

Tiedekunta/Osasto Fakultet/Sektion – Faculty Faculty of Agriculture and Forestry		Laitos/Institution – Department Department of Agricultural Sciences	
Tekijä/Författare – Author Lotta Kaila			
Työn nimi / Arbetets titel – Title Inheritance and Stability of Late Blight Resistance in Potato Population B3 of the International Potato Center			
Oppiaine /Läroämne – Subject Plant Production Science			
Työn laji/Arbetets art – Level Master's thesis	Aika/Datum – Month and year 8/2015	Sivumäärä/ Sidoantal – Number of pages 76 p.	
Tiivistelmä/Referat – Abstract <p>The mission of International Potato Centre (CIP) is to achieve food security for developing countries. Late blight is one of the most serious diseases of potato, and efficient control of the disease is needed to get proper yield. Chemical plant protection and resistant cultivars are the main keys in controlling late blight. CIP improves the food security by breeding late blight resistant genotypes, which are further tested in developing countries.</p> <p>In this research CIP's breeding population B3 was studied for the inheritance and stability of late blight resistance. Inheritance of resistance was analysed by comparing the level of resistance in two consecutive cycles of recurrent selection (C2 and C3). The stability of resistance was analysed by comparing historical data of population B3 in nine different environments in years 2001–2006.</p> <p>Results showed that the fourth cycle of recombination will improve late blight resistance in the population and the resistance is mainly caused by genetic factors. The research also revealed 78 genotypes that had stable late blight resistance in studied environments. In addition, the study suggests that the population contains some still unidentified R genes.</p> <p>Population B3 has already high late blight resistance, which the fourth cycle of recombination will further improve. In addition, the population contains genotypes with stable and extremely high late blight resistance. Thus, the population serves as a strong material for further late blight resistance breeding and as trial genotypes for tropical highlands. However, the still unidentified R genes should be studied further at molecular level to get best out of the population.</p>			
Avainsanat – Nyckelord – Keywords International Potato Centre, Late blight resistance, <i>Phytophthora infestans</i> , Plant breeding, Population B3, Potato, <i>Solanum</i> , Quantitative resistance, Qualitative resistance,			
Säilytyspaikka – Förvaringställe – Where deposited Department of Agricultural Sciences and Viikki Campus Library			
Muita tietoja – Övriga uppgifter – Additional information Supervisor: Dr. Hannele Lindqvist-Kreuze, CIP, Lima, Peru			

