.	76%	24%	-
R/P Interns	73	21	6
Total	74%	22%	4%

In responding to a question on the principal difficulties hampering utilization of the training experience the most frequently mentioned as very important was lack of equipment. The other frequently listed was lack of money. Of less importance were lack of support from their institutions and programs where this experience could be brought to bear.

The first two items were prevalent problems for the total and for the high utilization group. The low U/S group gave considerably more importance than the average former trainee to lack of programs (i.e., opportunity) and lack of equipment.

Among the many comments made by former trainees about utilization, those relating to transferability came back again to the question of CIAT's relationship to the small-scale farmer who dominates Latin American agriculture. These comments questioned the applicability to the trainee's country and agricultural conditions of much of the technical material being presented. As before, these usually relate to what the trainee sees as overly advanced techniques and equipment used in production and lack of knowledge of the methodology of the small farmer.

Other thoughts on utilization go back to the question of involvement of the sending institution in the earliest stages of the training program. Both staff and trainees suggested that if these organizations were not involved in the design of training nor well aware of its nature, it should not be unexpected that they do not always use the former trainees in the manner anticipated by CIAT.

The report of the team originally considering the nature of training activities to be undertaken at CIAT observed, "Effective utilization...may depend upon...CIAT helping the employing organization plan how to use the returned trainee." Again we come back to this essential in-country contact and involvement.

In furthering utilization, CIMMYT has found that bringing to the center administrators of institutions sending, or potentially sending, a number of CIMMYT trainees has been very effective. They generally plan on having one or two such groups of ten or twelve individuals each year.

There has been some consideration of short courses in management of agricultural programs for administrators and perhaps in experiment station organization and management. Such courses in the long run would also probably contribute substantially to the better utilization of other trainees who would be sent from and entering these programs and institutions.

Supervisors who have had the most experience with interns seem the most cognizant of and concerned with the problems of utilization and with tying this aspect down firmly with the institutions concerned. Several stress that however effective CIAT is in increasing the competence and stimulating the zeal of the returning trainee, he is often quickly disabused of good intentions by shortages of transport, labor, land, water, equipment, cooperation and

programs. They would like to see CIAT staff more responsible and concerned for these post-training problems from the time they first consider taking on trainees.

Former trainees falling into the high or low utilization/satisfaction groups were widely spread through the various training programs and commodity groups; those sections that have had the most trainees have had some trainees in high and low U/S groups.

The percentage nominated by institutions to come to CIAT was much higher in the high U/S group (44 percent) than for the low U/S group (24 percent). This, together with the fact that 77 percent of the high U/S (and only 55 percent of the low U/S) group said their institutions had a moderate or primary role in their selection reinforces the conviction that trainees coming from institutions tend to be more satisfied with, and have higher utilization of, their training (although not necessarily in the institution that nominated them) than those who came independently.

A larger percentage of the high U/S group tends to be involved in research and training and to generally have heavier supervisory responsibilities than the overall sample or the low U/S group. The majority of the latter are in administration and business.

The high U/S group tended to be substantially more satisfied with the practical orientation of the CIAT training program, have tended to stay in touch with CIAT more regularly and have received more extensive followup support from their supervisors.

SUMMARY

This report in itself represents considerable condensation. This summary, therefore, provides only a few items pertinent to each topic area.

Recruitment. The major problem identified in recruitment was the lack of and vagueness of pre-interview information for potential candidates and institutions.

Selection. There was a notable shift in the importance of the role of sending institutions in selecting more recent trainees and those selected earlier. Whereas 27 percent of the former interns thought their institutions had had a primary role in their selection, this rose to 43 percent among the departing interns. Of the 25 percent of the trainees who placed highest in both utilization and satisfaction indexes (high U/S), only 15 percent thought their institutions had had no role in their selection. Of those at the low end of both indexes (low U/S), 44 percent thought their institutions had had no role.

Planning. There was a substantial improvement indicated in the amount of planning in the programs of the more recent trainees. There was also increased trainee satisfaction with their training plans. This area, however, is still considered one of the important weaknesses in CIAT programs by both staff and trainees.

Training. The trainees indicated they would prefer more orientation on their arrival at CIAT, especially to the programs and objectives of the institution as a whole and to its personnel and physical plant. Many would like to see more direct involvement with the smaller farmers. The use of some junior staff in training roles seems to have been beneficial for both the trainees and these staff members and well received by the trainees.

The trainees were generally very satisfied with the length and level of training. They most commonly indicated the lack of a specific training plan as the greatest obstacle to getting the most out of it, followed by lack of adequate personal relationship with the supervisor.

Practical experience was by far the dominant choice among all trainees as the most valuable aspect of the training period. A year in the field seemed to generate an increasing appreciation of the practical experience at CIAT as the most valuable part of the training period.

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one form of in-service program within their institu-
ns in which former trainees are now occupied
stitutions, 67 percent; universities and
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Post-CIAT Activities. About half the former trainees have received some further training, most in some form of in-service program within their institutions. The types of institutions in which former trainees are now occupied include: government agricultural institutions, 67 percent; universities and colleges, 17 percent; agro-business, 11 percent; banks or credit institutions, 6 percent.

The trainees gave a high evaluation of the opportunity while at CIAT to meet other workers from throughout the region. Ninety-three percent indicate they have since had some contact with such new acquaintances and 74 percent of these were to some extent professional in nature.

Followup. The high frequency, in comparison to the average for all trainees, of contact between trainees of the high U/S group with CIAT staff coupled with the high incidence reported by these individuals of receiving positive action on their requests suggests a significant influence of followup on high ratings in both satisfaction with, and utilization of, training. Making available more technical information materials is the service former trainees most want CIAT to expand.

Utilization. In estimating the degree to which they believe they are applying their training in their work, 59 percent indicated extensively, 27 percent said moderately, 10 percent thought little was applicable and 4 percent none. Those giving little or none included some dissatisfied with training and others in activities where their training is superfluous. Ninety-two percent felt they had multiplied the effect of their training to a moderate or large extent.

The utilization rating index formed from several relevant questions described 74 percent of former trainees as high utilizers, 22 percent as moderate utilizers and 4 percent as low utilizers. This was also part of a combined utilization/satisfaction index (U/S).

Former trainees falling into the high or low utilization/satisfaction groups were widely spread through the various training programs and commodity groups; those sections that have had the most trainees have had some trainees in high and some in low U/S groups.

