Introduction:

This quarter saw the completion of all training programs and activities that were approved, funded and scheduled for delivery via the following contractual mechanisms:

A) Year Two (FY 2004) of the four-year Cooperative Agreement for “Sustainable Development of Drylands in Asia and the Middle East” between the IALC and USAID/ANE. This agreement provided a total of $367,464 in core support for the Afghanistan-Pakistan component.

B) Job Order #25 “Agriculture Sector Training in Afghanistan” which was funded by RAMP (Rebuilding Agricultural Markets in Afghanistan Program) to provide $400,000 in supplemental funding. This Mission-level funding allowed us to carry out all training programs that were envisioned for this component during the FY 2004 period. This comprehensive training program plan was elaborated in the Cooperative Agreement Renewal, submitted in September 2003.

In addition to the completion of FY 2004 activities, time was also given to forward planning. An FY 2005 work plan was prepared which, when combined with the FY 2005 budget, will constitute the Scope of Work and justify the continuation of core funding for this component. The next proposal, requesting $648,200 in supplemental funding from RAMP to support calendar year 2005 training programs, is in near-final form and will be submitted next month.

Activities of this period (July 1 to September 30):

The last four short courses in the FY 2004 program of offerings were completed during this period. Courses titled “Animal Nutrition” and “Integrated Pest Management” were held in Peshawar during the period June 14 through July 12. The previous quarter’s report provided course outlines and lists of participants. The summaries of course evaluations that were completed by participants are attached to this report.

The other two courses held during this quarter were “Preservation of Fruits and Vegetables” (July 16 to August 13 at the Agricultural Research Institute, Tarnab, Peshawar) and “Post-Harvest Management and Marketing Skills” which was conducted at the NWFP-AU, Peshawar during this same period. Outlines, participant lists and evaluation summaries for these last two courses are attached to this report. Completion of these courses has brought us to a total of eleven courses delivered since the August
2003 inception of these training activities, reaching a total of 229 participants who were drawn from all segments and levels of the agriculture sector in Afghanistan.

Another significant activity was the enrollment of ten Afghans in M.Sc. programs at the NWFP-AU. They arrived on campus August 12 and are taking a full load of courses during the fall semester. These long-term trainees were previously serving as instructors in the Faculties of Agriculture at Kabul and Nangarhar universities. Their names and fields of study were given in the previous quarter’s report.

The previous quarterly report also described progress that was being made on specialized small group training, which is an integral part of the long-range process of establishing “twinning” relationships between research stations in these neighboring countries. After seven Afghan scientists had been sent to two selected stations in the NWFP-AU system for structured short-term experiences, these research-oriented training programs were put on hold due to cash-flow problems, i.e., difficulty in transferring the supplemental funding from RAMP-Kabul to IALC headquarters.

To provide a more detailed description of this training approach, a report of activities completed at the Cereal Crops Research Institute (CCRI) by four scientists from the Shesham Bagh (Nangarhar) and Darul Amaan (Kabul) research stations is included as an attachment. These reports describe training that was conducted during the first two “calls” or “rounds” of four days each. This specialized training program will consist of four visits to CCRI by this group of four maize researchers during the cropping season. Their third visit took place during the September 6-9 period. That report is being prepared. Three other scientists from these same two stations were sent to ARS-Mingora for one week of cooperative research on vegetable crop production. Similar training programs have already been arranged for additional horticulturists and soil scientists. These programs will be delivered as soon as the cash flow problems are resolved.

The difficulty in moving supplemental RAMP funds from Kabul to Arizona, then through UIUC and out to the Field Office, has created serious deficits in our accounts. While this is not good business practice, we did not want to cancel short courses that had been announced, staffed by the NWFP-AU and filled by Afghan organizations that nominate participants for these courses. Nor did we want to cancel the M.Sc. programs of long-term trainees who had been selected by their universities and accepted by the NWFP-AU for August 2004 enrollment in post-graduate study.

The Afghanistan-Pakistan Training (APT) Group met on July 28 and made significant progress in taking on their role as an advisory body, as well as being a source of expertise in carrying out some of the activities that are envisioned for this component. Having met for the first time in January 2004, the APT Group will continue to meet twice each year to provide input. More details on this group can be found in Quarterly Report VI. The agenda for the July 28 meeting is attached. At the conclusion of the meeting a strong vote of confidence was given to this component, with especially high praise for the Field Office Director’s performance.
Although we have worked together for 20 years, progress was made in re-formalizing the relationship between the NWFP-AU and the Illinois universities (UIUC and SIUC). This relationship had previously been formalized via a Memorandum of Understanding (MOU) which was executed in June 1994, at the conclusion of the TIPAN project. Our request to renew and extend the earlier agreement for a five year period of time was placed on the agenda for the July 10 meeting of the NWFP-AU syndicate, i.e., Faculty Senate. The renewal was approved and the Vice Chancellor was authorized to sign a revised MOU. When the MOU is fully executed, a Letter of Agreement will be drawn up between the UIUC Field Office and the Vice Chancellor’s Office. This agreement will outline and formalize procedures being followed in delivery of training programs by the NWFP-AU.

Activities Planned for the Following Quarter (October-November-December):

The major challenge we face is transfer of the supplemental RAMP funding, so our accounts can be brought out of deficit and training activities resumed. Although the previous quarterly report states that this transfer was “In Process”, the funds have still not left Kabul. A chronology of events may be useful as we continue to deal with this problem: 1) Our proposal, requesting $400,000 to supplement our core funding, was submitted in January 2004, 2) The proposal was approved by AID-Kabul in February and sent to RAMP-Kabul for their action, 3) In late March, we were informed that our submission had been approved by RAMP and that funds were available, 4) During April and May the Field Office Director worked with RAMP contracting personnel to provide documentation on past disbursements and anticipated expenditures, justifying the release of funds, 5) In late May, the RAMP-Kabul Grants and Contracts Manager requested banking information that would allow them to transfer a $300,000 installment to the University of Arizona, for subsequent transfer to UIUC and the Field Office in Peshawar, 6) This required negotiation of a Grant Agreement between the University of Arizona (for IALC) and RAMP. That agreement has been signed by both parties and returned to Kabul. The credibility of our Field Office Director and our Illinois institutions have allowed us to continue training programs while waiting patiently for financial relief.

Plans are being made for a TDY by Myers and Santas during the first half of November, with one week spent in Pakistan and one week in Afghanistan. Many changes have taken place and much progress has been made since our visit to the field one year ago. We anticipate the proposal for calendar year 2005 supplemental funding will have been submitted to RAMP-Kabul prior to our visit, so the centerpiece of our time in Kabul will likely consist of work with RAMP personnel to discuss and reach agreement on training activities they will support. Our proposal will include twenty M.Sc. degree starts in January 2005. If this portion of the proposal is approved by RAMP, we will need to move quickly on selection of these degree participants. They will likely be drawn from universities throughout Afghanistan that offer instruction in the agricultural sciences as well as from selected research stations and divisions of the Ministry of Agriculture and Animal Husbandry. If time and security conditions permit, we plan to visit Balkh University in Mazar-e-Sharif to discuss their training needs.
COURSE EVALUATION
ANIMAL NUTRITION-0904
HELD AT NWFP AGRICULTURAL UNIVERSITY, PESHAWAR
June 14 through July 12, 2004
Legend:  A = Strongly Agree, B = Agree, C = Disagree, D = Strongly Disagree, E = No Opinion
No. of Respondents = 20

<table>
<thead>
<tr>
<th>No.</th>
<th>Statement</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The course was relevant to your professional responsibilities.</td>
<td>16</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>The course improved your knowledge to a great extent.</td>
<td>8</td>
<td>12</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Enough time was given for classroom lecture/discussion.</td>
<td>12</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Enough time was given for field visits.</td>
<td>13</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Recent developments in research and latest knowledge of the subject were imparted.</td>
<td>10</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Problems and issues, which you usually encounter during your professional duties, were discussed during the course.</td>
<td>8</td>
<td>12</td>
<td>-</td>
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</tr>
</tbody>
</table>

