

209. 제목 : 본얼 하는 옥수수<sup>\*</sup>의 성장 분석

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목적 : 본얼 하는 옥수수의 성장과정과 특성을 알기 위해서

재료 및 방법

본 실험에 사용한 공시 교잡종은 본얼을 하는 옥수수·Ik//Iri/B68 과 대조품종으로 본얼을 하지 않은 옥수수·Jinjoo-ok 을 공시하여 작물생장율(CGR) · 상대생장율(RGR) · 순동화율(NAR) · 엽면적비율(LAR) · 생근중비율(FDWR) 및 엽면적지수(LAI) 를 다음과 같은 공식에 의해 계산하였음

$$CGR = \frac{w_2 - w_1}{t_2 - t_1}, \quad RGR = \frac{\log_e w_2 - \log_e w_1}{t_2 - t_1}$$

$$NAR = \frac{w_2 - w_1}{A_2 - A_1} \times \frac{\log_e A_2 - \log_e A_1}{t_2 - t_1}$$

$$LAR = \frac{A_2 - A_1}{w_2 - w_1} \times \frac{\log_e w_2 - \log_e w_1}{\log_e A_2 - \log_e A_1}$$

$$FDWR = FW/W \quad LAI = LA/P$$

(W: 건물중 A: 엽면적 t: 조사일수 P: 단위면적 )

In order to know the growing habit of maize with tillers Ik//Iri/B68, hybrid with tiller was grown and compared with Jinjoo-ok which is not tillered and several parameters for growth analysis were measured. The results obtained were summarized as follows.

1. The plant height, the fresh weight of the Ik//Iri/B68 were lower than those of Jinjoo-ok until the tasseling stage of Ik//Iri/B68, while the plant height and the fresh weight of the Ik//Iri/B68 were higher than those of the Jinjoo-ok after the tasseling stage of the Ik//Iri/B68.
2. The average number of tillers per plant of the Ik//Iri/B68 at maturity was 3.7 and average tiller height of the Ik//Iri/B68 was almost same as the height of the main stem.
3. The dry weight of Ik//Iri/B68 was at the early growing season lower than the check hybrid, Jinjoo-ok, while it was higher than the Jinjoo-ok at the later growing season.
4. The LAI of the Ik//Iri/B68 after the expansion of tiller leaves was greater than that of the check hybrid, Jinjoo-ok. The height LAI of the Ik//Iri/B68 and Jinjoo-ok were 12.6 and 5.8, respectively.
5. The CGR of the Jinjoo-ok was greater than that of the Ik//Iri/B68 until the first part of July, while the CGR of the Jinjoo-ok was lower than that of Ik//Iri/B68 as the tillers of the Ik//Iri/B68 were fully developed.
6. The LAR for both hybrids was relatively high 20 days after emergence but Ik//Iri/B68 showed another high LAR value 50 days after emergence.
7. The NAR and the RGR of the Ik//Iri/B68 were greater than those of the Jinjoo-ok until mid of July, the RGR of the Ik//Iri/B68 seemed to be affected by both NAR and LAR, in which the RGR of the Jinjoo-ok seemed to be affected by NAR.

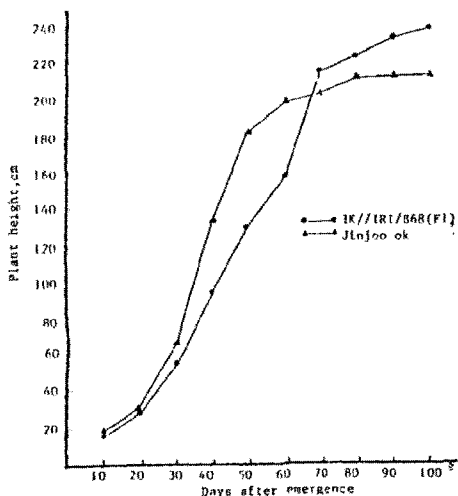


Fig. 1. Time course of plant height in IK//IRI/B68(F1) and Jinjoo-ok(F1).

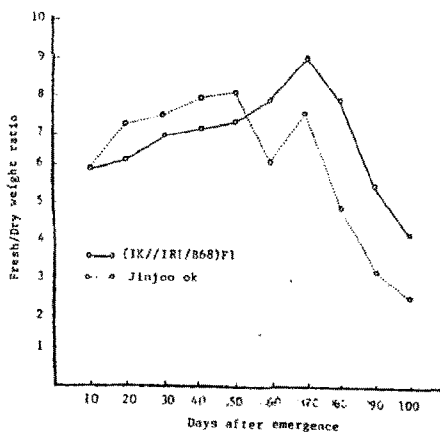


Fig. 2. Changes of fresh and dry weight ratios with time in (IK//IRI/B68)F1 and Jinjoo hybrid.

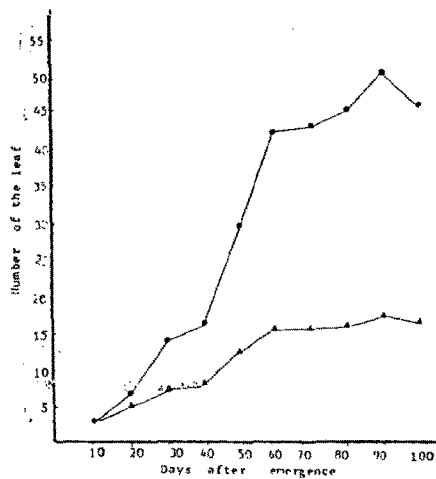


Fig. 3. Time course changes of number of the leaf in IK//IRI/B68 and Jinjoo-ok(F1).

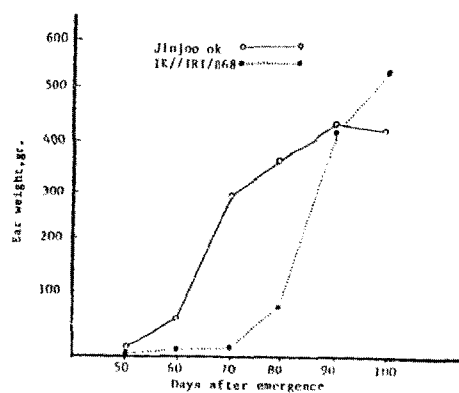


Fig. 4. Time course of ear weight in IK//IRI/B68(F1) and Jinjoo-ok(F1).

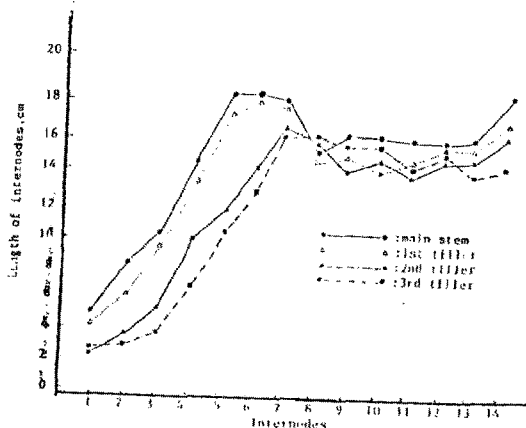


Fig. 5. Internode length of main stem and tillers in IK//IRI/B68(IK).