

PN-ABA-376

**Zambia**  
**Weed Management**  
**Course**

**1983**

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## Capsule Summary

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ZAMBIA WEED MANAGEMENT COURSE

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Mt. Mukulu Research Station, Chilanga, Zambia

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December 12-23, 1983

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Sponsored and/or supported in part by:

Department of Agriculture, Republic of Zambia

Swedish International Development Authority

Food and Agriculture Organization

United Nations Development Program

Action Program for Improved Plant Protection

U.S. Agency for International Development

International Plant Protection Center,

Oregon State University

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## Executive Summary

A group of international organizations collaborated to organize and support a 2-week national weed management short course at Chilanga, Zambia during December 1983.

Twenty-two extension-oriented participants received training in a variety of weed management topics. Each participant also received a collection of literature and equipment.

Participant feedback was positive and contained suggestions for improving future courses.



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*Participants, during a field tour, viewed weed control in citrus.*

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## Narrative Summary

### Background

For 8 years, R. Vernon served as a research agronomist and weed management specialist in Zambia. He assisted in the organization, implementation, and publication of weed management research and also began to formulate plans for a national weed management training course.

In September 1982, the FAO/United Nations Development Program's Action Programme for Improved Plant Protection convened a meeting in Rome (Italy). One of the meeting's fundamental conclusions was that steps were needed to strengthen weed management in Africa. The meeting generated recommendations that several avenues of action be pursued. The short term training course was suggested as one method of conveying basic information about weed management and weed control research principles to selected government workers.

FAO, the UNDP Action Programme, and the International Plant Protection Center agreed to join forces to support a course in

Zambia. The combined cooperative effort provided additional resources and precipitated an expanded course over that originally envisioned with more instructors, publications, and equipment involved.

### Course Objectives

An intensive 2-week train-the-trainers course was designed to: provide selected individuals the basic knowledge, experience, confidence, and materials to conduct follow-up training programs in the regions where they are assigned.

### The Course

A combination of classroom lectures, hands-on field exercises, and tours was presented to a group of 22 participants brought to the Mount Mukulu Research Station, Chilanga, during December 12-23, 1983.

The topics covered and activities conducted were:

- 1) weeds: definitions and costs
- 2) weeds: identification and collection
- 3) weed-crop competition
- 4) weed control methods
- 5) weed biology
- 6) herbicides and safety
- 7) herbicide calculations
- 8) sprayers: introduction
  - : operations
  - : calibration
- 9) herbicides: soil acting
  - : foliar acting
  - : factors affecting
  - : formulations
- 10) provincial weed problems
- 11) weed control recommendations
- 12) socioeconomics of small farm weed control
- 13) extension to the farmer
- 14) running a provincial weed management course
- 15) new methods of weed control
- 16) practical field exercises
- 17) field trips to large and small farms
- 18) presentations by herbicide suppliers:
  - Shell Chemicals (Zambia) Ltd.; Ciba-Geigy; Hoechst

Ltd. Zambia; ICI (Zambia) Ltd.; and National Agricultural Marketing Board.

Examinations were given to participants at the commencement of the course and again at its conclusion so that participants could monitor their own progress.

W.M. Chibasa, Assistant Director of Agriculture (Research), Zambia, chaired the opening ceremony. The opening address was presented by R. Mulele, Assistant Director of Agriculture (Extension). Certificates of successful course completion were presented to each participant at closing ceremonies chaired by N.E. Mumba, Director of Agriculture.

#### Materials Provided

A selection of publications and equipment was provided as follows.

To each participant:

1 solar-powered pocket calculator

1 clipboard

1 Field Guide to Weeds of Zambia, by R. Vernon

1 Weed Control

Recommendations, by R.

Vernon

1 Weed-Crop Competition, by

R.L. Zimdahl

1 Small Farms Weed Control

Bibliography, by

J.A. Compton

Miscellaneous weed literature

To nine provincial delegations  
and training institutes -

1 lever-operated knapsack  
sprayer

1 water container, plastic

1 x 250ml graduated cylinder

1 stop watch

1 triple beam balance

1 measuring tape

1 Weed Science Principles, by

W.P. Anderson

1 plant press

1 spanner, adjustable

1 screw driver, star

1 screw driver, flat

1 pair pliers



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*Participants took part in a field practical using a lever-operated knapsack sprayer.*

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# Participants

Twenty-two participants were selected to represent both the important agricultural regions of the country as well as a diversity of governmental organizations within those regions. The individuals also were chosen because of being in a position to extend information obtained at the course to others in their specific region of Zambia. All participants, with one exception, were senior extension or training staff in government organizations.

The participants were:

Roger Banda  
Crop Husbandry Officer  
P.O. Box 42, Choma

Chrispin T. Chanda  
Horticultural Officer  
P.O. Box 410018, Kasama

Daudi M. Chikoye  
Practical Instructor  
Natural Resources Development  
College  
P.O. Box CH 99, Lusaka