TRAINING METHODOLOGY

<table>
<thead>
<tr>
<th>No.</th>
<th>Statement</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Lectures were informative and very helpful in communication of knowledge.</td>
<td>17</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>Group discussions and consultations with instruction provided an excellent opportunity for sharing of experience.</td>
<td>11</td>
<td>9</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Field visits provided the chance to see the problems as discussed in the classroom.</td>
<td>13</td>
<td>5</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Teaching Methodology was effective.</td>
<td>14</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Group discussions are more helpful than the lecture.</td>
<td>8</td>
<td>9</td>
<td>2</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>6.</td>
<td>Course duration was about right.</td>
<td>7</td>
<td>10</td>
<td>1</td>
<td>-</td>
<td>2</td>
</tr>
</tbody>
</table>

TRAINERS’ PERFORMANCE
Give response about the trainer of the course through following statements:

<table>
<thead>
<tr>
<th>No.</th>
<th>Statement</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>He has good knowledge of the subject.</td>
<td>15</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>He presented the subject matter nicely and spoke clearly.</td>
<td>13</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>He has the ability to relate subject matter with solutions of existing problems.</td>
<td>12</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td>He answered trainees’ questions satisfactorily.</td>
<td>16</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>His overall performance was good.</td>
<td>15</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Suggestions for further improvement (if any):

- One month of course duration was not sufficient. It should be increased.
- The course, teaching material and practical work was “the best”. We are very much satisfied from Professors, researchers and technicians of NWFPAU. The course increased our knowledge and experience.
- Practical and laboratory work should be increased. Enough time should be given to participants to practice his or herself all laboratory analytical work.
- The course was very useful, teachers were expert and have a good knowledge and we have taken a lot of things in a short period of time.
- We have completed one-year study work in one month.
- If possible, the teaching material should be translated in Dari/Pushtu languages.
- Relevant technical books should be provided to the participants.
- M.Sc. program for B.Sc faculty members of Afghan Universities should be organized.
COURSE EVALUATION
INTEGRATED PEST MANAGEMENT-0604
HELD AT NWFP AGRICULTURAL UNIVERSITY, PESHAWAR
June 14 through July 12, 2004
Legend:  A = Strongly Agree,  B = Agree,  C = Disagree,  D = Strongly Disagree, E = No Opinion
No. of Respondents= 20

<table>
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<tr>
<th>No.</th>
<th>The course was relevant to your professional responsibilities.</th>
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</tr>
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<tr>
<td>1</td>
<td></td>
<td>9</td>
<td>11</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>The course improved your knowledge to a great extent.</td>
<td>4</td>
<td>16</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Enough time was given for classroom lecture/discussion.</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>Enough time was given for field visits.</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>9</td>
<td>-</td>
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<table>
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<tr>
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<td>1. Lectures were informative and very helpful in communication of knowledge.</td>
<td>4</td>
<td>16</td>
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<td>14</td>
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<td>-</td>
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<tr>
<td>3. Field visits provided the chance to see the problems as discussed in the classroom.</td>
<td>7</td>
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<tr>
<td>4. Teaching Methodology was effective.</td>
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<tr>
<td>5. Group discussions are more helpful than the lecture.</td>
<td>6</td>
<td>9</td>
<td>4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6. Course duration was about right.</td>
<td>1</td>
<td>6</td>
<td>5</td>
<td>7</td>
<td>1</td>
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</table>

<table>
<thead>
<tr>
<th>TRAINERS’ PERFORMANCE</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. He has good knowledge of the subject.</td>
<td>9</td>
<td>11</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2. He presented the subject matter nicely and spoke clearly.</td>
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<td>-</td>
</tr>
<tr>
<td>5. His overall performance was good.</td>
<td>5</td>
<td>14</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>
Suggestions for further improvement (if any):

- Satisfied with theoretical part, but practical part should be increased. After each lecture, practical work at Lab should be carried out.
- Ratio of male and female should be considered. (There was no female participant.)
- Academic level of the participants should be the same.
- Issues of the courses must be related to Afghanistan situation.
- Young lecturers of the Faculty of Agriculture of Afghanistan Universities should be encouraged for M.Sc. and Ph.D. program at NWFAPU. All the Universities of Afghanistan should have an equal opportunity for long-term degree training program.
- Textbooks should be given to participants.
- The course increased our knowledge in both practical and theoretical aspects.
- Training material should be translated in Dari language.
- Some of the lectures were not relevant to plant protection but concerned agronomy or extension
- One month of course duration was not sufficient. It should be increased to three months.
- At the end, a representative of the class I highly appreciate the efforts of Dr. Farmanullah.
<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Lecture 8.00-10.00 AM</th>
<th>Tea break 10.00– 10.30</th>
<th>Practical 10.30-2.30</th>
<th>Resource Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.7.04</td>
<td>Friday</td>
<td>Arrival of the participants at Agri. University Peshawar, Registration, Inauguration by Vice Chancellor. Tea break, Short trip to ARI, Tarnab. Introduction to Food Machinery &amp; Equipments.</td>
<td></td>
<td></td>
<td>Adam Khan</td>
</tr>
<tr>
<td>17.7.04</td>
<td>Saturday</td>
<td>Introduction and Importance of Food Preservation Preparation of Mango Squash</td>
<td>-do-</td>
<td>-do-</td>
<td>Adam Khan</td>
</tr>
<tr>
<td>18.7.04</td>
<td>Sunday</td>
<td>Holiday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.7.04</td>
<td>Monday</td>
<td>Preparation of Pomegranate and Guava Syrup</td>
<td>-do-</td>
<td>-do-</td>
<td>Adam Khan</td>
</tr>
<tr>
<td>20.7.04</td>
<td>Tuesday</td>
<td>Preparation of Strawberry &amp; Lemon/Orange Squashes</td>
<td>-do-</td>
<td>-do-</td>
<td>Adam Khan</td>
</tr>
<tr>
<td>21.7.04</td>
<td>Wednesday</td>
<td>Preparation of Apple Jam</td>
<td>-do-</td>
<td>-do-</td>
<td>Adam Khan</td>
</tr>
<tr>
<td>22.7.04</td>
<td>Thursday</td>
<td>Preparation of Apricot and Plum Jam</td>
<td>-do-</td>
<td>-do-</td>
<td>Adam Khan</td>
</tr>
<tr>
<td>23.7.04</td>
<td>Friday</td>
<td>Preparation of Strawberry Jam</td>
<td>-do-</td>
<td>-do-</td>
<td>Adam Khan</td>
</tr>
<tr>
<td>24.7.04</td>
<td>Saturday</td>
<td>Preparation of Tomato Puree and Ketchup</td>
<td>-do-</td>
<td>-do-</td>
<td>Nazir Khan</td>
</tr>
<tr>
<td>25.7.04</td>
<td>Sunday</td>
<td>Holiday</td>
<td></td>
<td></td>
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<tr>
<td>26.7.04</td>
<td>Monday</td>
<td>Preparation of Soy Milk and Other Products</td>
<td>-do-</td>
<td>-do-</td>
<td>Jan M. Khan</td>
</tr>
<tr>
<td>27.7.04</td>
<td>Tuesday</td>
<td>Preparation of Grape Juice &amp; Syrup</td>
<td>-do-</td>
<td>-do-</td>
<td>Jan M. Khan</td>
</tr>
<tr>
<td>28.7.04</td>
<td>Wednesday</td>
<td>Preparation of Peach Canned &amp; Preserve</td>
<td>-do-</td>
<td>-do-</td>
<td>Jan M. Khan</td>
</tr>
<tr>
<td>29.7.04</td>
<td>Thursday</td>
<td>Preparation of Pear Jam, Preserve/Canned</td>
<td>-do-</td>
<td>-do-</td>
<td>Jan M. Khan</td>
</tr>
<tr>
<td>Date</td>
<td>Day</td>
<td>Activity Description</td>
<td>-do-</td>
<td>-do-</td>
<td>Name</td>
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</tr>
<tr>
<td>30.7.04</td>
<td>Friday</td>
<td>Preparation of Almond and Peanut Syrup</td>
<td>-do-</td>
<td>-do-</td>
<td>Nazir Khan</td>
</tr>
<tr>
<td>31.7.04</td>
<td>Saturday</td>
<td>Preparation of Apple Syrup and preserved</td>
<td>-do-</td>
<td>-do-</td>
<td>Nazir Khan</td>
</tr>
<tr>
<td>1.8.04</td>
<td>Sunday</td>
<td>Holiday</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2.8.04</td>
<td>Monday</td>
<td>Preparation of Apple/Guava Jelly</td>
<td>-do-</td>
<td>-do-</td>
<td>Nazir Khan</td>
</tr>
<tr>
<td>3.8.04</td>
<td>Tuesday</td>
<td>Preparation of Fruit Pickles</td>
<td>-do-</td>
<td>-do-</td>
<td>Dr. Badshah Wahid</td>
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<tr>
<td>4.8.04</td>
<td>Wednesday</td>
<td>Preparation of Vegetable Pickle</td>
<td>-do-</td>
<td>-do-</td>
<td>Dr. Badshah Wahid</td>
</tr>
<tr>
<td>5.8.04</td>
<td>Thursday</td>
<td>Drying of Fruits like Apricot, Peaches, Mulberry, etc.</td>
<td></td>
<td></td>
<td>Dr. Badshah Wahid</td>
</tr>
<tr>
<td>6.8.04</td>
<td>Friday</td>
<td>Drying of Vegetable like Tomato, Onion, Bitter Gourd, etc.</td>
<td></td>
<td></td>
<td>Dr. Badshah Wahid</td>
</tr>
<tr>
<td>7.8.04</td>
<td>Saturday</td>
<td>Preservation of Mushroom by Drying &amp; Freezing</td>
<td>-do-</td>
<td>-do-</td>
<td>Dr. Badshah Wahid</td>
</tr>
<tr>
<td>8.8.04</td>
<td>Sunday</td>
<td>Holiday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.8.04</td>
<td>Monday</td>
<td>Preservation of Mushroom by Canning</td>
<td>-do-</td>
<td>-do-</td>
<td>Dr. Badshah Wahid</td>
</tr>
<tr>
<td>10.8.04</td>
<td>Tuesday</td>
<td>Preparation of Jam from Dried Apricots</td>
<td>-do-</td>
<td>-do-</td>
<td>Dr. Badshah Wahid</td>
</tr>
<tr>
<td>11.8.04</td>
<td>Wednesday</td>
<td>Preparation of Chilli and Tomato Sauces</td>
<td>-do-</td>
<td>-do-</td>
<td>Dr. Badshah Wahid</td>
</tr>
<tr>
<td>12.8.04</td>
<td>Thursday</td>
<td>Preparation of Fruit Nectar</td>
<td>-do-</td>
<td>-do-</td>
<td>Dr. Badshah Wahid</td>
</tr>
<tr>
<td>13.8.04</td>
<td>Friday</td>
<td>Packing/Grading/Labeling/Marketing and Quality Control Review / Discussion/Evaluation.</td>
<td>-do-</td>
<td>-do-</td>
<td>Dr. Badshah Wahid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distribution of Certificates</td>
<td></td>
<td></td>
<td>Adam Khan</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>Director General Tarnab</td>
</tr>
</tbody>
</table>
List of Participants
Course No: 0504 Preservation of Fruits and Vegetables
(July 15 through August 16, 2004)

