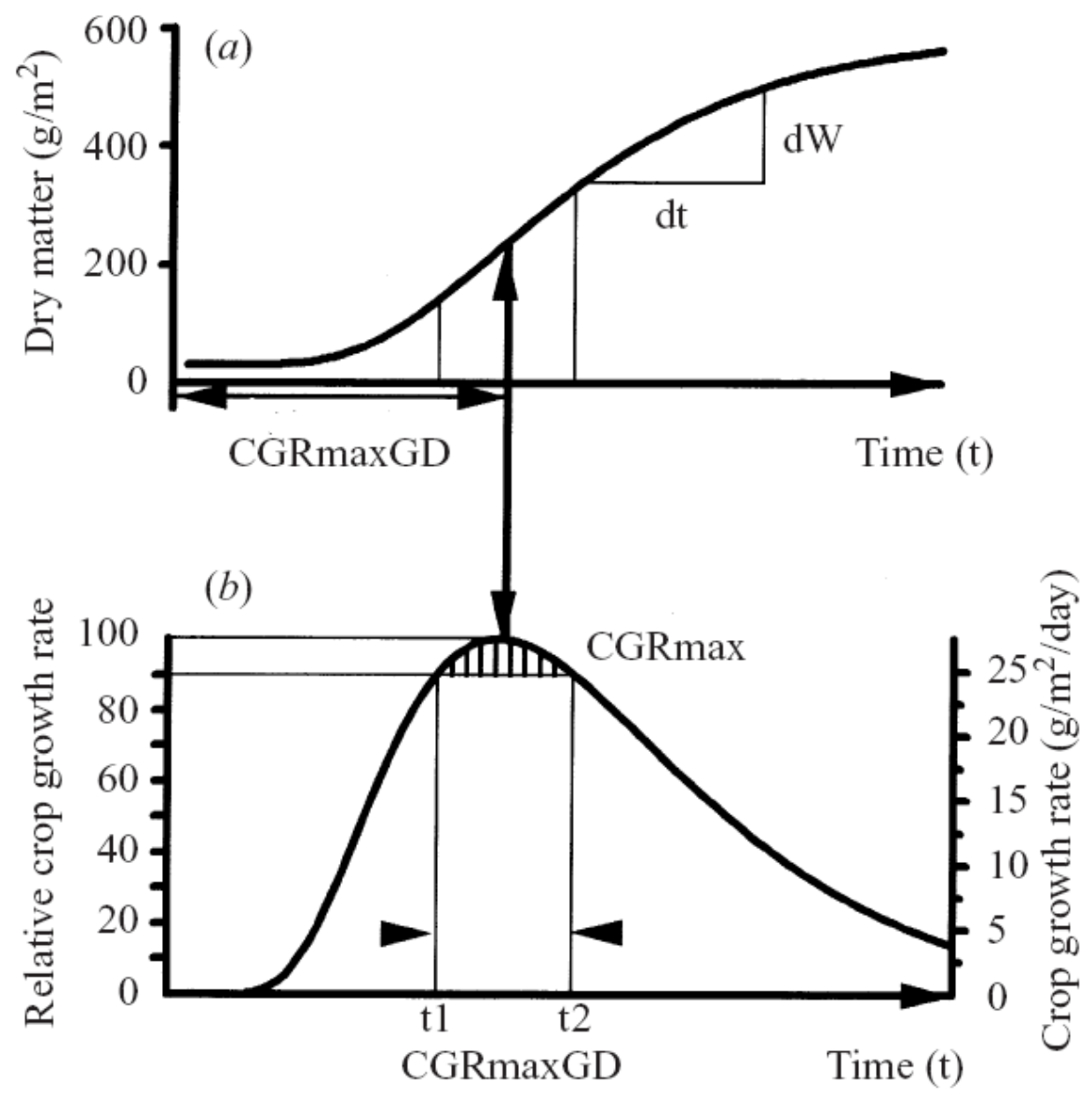


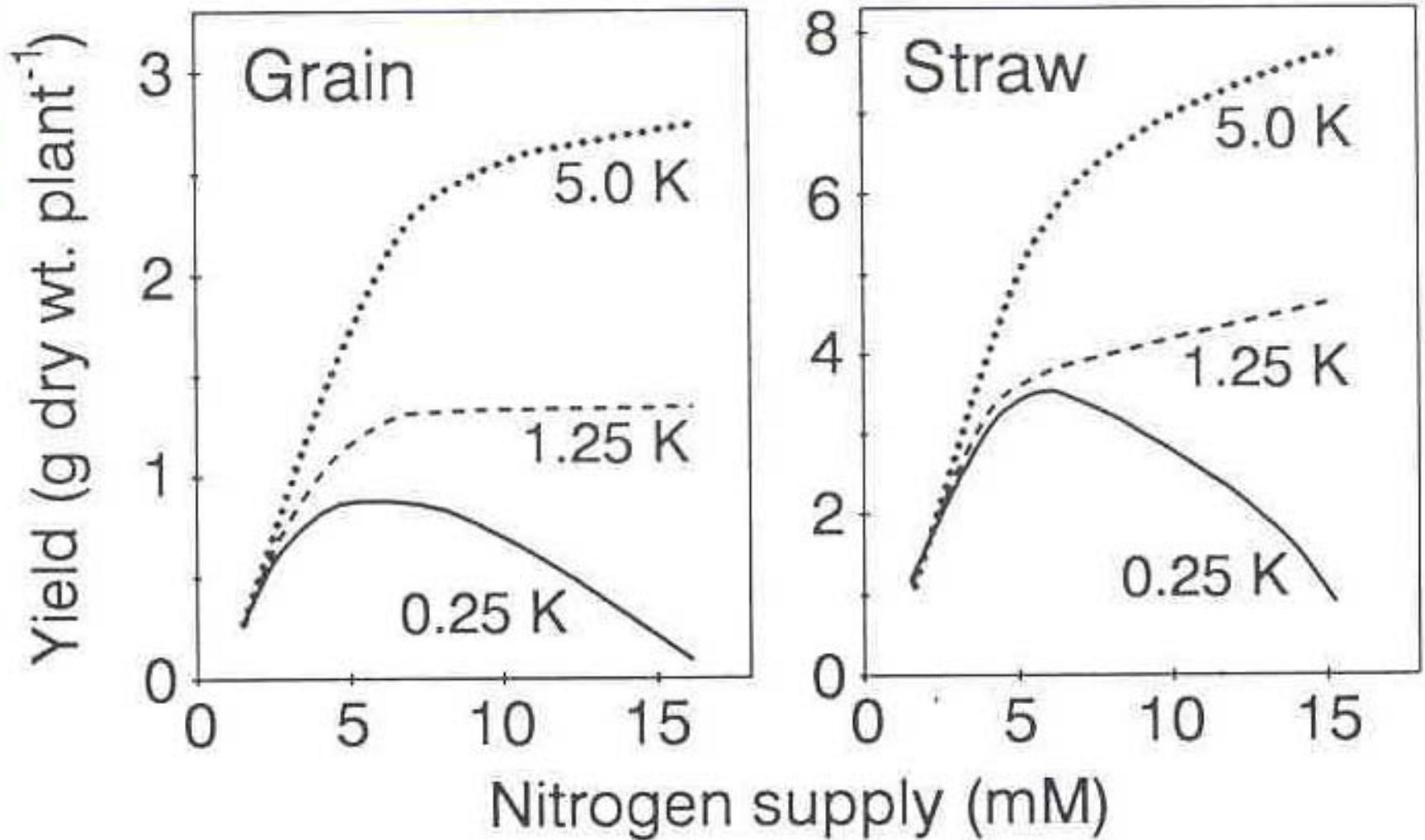
# AGRY 515 2008

- Plant Growth Analysis
- Plant Responses to Nutrient Stress (General)
- Short-term Nutrient Stress