Peter M. Chilambo  
Horticulturalist  
P.O. Box 510046, Chipata

Vincent L. Chirwa  
Acting Extension Training Officer  
P.O. Box 510046 Chipata

Kingston Chisenga  
Acting Extension Officer  
P.O. Box 710072, Mansa

Howard B. Chishala  
Lecturer  
P.O. Box 525, Kalulushi

Cornelius Kalonga  
Farm Management Officer  
P.O. Box 42, Choma

Mestone Kapembwa  
Crop Husbandry Officer  
P.O. Box 32252, Lusaka

Christopher W. Lubasi  
Chief Crop Husbandry Officer  
P.O. Box 50291, Lusaka

Adrian J. Mangisi  
Crop Husbandry Officer  
P.O. Box 410018, Kasama

Walter A. Mubiona  
Crop Husbandry Officer  
P.O. Box 710072, Mansa

Joachim M. Mulundano  
Farm Management Officer  
P.O. Box 410018, Kasama

Newton I. Musopelo  
Acting Project Coordinator  
P.O. Box 81110, Kabwe

Shirley H. Ng'andu  
Horticultural Officer  
P.O. Box 32252, Lusaka

Charles Nkhoma  
Weed Research Agronomist  
Mount Mukulu Research Station  
P. Bag 7, Chilanga

Phillip Simbule  
Practical Instructor  
Kalulushi Farm College  
P.O. Box 260005, Kalulushi

Lingston P. Singogo  
Crop Husbandry Officer  
P.O. Box 80434, Kabwe

Petros C. Watambwa  
Acting Extension Training Officer  
P.O. Box 110041, Solwezi

Jashbhai D. Patel  
Crop Husbandry Officer  
P.O. Box 510046, Chipata

Mohammad A. Salam  
Crop Husbandry Officer  
P.O. Box 70232, Ndola

Dickson Shambana  
Asst. District Agricultural Officer  
P.O. Box 7, Kacma



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*During a field trip participants and instructors discussed weed control in tobacco.*

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## Instructors

A 5-person group of instructors combined many years of weed management research and training experience in Africa and other developing areas. The course was conducted in a manner that allowed all of the core instructors to be present at all events thereby encouraging an interchange of experiences and ideas on each topic.



The instructors were:

R. Vernon  
Agronomist/Weed Management  
Specialist  
Rowan, Owlsmoor Road  
Owlsmoor, Camberley  
Surrey GU15 4SN / U.K.  
(until May 1983, weed control  
specialist, Mt. Mukulu Research  
Station, Zambia)

P.J. Terry  
Weed Control Specialist  
Weed Research Organisation  
Yarnton, Oxford OX5 1PF / U.K.

A. Stroud  
Weed Control Specialist  
P.O. Box 62084  
Nairobi / Kenya

J.A. Compton  
Developmental Agriculturalist  
c/o Rua John Issa, 267  
Maputo / Mozambique

L.C. Burrill  
Weed Control Specialist  
International Plant Protection  
Center  
Oregon State University  
Corvallis, OR 97331 / USA

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*L. C. Burrill, representing IPPC,  
served as one of the course's  
instructors.*

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*It is hereby certified that*

.....  
*having satisfactorily participated in the*

## **WEED MANAGEMENT SHORT COURSE**

*conducted at Mount Makulu Research Station,  
Chilanga, Zambia*

*December 12 to 23, 1983,  
is duly awarded this*



# ***Certificate of Achievement***

.....  
**U. Mwila**  
Minister of  
Agriculture &  
Water Affairs

.....  
**N. E. Mumba**  
Director of  
Agriculture

.....  
**M. R. Mulele**  
Assistant Director of  
Agriculture (Extension)

.....  
**R. Vernon**  
Course Leader

.....  
**L. C. Burtt**  
International Plant  
Protection Center

Financial support was provided, in part, by the Food and Agriculture Organization of the United Nations and the United Nations Development Program.



## Feedback

Participants were encouraged to prepare an evaluation of the course. Four groups were formed and each prepared separate presentations given by a spokesman. Participants were requested to consider any future national course and mention what should be retained, what should be changed, and what new ideas might be added.

All groups expressed appreciation of the course. Items/aspects specified as particularly useful were:

1. Instructors' involvement throughout the course;
2. group discussions--provided a free exchange of ideas;
3. publications given out--these were very helpful;



4. classroom activities closely related to field practicals;
5. weed identification; and,
6. weed control methods with chemicals not being the only answer.

8. Timing of course: better to have it later in the season, perhaps in March, when weeds in the field would have grown.\*

9. Programme too tight:
  - a. a longer course may be needed;
  - b. too much concentration of lectures in first week.

Changes suggested for future courses:

7. Herbicide application:
  - a. tractor mounted sprayers should be included-- mentioned by all 4 groups; too much emphasis on knapsack sprayers.
  - b. where knapsack sprayers were dealt with, models on sale in the country should be considered.\*
  - c. more time needed on calibration; method with stopwatch too difficult for farmers.\*\*

10. Crop recommendations (weed control in) needed more time.

\* These factors had been recognized before the course but had proved unavoidable;

\*\* A simpler method was introduced in the course after this review session.

These points concerned national courses. It was suggested by participants that these should be followed by decentralized courses in the province, at Farm Institutes for District staff and at the District Farmer Training Centres for commodity demonstrators, block supervisors, and agricultural supervisors. Such provincial courses need not be so general and wide ranging as a national course, but may need to be preceded by local assessments of farming systems and weed problems.

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*Course participants, along with course organizer and senior instructor R. Vernon (left foreground), inspected weed control in transplanted tomatoes.*

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## Linkage

Organizers and instructors agreed that the list of organizations supporting this course illustrated an important concept. When several groups can combine their resources in an effective manner to use the strengths of each group, the best possible training course can be realized.

It was felt that multi-organization, international support

and sponsorship serves as a viable and constructive model for future training activities.



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*During closing ceremonies participants received Certificates of Achievement.*

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