<table>
<thead>
<tr>
<th>No</th>
<th>Name</th>
<th>Father Name</th>
<th>Date of Birth</th>
<th>Age In Years</th>
<th>Discipline</th>
<th>Govt. Department/NGOs/Universities</th>
<th>Duty Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Zabiullah</td>
<td>Abdu Rahman</td>
<td>1980</td>
<td>24</td>
<td>12th grade</td>
<td>Min of Agri &amp; Animal Husb</td>
<td>Kabul Province</td>
</tr>
<tr>
<td>2</td>
<td>Abdulsami</td>
<td>Abdul Qadeer</td>
<td>1971</td>
<td>33</td>
<td>12th grade</td>
<td>Min of Agri &amp; Animal Husb</td>
<td>Kabul Province</td>
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<tr>
<td>3</td>
<td>S. Noor Ahmadshah</td>
<td>Saydmir Ahmad</td>
<td>1956</td>
<td>48</td>
<td>Farmer</td>
<td>Min of Agri &amp; Animal Husb</td>
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<tr>
<td>4</td>
<td>Mohammad Saleem</td>
<td>Temoorshah</td>
<td>1956</td>
<td>48</td>
<td>B.Sc. Agri Fac Kabul</td>
<td>Min of Agri &amp; Animal Husb</td>
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<tr>
<td>5</td>
<td>Noor Mohammad</td>
<td>Atamohammad</td>
<td>1959</td>
<td>45</td>
<td>Farmer</td>
<td>Min of Agri &amp; Animal Husb</td>
<td>Kabul Province</td>
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<tr>
<td>6</td>
<td>Abdul Qadir</td>
<td>Abdul Hakim</td>
<td>1971</td>
<td>31</td>
<td>12th grade</td>
<td>Min of Agri &amp; Animal Husb</td>
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<tr>
<td>7</td>
<td>Mohammad Aslam</td>
<td>Mohammad Akber</td>
<td>1959</td>
<td>45</td>
<td>Farmer</td>
<td>Min of Agri &amp; Animal Husb</td>
<td>Kabul Province</td>
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<td>8</td>
<td>Abdul Rahim</td>
<td>Abdul Ahmad</td>
<td>1969</td>
<td>35</td>
<td>Farmer</td>
<td>Min of Agri &amp; Animal Husb</td>
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<tr>
<td>9</td>
<td>Sayd Ismail</td>
<td>Sayd Mirza</td>
<td>1976</td>
<td>28</td>
<td>Farmer</td>
<td>Min of Agri &amp; Animal Husb</td>
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<tr>
<td>11</td>
<td>Abdul Manan</td>
<td>Khadim Hussain</td>
<td>1971</td>
<td>33</td>
<td>B.Sc. Agri Fac Balkh Uni</td>
<td>Agri Fac Alberoni University</td>
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<tr>
<td>12</td>
<td>Zamaryali (Tani)</td>
<td>Saadi</td>
<td>1975</td>
<td>29</td>
<td>B.Sc. Agri Fac Kanda Uni</td>
<td>Agri Fac Kandahar University</td>
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<tr>
<td>13</td>
<td>Najibullah</td>
<td>Ahmadullah</td>
<td>1978</td>
<td>26</td>
<td>B.Sc. Agri Fac Kanda Uni</td>
<td>Agri Fac Kandahar University</td>
<td>Kandahar Province</td>
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<tr>
<td>14</td>
<td>Reshad Ahmad</td>
<td></td>
<td></td>
<td></td>
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<td>B.Sc. Agri Fac Nang Uni</td>
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<tr>
<td>15</td>
<td>Zarer</td>
<td>Abdul Ghani</td>
<td>1976</td>
<td>28</td>
<td>B.Sc. Agri Fac Balkh Uni</td>
<td>Agri Fac Balkh University</td>
<td>Balkh Province</td>
</tr>
<tr>
<td>16</td>
<td>Abdul Razaq</td>
<td>Haji Pida Gul</td>
<td>1953</td>
<td>51</td>
<td>12th grade Agriculture</td>
<td>Mercy Corps Office</td>
<td>Helman Province</td>
</tr>
<tr>
<td>17</td>
<td>Rahima Noori</td>
<td></td>
<td>1969</td>
<td>35</td>
<td>B.Sc. Agri Fac Kabul Uni</td>
<td>Agri Fac Kabul University</td>
<td>Kabul Province</td>
</tr>
<tr>
<td>18</td>
<td>Sayed Hakim</td>
<td>Najafi</td>
<td>1976</td>
<td>28</td>
<td>12th grade</td>
<td>Min of Agri &amp; Animal Husb</td>
<td>Kabul Province</td>
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<tr>
<td>19</td>
<td>Sayed Ali Ahmad</td>
<td>Ghulam Abbas</td>
<td>1983</td>
<td>22</td>
<td>12th grade</td>
<td>Min of Agri &amp; Animal Husb</td>
<td>Maidon Province</td>
</tr>
<tr>
<td>20</td>
<td>M. Usman Karemi</td>
<td>Ali Ahmad</td>
<td>1972</td>
<td>32</td>
<td>B.Sc. Agri Fac Herat Uni</td>
<td>Agri Fac Herat University</td>
<td>Heart Province</td>
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Faculty of Agri Kabul University = 1  Faculty of Agri Nangarhar University = 1  Balkh University = 1  Herat University = 1
Ministry of Agriculture and Animal Husbandry = 12  Faculty of Agri Kandahar = 2  Aberoni University = 1  Mercy corps = 1
Total participants for Course No: 0904= 1+1+1+1+12+2+1+1= 20
COURSE EVALUATION
PRESERVATION OF FRUITS AND VEGETABLES-0504
HELD AT AGRICULTURAL RESEARCH INSTITUTE, TARNAB, PESHAWAR
July 16 through August 13, 2004

