

**EVALUATION OF N-UPTAKE EFFICIENCY BY KALE
MINERALIZED FROM VEGETABLE SOYBEAN
USING ISOTOPE ¹⁵N TECHNIQUE**

WIWAT MATHAYAKUL

DOCTOR OF PHILOSOPHY

IN AGRONOMY

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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**A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
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Wiwat Mathayakul