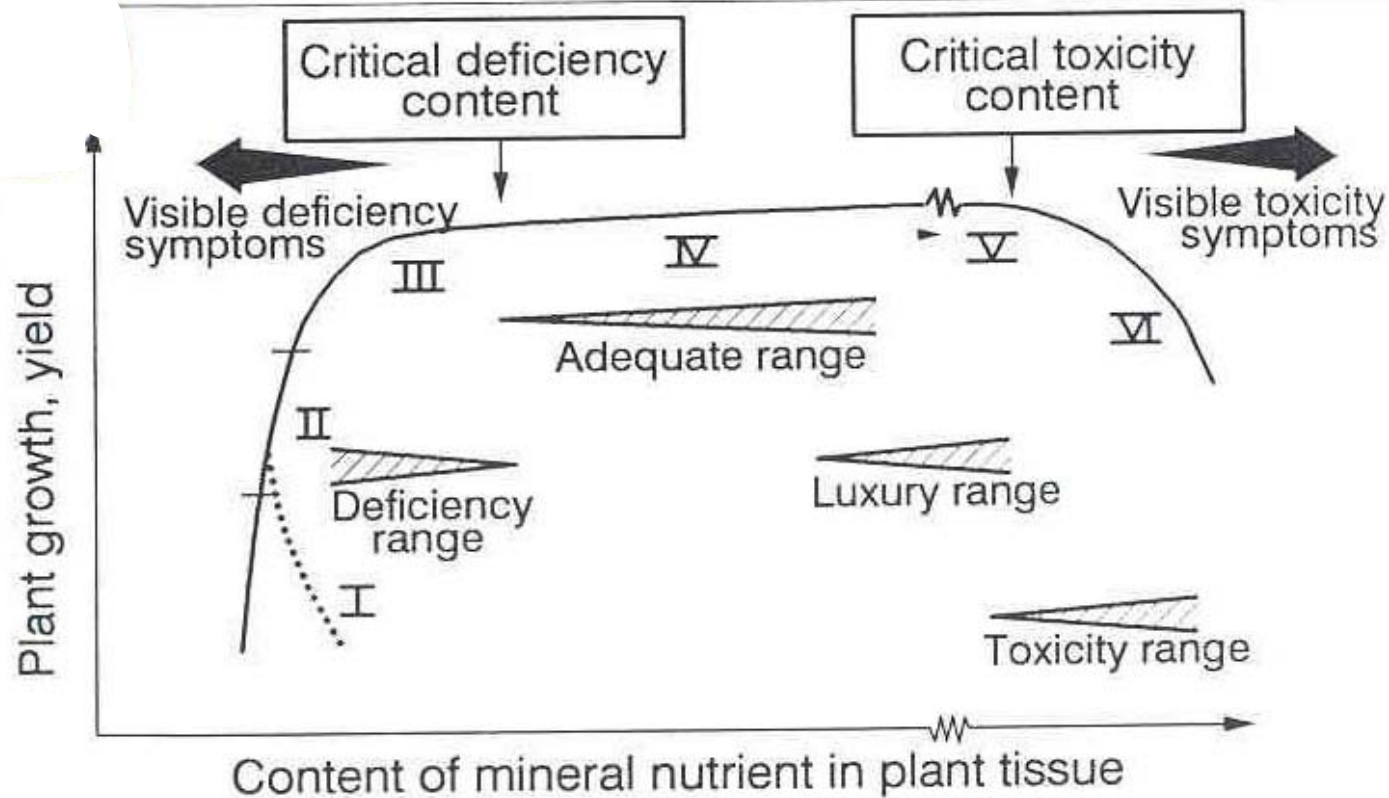
# Figure A



# Figure B1: Law of the minimum