Legend:  A = Strongly Agree, B = Agree, C = Disagree, D = Strongly Disagree, E= No Opinion
No. of Respondents= 20

<table>
<thead>
<tr>
<th>No.</th>
<th>The course was relevant to your professional responsibilities.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>17</td>
<td>3</td>
<td>-</td>
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<tr>
<td>2</td>
<td>The course improved your knowledge to a great extent.</td>
<td>15</td>
<td>5</td>
<td>-</td>
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<tr>
<td>3</td>
<td>Enough time was given for classroom lecture/discussion.</td>
<td>19</td>
<td>1</td>
<td>-</td>
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<tr>
<td>4</td>
<td>Enough time was given for field visits.</td>
<td>12</td>
<td>7</td>
<td>1</td>
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<tr>
<td>5</td>
<td>Recent developments in research and latest knowledge of the subject were imparted.</td>
<td>14</td>
<td>6</td>
<td>-</td>
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</tr>
<tr>
<td>6</td>
<td>Problems and issues, which you usually encounter during your professional duties, were discussed during the course.</td>
<td>17</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Lectures were informative and very helpful in communication of knowledge.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>14</td>
<td>6</td>
<td>-</td>
<td>-</td>
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<tr>
<td>2</td>
<td>Group discussions and consultations with instruction provided an excellent opportunity for sharing of experience.</td>
<td>17</td>
<td>3</td>
<td>-</td>
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<tr>
<td>3</td>
<td>Field visits provided the chance to see the problems as discussed in the classroom.</td>
<td>9</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>4</td>
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<tr>
<td>4</td>
<td>Teaching Methodology was effective.</td>
<td>15</td>
<td>5</td>
<td>-</td>
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<tr>
<td>5</td>
<td>Group discussions are more helpful than the lecture.</td>
<td>16</td>
<td>4</td>
<td>-</td>
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<tr>
<td>6</td>
<td>Course duration was about right.</td>
<td>16</td>
<td>4</td>
<td>-</td>
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</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>He has good knowledge of the subject.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<tbody>
<tr>
<td>1</td>
<td></td>
<td>18</td>
<td>2</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>2</td>
<td>He presented the subject matter nicely and spoke clearly.</td>
<td>12</td>
<td>8</td>
<td>-</td>
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<tr>
<td>3</td>
<td>He has the ability to relate subject matter with solutions of existing problems.</td>
<td>17</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>He answered trainees’ questions satisfactorily.</td>
<td>17</td>
<td>3</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>5</td>
<td>His overall performance was good.</td>
<td>17</td>
<td>3</td>
<td>-</td>
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</table>
Suggestions for further improvement (if any):

- Training material should be translated in Dari Language.
- Other courses like this should be offered.
- The only female participant in the Preservation of Fruits and Vegetable Course Ms. Rahima Noori from Faculty of Agriculture, Kabul University commented: “1: women should be invited in this course; 2) this course should be offered in Afghanistan, if training equipment are made available; 3) Now I will teach this course to other women in Afghanistan; 4) more courses like this be offered; 5) In the end I thank all teachers especially Dr. Qayyum”.
- Equipment should be provided to the participants.
- All participants should have the same profession.
Course Contents & Schedule-0804
(Summary)
Post-Harvest Management & Marketing Skills

Program for 1st Week (July 16 through July 24, 2004)
Date  16.07.04 through 24.07.04
Topic: Marketing: Concepts & Definitions
Lectures:
Marketing & Agricultural Marketing: Marketing of Perishable versus Nonperishable Products
Marketing Functions & Utilities
Market Structure & Performance
Marketing of Agricultural Produce: Some Special Features

Topic: Post-Harvest Technology - I
Lectures:
Post-Harvest Technology: An Introduction
Post-Harvest Management of Horticultural Crops & Foodgrains
Classification of Horticultural Produce: An Introduction
Post-Harvest Produce losses and Perishability-I
Post-Harvest Produce losses and Perishability-II
Post-harvest physiology of fresh produce
Post-Harvest Physiology of Climacteric/Non-Climacteric Fruits

Program for 2nd Week (July 26 through July 31, 2004)
Date  26.07.04 through 31.07.04
Topic: Post-Harvest Technology - II
Harvesting and field handling
Packing Places/Sheds
Packaging of fruit, vegetables and root crops
Packaging materials
Packing & Packaging Technology: Some Recent Developments
Operations in packing of selected fruit and vegetables
Packaging materials in use & their suitability/unsuitability
Storage Principles, Practices & Structures
Warehouse Management: Inventory Management; EOQ Concept
Transport/Transportation: Technological Development
Processing & Value-Addition
Commodity Marketing: Market Channels & Intermediaries
Stages in Commodity Marketing; Marketing of Fruits, Vegetables, Root-Crops, Foodgrains, Livestocks, Meat, Poultry, Eggs and Milk & Milk Products
Program for 3rd Week (Aug. 2 through Aug. 7, 2004)
Date 02.08.04 through 07.08.04
Topic: Marketing & Marketing Efficiency and Afghanistan
  Marketing Efficiency: Technical & Economic Efficiency; Definitions
  Improving Technical & Economic Efficiency: Ways & Means
  Structure-Conduct-Performance Paradigm: Efficiency Criteria
  Marketing Efficiency: Afghanistan’s scenario/Problems Identified
  Analyzing the Market: Market Research; Rapid Market Appraisal
  Afghanistan’s Resources & Products Mapping: Horticultural Crops,
      Cereal Crops, Foodgrains & Pulses, Livestocks & Livestock Products
Development of Marketing Plan: An Introduction
Analyzing Market Situation & Opportunities
Analyzing Market Situation & Opportunities for Afghanistan’s
      Horticultural Crops, Cereals/Foodgrain, Livestock & Livestock Products
Mass-vs-Target Marketing/Segmentation-Marketing

Program for 4th Week (Aug. 9 through Aug. 13, 2004)
Date 09.08.04 through 13.08.04
  Developing a Successful Marketing Strategy: Strategies for Individual
      Farmers-versus-Firms
  Market Entry & Marketing Strategies: General Marketing Strategies-
      versus-Entrepreneurial Marketing Strategies
  Developing Marketing Strategies for Afghanistan’s Horticultural Crops,
      Foodgrains & Pulses, Livestock & Livestock Products
  Managing the Marketing Mix – 4Ms
  New Product Development: For Domestic/Export Markets
  New Horticultural Products for Afghanistan’s Domestic & Export Markets
  Developing A Marketing Plan: Format
  Developing Marketing Plan for Afghanistan
  Developing Marketing Plan for Afghanistan’s Horticultural Crops
  Developing Marketing Plan for Afghanistan’s Foodgrains & Pulses
  Developing Marketing Plan for Afghanistan’s Livestock & Livestock Products
# Course Schedule - 0804

