



**IFAR 2007 Professional Development Program  
Completion Report  
[800 words]**

**Instructions:**

Please submit the completion report by email, using this form, through the sponsoring CGIAR Center to [ifar@ifar4dev.org](mailto:ifar@ifar4dev.org) within three months after the completion of the fellowship.

*Please check if Thalwitz Scholarship*

*Not*

Name of Applicant -----Ana Gulbani-----

Sponsoring CGIAR Center -----CIP-----

**CIP Supervisor:**

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**I. Work Program goals achieved (maximum length: 200 words)**

The objective of the present study was to test the resistance of CIP potato clones to Late Blight (*Phytophthora infestans*) under lowland field conditions of Georgia. Research was conducted in the laboratory and fields of the Crop Husbandry Institute, Tserovani, Georgia, between 02 May and 03 November, 2007.

**In the laboratory:** Through rapid propagation of virus-free potato plantlets belonging to 15 clones supplied by CIP-Lima, single nodal segments were subcultured in-vitro containing a classic M&S medium with the following additions: 2 mg/l glycine, 0.5 mg/l nicotinic acid, 0.5 mg/l pyridoxine, 0.4 mg/l thiamine, 2.5% sucrose, 3.0 g Agar. After about one month, a total of 1,230 in-

vitro plantlets were obtained and provisionally hardened in small pots under a screenhouse waiting for final transplant in the field.

**In the field:** Survived plantlets were transplanted in a replicated trial (4 repetitions / 15 plants each repetition) surrounded by one line of a susceptible local potato variety, on July 05, 2007. During the growing season, late blight readings were taken on the basis of the percentage of leaf area affected by the disease using a scale developed by CIP to determine the Leaf Area Infection (LAI). No fungicide treatments were applied.

## **II. Plans for follow-up (maximum length: 200 words)**

The present study has contributed to generate new knowledge on disease-free seed potato production in Georgia. The fifteen clones tested showed to be resistant to Late Blight (see Table, chapter IV) under lowland conditions, although late in growing cycle. In fact, 185 days from subculturing tissue plants in laboratory till harvest in the field is a too long cycle compared to that of the imported varieties that are currently grown by farmers. Therefore, we have decided to concentrate our 2008 work on new CIP selections that have given good results in Central Asia, especially in Kazakhstan, Tajikistan and Uzbekistan. In the near future, research should also expand and study the population structure of *P. infestans* in the country and the development of Integrated Disease Management strategies that are effective, environmentally friendly and economical. Late blight caused by the fungus *Phytophthora infestans* is the most serious disease of potato in the mountains of Georgia, requiring expensive and polluting phytosanitary control measures. Next year, suitable arrangements to carry out experiments also in the highlands, where the disease is more virulent, will be found with farmers due to the absence of suitable sites belonging to the research sector.

**III. Report budget utilization including whether budget was spent as planned (maximum length: 100 words)**

The budget was spent according to the plans, as follows:

<b>Items</b>	<b>Description</b>	<b>Cost (\$US)</b>
Lab supplies and equipment	Glass ware: PH Meter, Pipettes, Pipette Tips, Magnetic stirrer, refrigerator	1,755.00
Laptop Computer		1,693.00
Office Supplies	Stationary, cartridges for printer, etc.	192.00
Fuel for transportation	From Crop Husbandry Institute to the field	641.00
Final testing in the field	Equipment and materials (fertilizers, tunnel frame, polythene, tools)	445.00
Host Institute: Crop Husbandry Institute	5% of the grant to cover Utility costs, communication and other expenses	550.00
Applicant	coordinate project activities, manage facilities, equipment and personnel	3,068.00
Research team and Field Labours		1,750.00
Transfer commissions		212.00
Subscription scientific magazines		694.00
<b>TOTAL</b>		<b>11,000.00</b>

**IV. Assessment of the fellowship experience and general comments. (maximum length: 300 words)**

This study enhanced my knowledge on potato research. The collaboration with CIP scientist through technical backstopping was in the field of research methodology, provision of tools, observation/interpretation keys and analyses of data. Summary of the work is shown in the below Table where results of readings done at intervals of 10 days until 13 October are reported.

CIP No.	Late Blight Rating System						
	40 days 15/08/07	50 days 25/08/07	60 days 3/09/07	70 days 13/09/07	80 days 23/09/07	90 days 3/10/07	100 days 13/10/07
391004.18	0	0	0	0	0	0	0
391046.14	0	0	0	0	0	0	0
391058.175	0	0	0	0	0	0	0
391058.175	0	0	0	0	0	0	0
393085.5	0	0	0	0	0	0	0
393280.64	0	0	0	5	5	5	5
393371.58	0	0	0	0	0	0	0
395011.2	0	0	0	0	0	0	0
39004.337	0	0	0	0	0	0	0
396029.250	0	0	5	5	5	5	5
396031.108	0	0	0	0	0	0	0
396031.119	0	0	0	0	0	0	0
396034.103	0	0	0	0	0	0	0
396241.4	0	0	5	5	5	5	10

With this project I essentially learnt how to put research results into practice. The increasing importance being placed on the technological underpinnings of agricultural development can pose significant difficulties for our research system in attempting to utilize new technological advances. In fact, being all research infrastructures in our country obsolete, it will be difficult to fill the gap we have inherited from previous system. Devising the most effective means of linking CGIAR research with the development programs of our country has been identified as a key challenge for us. We hope that this project has increased the possibilities of partnership between us and CIP and other CGIAR Centers.