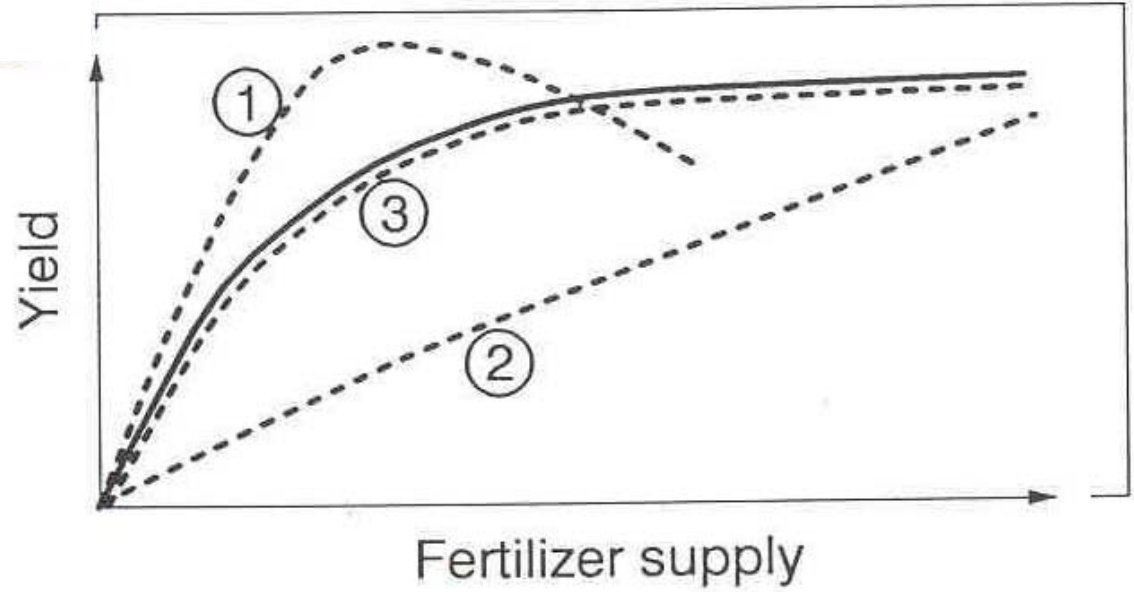
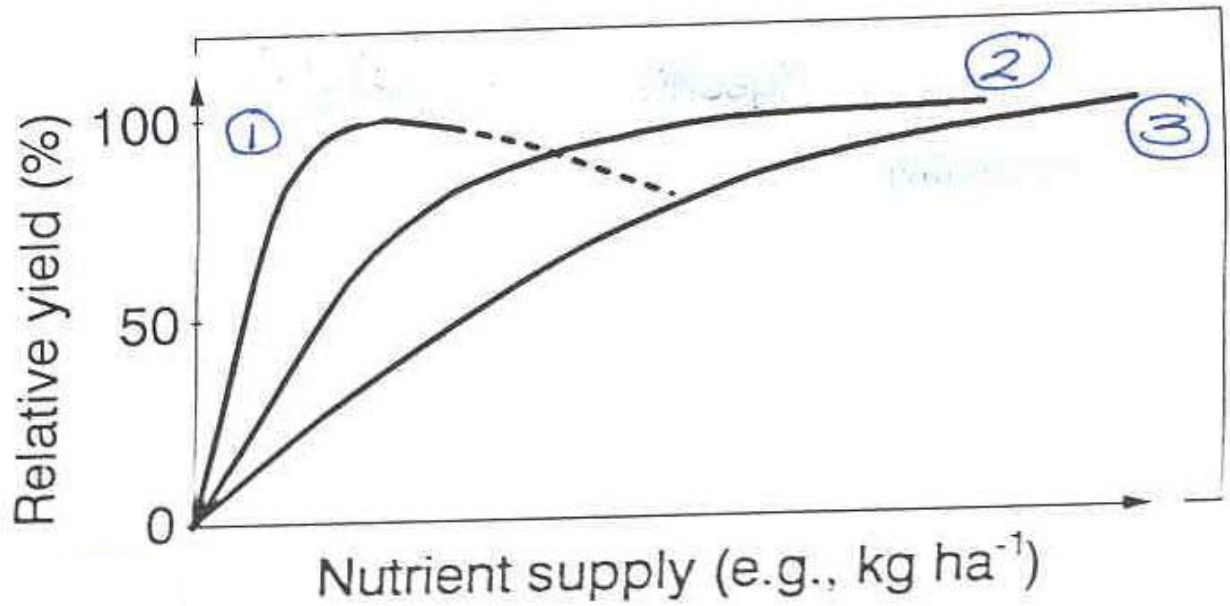
# Figure C