## Post-Harvest Management & Marketing Skills

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture/Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.07.04</td>
<td><strong>Inauguration Ceremony</strong>&lt;br&gt;10.00 AM-12.30 PM&lt;br&gt;Introduction: Course/Organization of the Course&lt;br&gt;Lecture: Marketing concepts&lt;br&gt;Marketing &amp; Agricultural Marketing: Marketing of Perishable versus Nonperishable Products</td>
</tr>
<tr>
<td>17.07.04</td>
<td>08.00-10.00 AM&lt;br&gt;Lecture: Marketing concepts&lt;br&gt;Marketing Functions &amp; Utilities; Market Structure &amp; Performance&lt;br&gt;10.30-12.00 AM&lt;br&gt;Lecture &amp; Group Work: Groups will prepare class presentations on Topics/Reading Materials provided, namely:&lt;br&gt;G-1: Marketing of Agricultural Produce: Some Special Features - I&lt;br&gt;G-2: Marketing of Agricultural Produce: Some Special Features - II&lt;br&gt;12.30-02.00 PM&lt;br&gt;Group Work:&lt;br&gt;Group work continues: Groups prepare class presentations.</td>
</tr>
<tr>
<td>19.07.04</td>
<td>08.00-10.00 AM&lt;br&gt;Class presentation &amp; discussion:&lt;br&gt;G-1: Marketing of Agricultural Produce: Some Special Features - I&lt;br&gt;G-2: Marketing of Agricultural Produce: Some Special Features - II&lt;br&gt;10.30-12.00 AM&lt;br&gt;Lecture:&lt;br&gt;Post-Harvest Technology: An Introduction&lt;br&gt;Post-Harvest Management of Horticultural &amp; Foodgrains&lt;br&gt;12.30-02.00 PM&lt;br&gt;Lecture:&lt;br&gt;Classification of Horticultural Produce: An Introduction</td>
</tr>
<tr>
<td>20.07.04</td>
<td>08.00-10.00 AM&lt;br&gt;Lecture:&lt;br&gt;Post-Harvest Produce losses and Perishability-I&lt;br&gt;10.30-12.00 AM&lt;br&gt;Lecture:&lt;br&gt;Post-Harvest Produce losses and Perishability-II&lt;br&gt;12.30-02.00 PM&lt;br&gt;Group Work:&lt;br&gt;G-1: Produce losses and Perishability&lt;br&gt;G-2: Produce losses and Perishability&lt;br&gt;G-3: Produce losses and Perishability&lt;br&gt;G-4: Produce losses and Perishability</td>
</tr>
</tbody>
</table>
21.07.04 08.00-10.00 AM
Group Work:
Group work continues: Groups prepare class presentations.
10.30-12.00 AM
Class presentation & discussion:
   G-1: Produce losses and Perishability
   G-2: Produce losses and Perishability
   G-3: Produce losses and Perishability
   G-4: Produce losses and Perishability
12.30-02.00 PM
Lecture:
Post-harvest physiology of fresh produce-I

22.07.04 08.00-10.00 AM
Lecture:
Post-harvest physiology of fresh produce-II
10.30-12.00 AM
Lecture:
Post-Harvest Physiology of Climacteric/Non-Climacteric Fruits
12.30-02.00 PM
Group Work:
   G-1: Post-harvest physiology of fresh produce
   G-2: Post-harvest physiology of fresh produce
   G-3: Post-harvest physiology of fresh produce
   G-4: Post-harvest physiology of fresh produce

23.07.04 08.00-10.00 AM
Group Work:
Group work continues: Groups prepare class presentations.
10.30-12.00 AM
Class presentation & discussion:
   G-1: Post-harvest physiology of fresh produce
   G-2: Post-harvest physiology of fresh produce
   G-3: Post-harvest physiology of fresh produce
   G-4: Post-harvest physiology of fresh produce
12.30 PM → Friday closed

24.07.04 08.00 AM → Field Visits: Vegetable, Fruit & Foodgrain Markets, ARI Tarnab and Exporter Sunny International

26.07.04 08.00-10.00 AM
Lecture:
Harvesting and field handling-I
10.30-12.00 AM
Lecture:
Harvesting and field handling-II
12.30-02.00 PM
Lecture:
Packing Places/Sheds
27.07.04  08.00-10.00 AM  
Lecture:  
Packaging of fruit, vegetables and root crops  
10.30-12.00 AM  
Lecture:  
Packaging materials  
12.30-02.00 PM  
Lecture:  
Packaging & Packaging Technology: Some Recent Developments

28.07.04  08.00-10.00 AM  
Group work:  
G-1: Operations in packing of selected fruit and vegetables  
G-2: Packaging materials in use & their suitability/unsuitability  
10.30-12.00 AM  
Group Work:  
Group work continues: Groups prepare class presentations.  
12.30-02.00 PM  
Class presentation & discussion:  
G-1: Operations in packing of selected fruit and vegetables  
G-2: Packaging materials in use & their suitability/unsuitability

29.07.04  08.00-10.00 AM  
Lecture:  
Storage Principles, Practices & Structures  
10.30-12.00 AM  
Lecture:  
Warehouse Management: Inventory Management; Economic Order Quantity  
12.30-02.00 PM  
Lecture:  
Managing Transport & Transportation: Technological Developments/Advances; Vehicles Scheduling & Routing

30.07.04  08.00-10.00 AM  
Lecture:  
Processing & Value-Addition: Principles of Fresh Produce Processing; Processing & Preserving Methods; Value-Addition  
10.30-12.00 AM  
Lecture:  
Commodity Marketing: Market Channels & Intermediaries; Stages in Commodity Marketing; Marketing of Fruits, Vegetables, Root-Crops, Foodgrains, Livestocks, Meat, Poultry, Eggs and Milk & Milk Products  
12.30 PM  
Æ  
Friday closed

31.07.04  08.00 AM  
Æ  
Field Visits: Agricultural & Livestock Commodity Markets, Packaging Industry-Mingora, Agricultural Research Station, Mingora
02.08.04  08.00-10.00 AM
Group work:
G-1: Commodity Marketing: Fruits
G-2: Commodity Marketing: Vegetables
G-3: Commodity Marketing: Foodgrains & Pulses
G-4: Commodity Marketing: Livestock & Poultry
G-5: Commodity Marketing: Livestock Products (Meat, Eggs, Fresh Milk & Milk Products)

10.30-12.00 AM
Group Work:
Group work continues: Groups prepare class presentations.

10.30-12.00 AM
Class presentation & discussion:
G-1: Commodity Marketing: Fruits
G-2: Commodity Marketing: Vegetables
G-3: Commodity Marketing: Foodgrains & Pulses
G-4: Commodity Marketing: Livestock & Poultry
G-5: Commodity Marketing: Livestock Products (Meat, Eggs, Fresh Milk & Milk Products)

03.08.04  08.00-10.00 AM
Lecture:
Marketing Efficiency: Technical & Economic Efficiency; Definitions
Improving Technical & Economic Efficiency: Ways & Means
Structure-Conduct-Performance Paradigm: Efficiency Criteria

10.30-12.00 AM
Group work: Participants to read the following article and take notes.
Marketing Efficiency: Experiences of South Asian Countries

12.30-02.00 PM
Group work:
G-1: Marketing Efficiency: Afghanistan’s scenario/Problems Identified
G-2: Marketing Efficiency: Afghanistan’s scenario/Problems Identified
G-3: Marketing Efficiency: Afghanistan’s scenario/Problems Identified

04.08.04  08.00-10.00 AM
Group Work:
Group work continues: Groups prepare class presentations.

10.30-12.00 AM
Class presentation & discussion:
G-1: Marketing Efficiency: Afghanistan’s scenario/Problems Identified
G-2: Marketing Efficiency: Afghanistan’s scenario/Problems Identified
G-3: Marketing Efficiency: Afghanistan’s scenario/Problems Identified
12.30-02.00 PM
Lecture:
Analyzing the Market: Market Research; Gathering Information for Market Research; Rapid Market Appraisal; Market Mapping

05.08.04 08.00-10.00 AM
Group work:
G-1: Afghanistan’s Resources & Products Mapping: Horticultural Crops
G-2: Afghanistan’s Resources & Products Mapping: Cereal Crops, Foodgrains & Pulses
G-3: Afghanistan’s Resources & Products Mapping: Livestock & Livestock Products

10.30-12.00 AM
Group Work:
Group work continues: Groups prepare class presentations.

12.30-02.00 PM
Class presentation & discussion:
G-1: Afghanistan’s Resources & Products Mapping: Horticultural Crops
G-2: Afghanistan’s Resources & Products Mapping: Cereal Crops, Foodgrains & Pulses
G-3: Afghanistan’s Resources & Products Mapping: Livestock & Livestock Products

06.08.04 08.00-10.00 AM
Lecture:
Development of Marketing Plan: An Introduction
Analyzing Market Situation & Opportunities

10.30-12.00 AM
Group work:
G-1: Analyzing Market Situation & Opportunities for Afghanistan’s Horticultural Crops
G-2: Analyzing Market Situation & Opportunities for Afghanistan’s Cereals/Foodgrain crops
G-3: Analyzing Market Situation & Opportunities for Afghanistan’s Livestock & Livestock Products

12.30 PM → Friday closed

07.08.04 08.00-10.00 AM
Group Work:
Group work continues: Groups prepare class presentations.

