

京都大学若手人材海外派遣事業 ジョン万プログラム
研究者派遣プログラム

英文報告書

提出日：平成 27 年 1 月 15 日

1. 渡航者 (日本語)			
氏名	田中 佑	採択年度	平成 25 年度
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研究課題名	葉の形態と生理機能の統合に基づいた C3 光合成シミュレーションモデルの構築		
海外渡航期間	平成 25 年 9 月 23 日～ 平成 26 年 7 月 5 日		
渡航先 (英語表記)	国名：United States of America 大学等研究機関名：University of Illinois at Urbana-Champaign 研究室名等：Photosynthesis and Atmospheric Change Laboratory 受入研究者名：Prof. Stephen P. Long		
2. 渡航の報告 (英文)			
<p>渡航先の研究環境、研究者との交流、研究発表の状況等、渡航中の滞在経験について英語 (500～1000 語) で記述して下さい。受入研究者と撮影した写真や研究発表で用いた図等について、可能な範囲で別添として提出して下さい。ページ数については増加してもかまいません。</p> <p>この報告は、ジョン万プログラムの成果として、京都大学ホームページ (英文) などに掲載されることがあります。</p>			
<p>University of Illinois at Urbana-Champaign (UIUC) is located at the central part of Illinois, where is one of the most productive regions of agriculture in USA. UIUC has large scaled facilities of experimental fields, green houses and growth chambers for the plant biology research. I stayed at UIUC from Sep. 2013 to Jul. 2014 and conducted the research on the genetic diversity of the photosynthetic rate of C3 crop plants, especially soybeans.</p> <p>The photosynthetic capacity of crop plants is one of the most important breeding targets to achieve the greater seed production. UIUC has up to 24,000 cultivars of soybean, which is the largest genetic resources in the world. Among this collection, I conducted the screening of soybean genotypes having greater photosynthetic rate. Two genotypes was found to have extremely high photosynthetic rate. The maximum photosynthetic rate was 10-20% greater than that of modern soybean varieties. Both of them are originated from asian countries, and considered to be powerful tool for the future breeding.</p> <p>Besides, the response of photosynthetic rate againsts the sudden increase of light intensity was investigated, and clear genetic diversity was found. This potentially affect the efficiency of light usage under the field condition. The observed variation was attributed to the Rubisco activation throughg the physiological and biochemical analyses.</p> <p>These findings were presented at the Gordon Research Conference, “CO₂ Assimilation in Plants: Genome to Biome” on June, 2014.</p>			