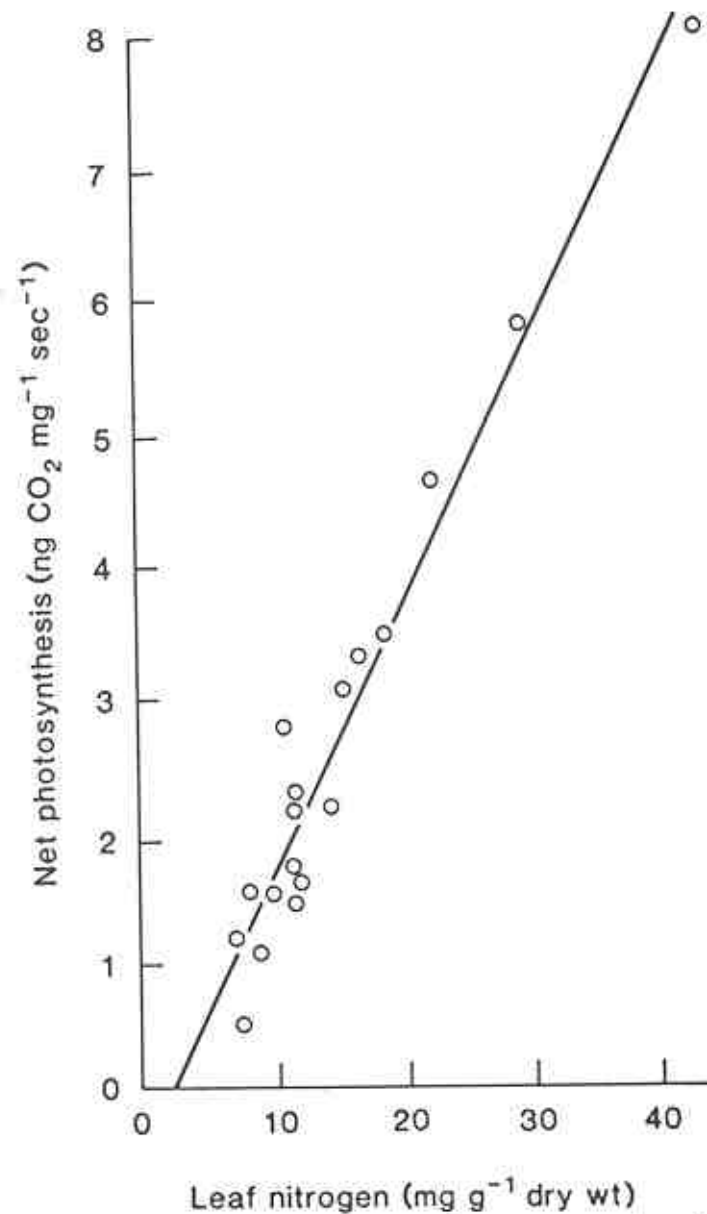
Range	I deficient	II low	III adequate	IV high	V toxic
Element *					
P (%)	<0.16	0.16-0.25	0.26-0.50	0.51-0.80	>0.80
K (%)	<1.26	1.26-1.70	1.71-2.50	2.51-2.75	>2.75
Mn (mg kg <sup>-1</sup> )	< 15	15 - 20	21 - 100	101 - 250	> 250

\* Soybean, upper leaves (from Jones, 1967)

# Figure B2



# Figure D1



**Fig. 12.** Light-saturated net photosynthesis rates of leaves of *Eucalyptus* species with differing nitrogen contents. (After MOONEY et al. 1978)