10.30-12.00 AM
Class presentation & discussion:
G-1: Analyzing Market Situation & Opportunities for Afghanistan’s Horticultural Crops
G-2: Analyzing Market Situation & Opportunities for Afghanistan’s Cereals/Foodgrain crops
G-3: Analyzing Market Situation & Opportunities for Afghanistan’s Livestock & Livestock Product

12.30-02.00 PM
Lecture:
Mass-vs-Target Marketing, Segmentation-Marketing & Setting up of Marketing Goals
09.08.04 08.00-10.00 AM
Lecture:
Developing a Successful Marketing Strategy: Strategies for Individual Farmers-versus-Firms
10.30-12.00 AM
Lecture:
Market Entry & Marketing Strategies: General Marketing Strategies-versus-Entrepreneurial Marketing Strategies
12.30-02.00 PM
Group work:
G-1: Developing Marketing Strategies for Afghanistan’s Horticultural Crops
G-2: Developing Marketing Strategies for Afghanistan’s Foodgrains & Pulses
G-3: Developing Marketing Strategies for Afghanistan’s Livestock & Livestock Products

10.08.04 08.00-10.00 AM
Group Work:
Group work continues: Groups prepare class presentations.
10.30-12.00 AM
Class presentation & discussion:
G-1: Developing Marketing Strategies for Afghanistan’s Horticultural Crops
G-2: Developing Marketing Strategies for Afghanistan’s Foodgrains & Pulses
G-3: Developing Marketing Strategies for Afghanistan’s Livestock & Livestock Products
12.30-02.00 PM
Lecture:
Managing the Marketing Mix – 4Ms

11.08.04 08.00-10.00 AM
Lecture:
New Product Development: For Domestic/Export Markets
Participants take notes on new products/enlist new products
10.30-12.00 AM
Group work: Class presentation & discussion:
G-1: Enlisting New Horticultural Products for Afghanistan’s Domestic & Export Markets
G-2: Enlisting New Foodgrains/Pulses Products for Afghanistan’s Domestic & Export Markets
G-3: Enlisting New Livestock/Livestock Products for Afghanistan’s Domestic & Export Markets
12.30-02.00 PM
Lecture:
Developing A Marketing Plan: Format
Developing Marketing Plan for Afghanistan

12.08.04 08.00-10.00 AM
Group work:
G-1: Developing Marketing Plan for Afghanistan’s Horticultural Crops
G-2: Developing Marketing Plan for Afghanistan’s Foodgrains & Pulses
G-3: Developing Marketing Plan for Afghanistan’s Livestock & Livestock Products

10.30-12.00 AM
Group Work:
Group work continues: Groups prepare class presentations.

12.30-02.00 PM
Class presentation & discussion:
G-1: Developing Marketing Plan for Afghanistan’s Horticultural Crops
G-2: Developing Marketing Plan for Afghanistan’s Foodgrains & Pulses
G-3: Developing Marketing Plan for Afghanistan’s Livestock & Livestock Products

13.08.04 01  8.00 AM→ Course Evaluation & Concluding Ceremony
### List of Participants
**Course No: 0804 Post Harvest Management & Marketing Skill**  
(July 15 through August 16, 2004)

<table>
<thead>
<tr>
<th>No</th>
<th>Name</th>
<th>Father Name</th>
<th>Date/ Birth</th>
<th>Age in year</th>
<th>Discipline</th>
<th>Govt. Department/NGOs/ Universities</th>
<th>Duty Station</th>
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<tbody>
<tr>
<td>1</td>
<td>Mujeburahman</td>
<td>Jan Bazkhan</td>
<td>1977</td>
<td>27</td>
<td>B.Sc. Agri Fac Kabul Uni</td>
<td>Mini of Agri &amp; Animal Husb</td>
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<tr>
<td>2</td>
<td>Sadullah</td>
<td>Hazrat Jan</td>
<td>1970</td>
<td>34</td>
<td>B.Sc. Nang Agr Faculty</td>
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<td>7</td>
<td>Ghulam Abbas</td>
<td>Mohammad Ali</td>
<td>1961</td>
<td>43</td>
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<tr>
<td>9</td>
<td>Abdul Rahim</td>
<td>M. Hasham</td>
<td>1965</td>
<td>37</td>
<td>B.Sc. Agr Fac Kabul Uni</td>
<td>Mini of Agri &amp; Animal Husb</td>
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<td>10</td>
<td>M. Daud Eliasi</td>
<td>Abdul Rasool</td>
<td>1975</td>
<td>29</td>
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<td>Alberoni University</td>
<td>Kapisa Province</td>
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<td>M. Agha Zia</td>
<td>M. Akbar</td>
<td>1970</td>
<td>34</td>
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<td>12</td>
<td>Abdul Aziz Sabir</td>
<td>Gheiasudin</td>
<td>1978</td>
<td>26</td>
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<td>13</td>
<td>Ghulam Hazrat</td>
<td>Ghulam Sakhi</td>
<td>1974</td>
<td>30</td>
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<td>Ghulam Nabi</td>
<td>S. Mohammad</td>
<td>1961</td>
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<td>Fac of Agri NangarharUni</td>
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<tr>
<td>15</td>
<td>Mohammad Ismail</td>
<td>B.Sc. Agri Fac Kand Uni</td>
<td>Fac. Of Agri. Nangarhar Univ</td>
<td>Nangarhar Province</td>
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<tr>
<td>16</td>
<td>Nasratullah A. Zad</td>
<td></td>
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<td>Hamayoon</td>
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Faculty of Agri Kabul University= 1  Faculty of Agri Nangarhar University= 1  Faculty of Agri Balkh University=1  
Ministry of Agriculture and Animal Husbandry = 13  Faculty of Agri Kandahar =2  Aberoni University = 1  Fac of Agri Herat = 1  
Total Participants for Course No: 0904= 1+1+1+13+2+1= 20
### COURSE EVALUATION

**POST-HARVEST MANAGEMENT AND MARKETING SKILLS - 0804**  
**HELD AT NWFP AGRICULTURAL UNIVERSITY, PESHAWAR**  
July 16 through August 13, 2004

Legend:  
A = Strongly Agree,  
B = Agree,  
C = Disagree,  
D = Strongly Disagree,  
E = No Opinion

No. of Respondents= 19

<table>
<thead>
<tr>
<th>No.</th>
<th>Statement</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>The course was relevant to your professional responsibilities.</td>
<td>11</td>
<td>7</td>
<td>1</td>
<td>-</td>
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<tr>
<td>2.</td>
<td>The course improved your knowledge to a great extent.</td>
<td>8</td>
<td>11</td>
<td>-</td>
<td>-</td>
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<td>3.</td>
<td>Enough time was given for classroom lecture/discussion.</td>
<td>14</td>
<td>5</td>
<td>-</td>
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<tr>
<td>4.</td>
<td>Enough time was given for field visits.</td>
<td>8</td>
<td>6</td>
<td>5</td>
<td>-</td>
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<tr>
<td>5.</td>
<td>Recent developments in research and latest knowledge of the subject were imparted.</td>
<td>9</td>
<td>10</td>
<td>-</td>
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<tr>
<td>6.</td>
<td>Problems and issues, which you usually encounter during your professional duties, were discussed during the course.</td>
<td>7</td>
<td>10</td>
<td>1</td>
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### TRAINING METHODOLOGY

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<th>No.</th>
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<th>C</th>
<th>D</th>
<th>E</th>
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<tbody>
<tr>
<td>1.</td>
<td>Lectures were informative and very helpful in communication of knowledge.</td>
<td>8</td>
<td>10</td>
<td>1</td>
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<td>2.</td>
<td>Group discussions and consultations with instruction provided an excellent opportunity for sharing of experience.</td>
<td>11</td>
<td>8</td>
<td>-</td>
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<tr>
<td>3.</td>
<td>Field visits provided the chance to see the problems as discussed in the classroom.</td>
<td>7</td>
<td>9</td>
<td>3</td>
<td>-</td>
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<td>4.</td>
<td>Teaching Methodology was effective.</td>
<td>5</td>
<td>11</td>
<td>2</td>
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<td>5.</td>
<td>Group discussions are more helpful than the lecture.</td>
<td>11</td>
<td>7</td>
<td>1</td>
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<td>6.</td>
<td>Course duration was about right.</td>
<td>5</td>
<td>9</td>
<td>5</td>
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### TRAINERS’ PERFORMANCE

Give response about the trainer of the course through following statements:

<table>
<thead>
<tr>
<th>No.</th>
<th>Statement</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>He has good knowledge of the subject.</td>
<td>16</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>1</td>
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<tr>
<td>2.</td>
<td>He presented the subject matter nicely and spoke clearly.</td>
<td>4</td>
<td>8</td>
<td>6</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>He has the ability to relate subject matter with solutions of existing problems.</td>
<td>4</td>
<td>14</td>
<td>-</td>
<td>-</td>
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<tr>
<td>4.</td>
<td>He answered trainees’ questions satisfactorily.</td>
<td>9</td>
<td>9</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>His overall performance was good.</td>
<td>6</td>
<td>11</td>
<td>-</td>
<td>-</td>
<td>2</td>
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</table>
Suggestions for further improvement (if any):
  • One month of course duration was insufficient. It should be increased.
  • Training material should be translated in Dari language.
  • Field visits should be increased.
  • Course was relevant to my profession.
  • Excursion trips should be arranged.
Overview of Agronomic Research at CCRI, Pirsabak

The participants were given brief description about Maize Agronomy programme at CCRI Pirsabak. The following experiments are included in maize agronomy programme 2004.

1. Effect of planting time on growth and yield of different maize varieties.
2. Growth and yield responses of maize OPV’s to different planting densities.
3. Effect and efficiency of pre and post-emergence herbicides application in maize.
4. Evaluation of maize varieties at low, recommended and high levels of fertility.
5. Enhancing yield and nitrogen use efficiency of cereals under conventional and no-tillage system.

They were informed about importance of date of sowing and various varieties grown at CCRI. They were practically shown how planting date effect disease and insect epidemics and how it contributes to grain and stover yield. They were also told that three groups of varieties were included in the date of sowing experiment, mainly short season, mid season and full season. They were shown how to layout an experiment of different sowing date along with different varieties. Field was prepared before them. They were informed about the importance of a good seed-bed preparation for maize. After harvesting of previous crop the land is irrigated. If there are weeds and stables from the previous crop, it is advisable to use disc harrow or rotavator for initial ploughing in the field. This will destroy the weeds and stables etc. Then irrigate the field and at proper moisture conditions use disc harrow or cultivator two or three times. The more the field is ploughed the higher will be the yield. First the land was ploughed with disc harrow and then two times with cultivator. Before ploughing fertilizer; Urea, Single Super Phosphate, and sulfate of potash was applied to date of sowing experiment, plant density trial, and herbicide trial. For fertilizer and tillage trial the respective dozes of fertilizers will be applied accordingly. The participants were told about the importance of fertilizers in maize plant growth. Importance of soil analysis and organic matter was also discussed.

After this, ridges were made with the tractor driven ridger 75 cm apart. The rigdes were made fine with running of bed shaper on ridges. Lay out of the experiments was done along with research fellows and planting was started. After planting the date of sowing (3rd date of sowing) herbicide (Primextra 500 FW) was sprayed as pre emergence on fresh sowing. Furadon 3% granules application was demonstrated in 1st date of sowing (planted on 01/06/04). The participants complained about the epidemic of maize stem borer. They were told that it is safe to use Furadon 3% granules along with seed at the time of planting to avoid early stage attack of maize stem borer. Second doze of Furadon 3G may be applied when the plants are 2 feet high or one month after planting. It will give protection against maize stem borer. On commercial scale furadon application at the time of planting is very difficult. To overcome this problem confidor seed dresser insecticides may be used @ 5 gm per kg of seed. The confidor powder is mixed with small quantity of water enough just to moisten the seed. Then it is mixed with the seed and thoroughly stirred. The insecticide will stick to the seed and will provide effective control against maize stem borer for 20-25 days after emergence. The other alternative is the practice of crop rotation. If someone have an other piece of land for maize planting, it will be wise choice to plant
Maize crop on that piece of land on which maize crop has not been grown previously. Maize stem borer problem usually comes from monoculture (growing same crop on same piece of land every year). If the soil moisture condition at the time of planting is poor (usually it is very difficult to maintain proper moisture in the field in months of June and July) it is advisable to irrigate the field on 5th day of planting. This will ensure good germination and proper plant stand can be established. Similarly the other experiments were also demonstrated practically to participants. The participants were involved in land preparation, fertilizer application layout and planting practically.

Maize Seed Production

Although in general, agronomic practices in maize seed production are usually similar to those used in producing a commercial grain of maize. However, there are some additional requirements to seed production. The value of a good seed is higher than that of grain. Therefore seed crop needs greater care and more inputs than a grain crop. Similarly seed yield obtained from a given cultivar in a given site very often produced different quality, in term of genetical quality (purity) physiological quality (viability and vigor) and physical quality (inert matter).

1. Site selection:

Production of certified maize seed would often require a field that is well drained. The land may be owned or leased but managed by commercial farmers as contract growers. Therefore an essential aspect of successful maize seed production is the selection of good growing areas and possibly contract growers.

Growing conditions:

It is important to select a site that will allow reproduction of all plants to reduce the risk of rapid shifts in the genetic make-up of a given variety. Lack of extreme temperatures, lack of extreme drought, and water logging that make severe to the crop, pest pressure etc should be avoided. Harvest time should be dry to minimize the cost of drying and reduce seed quality. Preference to plant in a field previously sown to another crop to reduce problem of a volunteer crops in order to reduce contamination that will reduce genetical quality of the seed. Consider field topography, soil fertility, weed population etc. The lower the fertility of filed the higher will be production cost. Similar trend to the weed population and slope. Find out the planting time and selection of variety in the neighboring field to avoid contamination of other varieties with-in the field or from the other fields. Therefore isolation either based on date of flowering or distance, should be properly determined. It should be important to consider during site selection to facilitate the delivery of inputs such as seed and fertilizers as well as to transport the harvested crop. It is very important to minimize the time period from harvesting to processing time. The longer the time between harvesting to processing /drying the higher opportunity of the seed to be lost in term of seed quality.

2. Isolation:
The cross-pollinated nature of maize, along with its abundant production of light and wind carried pollen, often make it very difficult for seed procedures to avoid contamination. Proper isolation is essential to minimize contamination from undesirable pollen, in order to obtain genetically pure seed.

**Isolation can be accomplished by three ways:**

Seed producers say that best isolation is a perfect nick, that is when pollen parent start shedding just before silk emergence in the female parent. The second one is proper distance between two varieties. The third one is the time isolation. Planting may be done in different dates so that in one variety pollination is completed and in other pollination starts.

**Factor affecting isolation distance:**

- Greatest contamination occurs within 50 to 75 meters of the contaminating maize.
- Pollen from boarder rows dilutes contamination.
- Natural barriers may reduce contamination.
- Abundant supply of pollen from male parent at the right time reduces contamination.
- The larger the field the less is the risk of contamination.
- Direction from contaminating pollen and prevailing winds influence the amount of contamination.
- Environmental conditions during pollination affect quality of seed produced.

**Minimum Isolation distance:**

The major factors affecting the standards for isolation distances are:
- Whether the crop is a hybrid or open-pollinated variety.
- Call of seed being produced (breeder, pre-basic, basic or certified).
- The grain colour/texture of the contaminating maize.
- The size of the seed production field.

The minimum isolation distance for pre-basic seed is 400 meter and 200 meter for basic seed production. In open-pollinated varieties seed production only in Breeder Nucleus Seed (BNS) and pre-basic class there is need for separate rows of male and female. The number of male rows depends on pollen producing ability of the male parent. If male is good pollinator the 1 male to 4 rows of female or 2 to 4 rows are planted.

**Personnel:**

- Mr. Abdul Azim, Agronomist Maize
- Mr. Manzoor Akbar Assistant Agronomist Maize
- Mr. Zubair Shah, Research Officer
Date of sowing trial:

The trainees were shown the various varieties sown on 1\textsuperscript{st}, 15\textsuperscript{th} June, 1\textsuperscript{st}, 16\textsuperscript{th} July and 1\textsuperscript{st} August 2004. In the 1\textsuperscript{st} June planting silking was almost completed in Pahari and Azam varieties while Jalal-2003 was in silking stage. They were told about the damage caused by hailstorm. The remedy measures taken for the control of damages is nitrogen application. The participants were informed that if short duration varieties are sown early there be a lot of barrenness in the plants as the pollination will take place in very hot weather. The 15\textsuperscript{th} June planting was also in silking stage. The early varieties in the experiment started silking and they were told about the silking process. Furthermore, they were shown other dates planting, germination processes and weed control.