# Figure D2

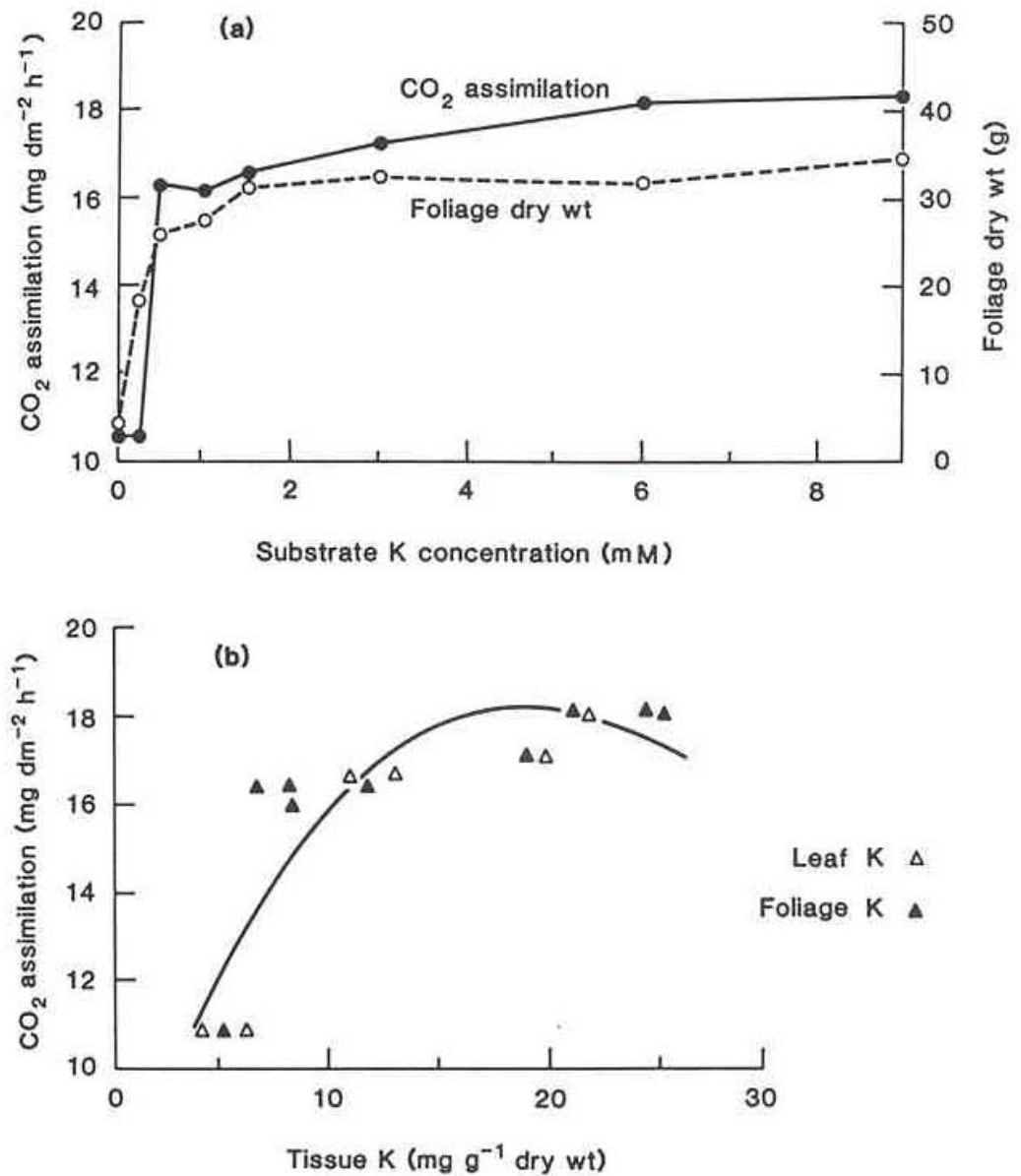


Fig. 10. a The influence of substrate potassium concentration on the rate of CO<sub>2</sub> assimilation of the youngest fully expanded leaf and on the dry weight of the foliage: mean of three replicates. b The relationship between CO<sub>2</sub> assimilation and the mean potassium concentration in the total foliage and the specific leaf sampled: mean of three replicates. (After ESTES et al. 1973)

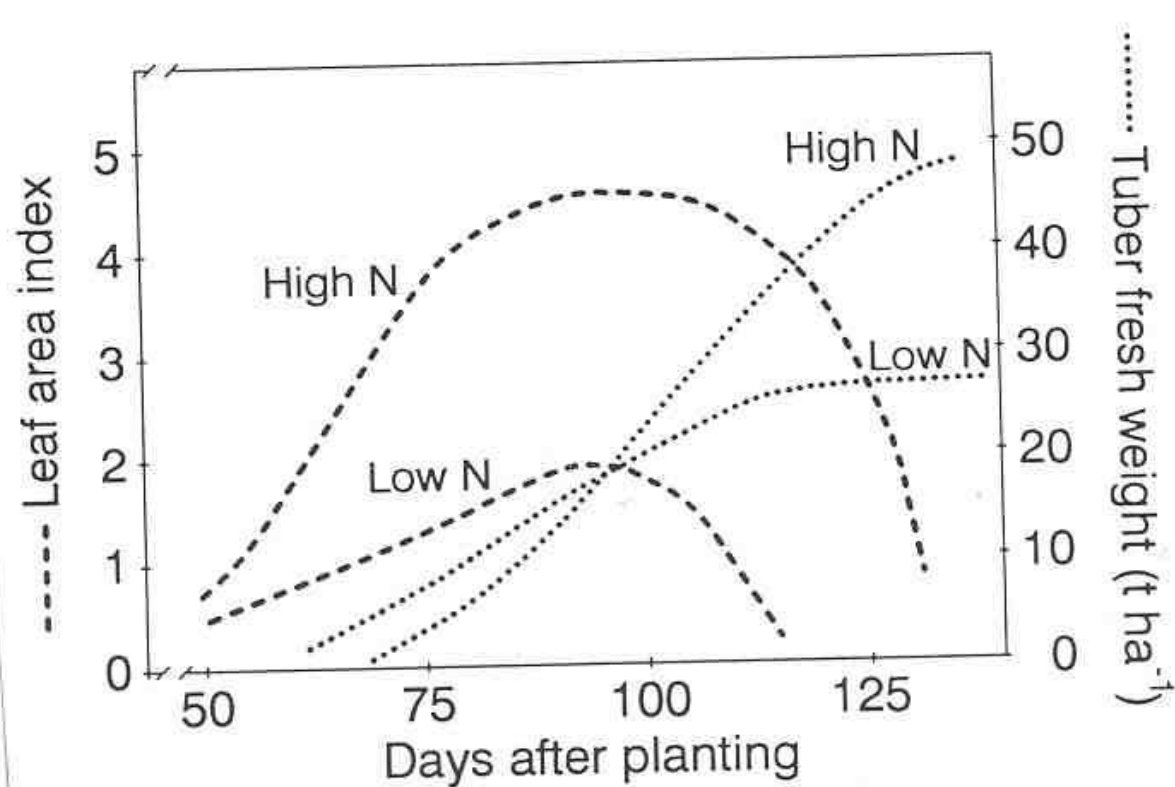
# Figure D3

**Table 3.** The effect of potassium concentration in the substrate on the concentration of potassium in the leaves, the rate of photosynthesis, RuBP carboxylase activity, and rates of photorespiration and dark respiration (PEOPLES and KOCH 1979)

Substrate potassium (mM)	Leaf potassium (mg g <sup>-1</sup> )	Photo-synthesis (mg dm <sup>-2</sup> h <sup>-1</sup> )	RuBP carboxylase activity (μ mol CO <sub>2</sub> mg <sup>-1</sup> protein h <sup>-1</sup> )	Photo-respiration (dpm dm <sup>-2</sup> )	Dark respiration (mg dm <sup>-2</sup> h <sup>-1</sup> )
0	12.8a	11.9a	1.8a	4.0a	7.6a
0.6	19.8b	21.7b	4.5b	5.9b	5.3b
4.8	38.4c	34.0c	6.1b	9.0c	3.1b

Means within a column followed by the same letter are not significantly different ( $P < 0.05$ )

# Figure E



Time course of leaf area index and fresh weight of potato tubers at two levels of N supply. (Based on Ivins and Bremner, 1964, and Kleinkopf *et al.*, 1981.)

# Figure F

**Fig. 18. a**  $^{14}\text{C}$  assimilation of whole potato plant (---, Standard error; \* $P < 5\%$ ; \*\*,  $P < 1\%$ ; \*\*\*,  $P < 0.1\%$ ; compared with  $K_1$ ); **b** percentage distribution of total radioactivity in plant organs.  $K_1 = 0.2 \text{ mM}$ ,  $K_2 = 1.0 \text{ mM}$ ,  $K_3 = 5.0 \text{ mM } K_2\text{SO}_4$ . (After HAEDER et al. 1973)