Herbicide trial

The pre-emergence herbicides are applied just after sowing in maize crop while the post emergence herbicide is applied when the plant has 4 to 6 leaves. The participants were showed how to apply the herbicides. First of all doze of each herbicide i.e. Primetra 500FW, Primextra Gold 730 EC, Dual Gold 960 EC calculated to participants. They were practically shown how to calculate doze for each sub-plot. The hand pump was filled with water and the water level was noted and only water was sprayed on a sub-plot. The amount of water used in a sub-plot was noted. This calibration is very essential for effective spray. If the amount of water used on a subplot is more or less this will affect the concentration of herbicides. If we use less water some area of the plot will be left without spray. If we use more water then the concentration of herbicides will be low and the desired result will not be obtained. After calibration the calculated amount of herbicides was thoroughly mixed in required amount of water. An important point to note is that one should not walk in area of the field that is sprayed. Because it will break the film made by herbicide on soil surface. The participants were informed about the economic benefits of the herbicides. Based on experimental results if you spend one rupee on chemical weed control, the benefit is five rupees. If you spend one rupee on manual weed control, the benefit is two rupees.

Fertilizer trial

The role on NPK and other nutrients is very important in maize production. As maize is a short duration crop and if the soil is not fertile enough to supply essential nutrients to the crop, yield is adversely affected. A fertile soil supplies nutrient requirements of the plants for high yield. Soil fertility evaluation is the process by which nutrient problems are diagnosed and the fertilizers, lime, soil management and amendments are made. Soil fertility level is different in different locations and soil types. Soil fertility depends on rate and kind of fertilizers used, yield, crop removal, rain fall, parent material, leaching, cropping system, nature of soil and soil management. The purpose of soil fertility evaluation is to obtain data on nutrient status chemical properties as basis for determining fertilizer needs and soil management to improve nutrient availability. Soil fertility evaluation can be done by nutrient deficiency symptoms and plant analysis. When the plant nutrients are not adequately supplied by the soil or are not utilized by
the crop, several physiological processes are affected causing plant to show physiological and morphological appearance that is different from normal, particularly when deficiency is severe. A more or less characteristics symptoms appear if the element is very deficient. The specific nutrient deficiency symptoms are produced using culture solutions, pot or field experiments. The pictures are taken and then pictures are compared with the appearance of plants in the field or with samples. Deficiency symptoms are grouped according to the plant affected (a) color changes in older leaves: N, P, K, Mg, Zn. (b) Deficiency symptoms in young leaves with death of terminal buds: Ca, Bo. (c) Deficiency symptoms in young leaves with terminal bud alive: Fe, Mn, Cu, Mo, and Cl. This method has the following advantages (i) Experienced agronomist can identify the symptoms immediately (ii) It is very cheap. The disadvantages are (i) The deficiency of an element does not necessarily produces symptoms. There may be a hidden hunger zone where no symptoms are produced despite the fact that nutrient element is deficient to give top yield. (ii) Difficulty in identifying some symptoms (chlorosis). (iii) Nutrient deficiency symptoms are sometime relative i.e. sufficient at low level of another but become deficient when the other becomes abundant. Deficiency of one element may prevent the uptake of another element. It is very difficult to determine which is the cause or the effect. For example low P may cause N+K deficiency. (iv) Sometimes deficiency symptoms are similar to disease, pest or environmental problems. (v) When the deficiency is very severe, it appears in late stage of growth and it become too late to correct.

**Plant Analysis:** Determination of the nutrient content by chemical analysis of a plant part or whole plant at a selected stage of growth. Analysis data are expressed on dry matter basis.

**Deficiency Symptoms**

A seed has adequate supply of essential nutrient to support germination and seedling emergence in the absence of supplemental nutrition. The rate of germination or the rate of seedling emergence is not affected by nutrient availability. Plant nutritional problems rarely occur for several days after plant emergence. The type of nutrient deficiency symptom that develops depends on the function of nutrient in plant, mobility of nutrient within the plant and the growth stage at which the deficiency occurs. Common deficiency symptoms are given below.

**Chlorosis:** Yellowing, a common deficiency symptoms that may also be caused by other environmental stresses.

**Interverinal Chlorosis:** Commonly termed stripping, when leaf tissue between veins turns yellow while veins remains green.

**Necrosis:** Commonly termed firing, which is complete drying or death of plant tissue. It is usually begins on tips and edges of older leaves and also may be caused by drought, herbicides, diseases and foliar application of fertilizer.
**Stunting:** Reduced growth rate and/or shortened internodes, which may give a plant a stocky or weak spindly appearance. Abnormal coloration: Red, purple, brown or abnormal dark green- reddish purple coloration caused by the pigment anthocyanin, which forms due to sugar accumulation. Identifying the type of deficiency symptoms and its location on the plant and knowing some of the properties of the soil in which the plant is growing will aid in correctly diagnosing nutrient deficiency.

**Nitrogen:** Nitrogen deficiency causes the whole plant to be pale, yellowish green and have spindly stalks. V shaped yellowing on the tip of the leaves appears later. Because N is a mobile nutrient in the plant, yellowing begins on the older, lower leaves and progresses up the plant if the deficiency persists.

**Phosphorus:** Phosphorus deficiency is usually identified on young plants. Phosphorus is readily mobilized and translocated in the plant. Plants are dark green with reddish purple tips and leaf margins. Phosphorus deficient plants are smaller and grow more slowly than plants with adequate P.

**Potassium (k):** Potassium deficiency symptoms are first seen as a yellowing and necrosis of the leaf margins beginning on the lower leaves. If the deficiency persists, the leaf deficiency symptoms will progress up the plant, because K is mobile in the plant and is translocated from old to young leaves.

**Factors affecting the growth of maize**

**Climatic factors:** Precipitation (quantity and distribution) air temperature, base saturation, relative humidity, light, altitude, latitude, wind velocity and CO₂ concentration affect maize growth.

**Soil Factors:** Organic matter (quantity) texture, cation exchange capacity, Base saturation, slope, topography, soil temperature, soil management (tillage, drainage soil depth and structure).

**Crop Factors:** Species variety, planting date, seeding rate, row spacing, seed quality, evapotranspiration, water availability, nutrition, pests, diseases, weeds, harvesting time etc.

**Major factor affecting crop growth:** Environmental factors non-controllable under field conditions: Temperature, Radiant energy, composition of air, soil air composition, Environmental factors controllable under field conditions: Moisture, soil structure, soil pH, biotic factors, nutrients, growth restricting substances.

**Implication of growth attained in different environments:**

a) Plant is a product of its genetic make up and the environmental factors.

b) With the same variety and constant genetic composition grown in different places, crop growth becomes a function of the different environmental factors. Their amount and combinations determine the growth and yield of the crop.

c) The fairly constant genetic make-up set the limit of growth or maximum possible growth under favorable or unfavorable conditions. The potential yield controlled by genes.

**Genetic Factor:** It controls the mechanism for the synthesis of enzymes and compounds that affect biochemical and physiological processes. This affects adaptability, yield, and resistance to adverse environmental conditions. Yield differences result in different nutrients uptake or
removal. Higher yield remove more nutrients resulting in faster depletion and deterioration. This needs replenishment of nutrients in the soil.
AGENDA

Afghanistan-Pakistan Training (APT) Group Meeting
Wednesday, July 28 in 350A ERML

10:00 to 10:30 am  Assemble (coffee and pastries)

10:30 am  Greetings: Steve Pueppke, Director, ACES Global Connect

1. Review of short courses completed since January meeting

2. Photos taken during courses in Kabul and Peshawar

3. Specialized training and “twinning” progress

4. Progress on degree (M.Sc. level) training

5. June 8 meeting with RAMP Management in Chemonics

6. Relationship between UIUC/SIUC and the NWFP-AU
   a. Renewal of the Memorandum on Understanding
   c. Possible Illinois visit by the AU Vice Chancellor

7. Review of Job Order submitted to RAMP in January 2004 and APT suggestions on content of the next job order

8. Thoughts from the Field Office Director

9. Recommendations and input that Jeff Dawson and Earl Kellogg will carry to the August 11 IALC Board of Directors and Technical Advisory Committee meetings

10. Other items contributed by APT members

2:30 pm  Adjourn