木浦地方에서 氣象要因이 單作 목화의 生育 및 收量에 미치는 影響

作物試驗場 木浦支場: 金祥坤. 鄭東熙

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Effect of Meteorological Factors on the Growth and Fiber Yield of

Single-crop   Cotton in Mokpo Area

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實驗目的: 목화 單作에 있어서 氣象要因의 變異에 따른 摘採棉 收量의

推定式을 開發하여 作物과 氣象關係의 基礎資料 뿐만 아니라

氣象環境의 變異에 따른 安全栽培 生産技術에 利用코자함

材料 및 方法: 本試驗은 14年間에 걸쳐 목화 4品種에 대한 主要特性과

栽培期間中 觀測된 氣象資料를 利用하여 生育, 收量과 氣象

要因과의 相關關係 및 收量 推定式을 誘導하였다

栽培法은 單作直播로서 목화 標準栽培法에 準하였다

結果 및 考察: 8月의 氣象要因 (平均氣溫(x1), 最高氣溫(x2), 最低氣溫(x3),

蒸發量(x5), 相對濕度(x6), 日照時數(x7), 降水日數(x8), 風速(x9)

를 利用하여 摘採棉收量(Y)를 推定한 結果,

$Y=2835.2497+57.9134x1-46.9055x2-41.5886x3+1.2559x5$

$-21.9687x6-3.3763x7-4.1080x8-17.5586x9 \ (R^2=0.7137^{**})$.

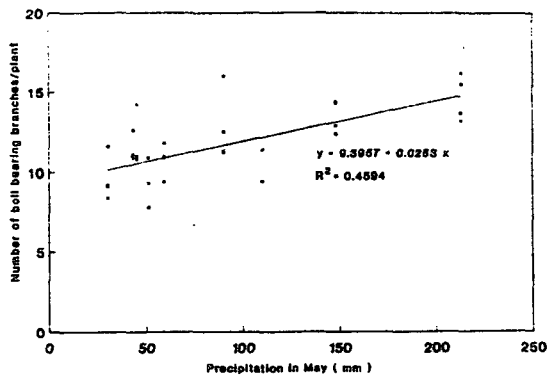의 回歸式을 誘導하였고 有意性이 認定되었으며 實際收量과

理論收量과의 比較는 그림5와 같다

Fig. 1. Relationship between precipitation in May and number of boll bearing branches per plant in cotton monocropping system.
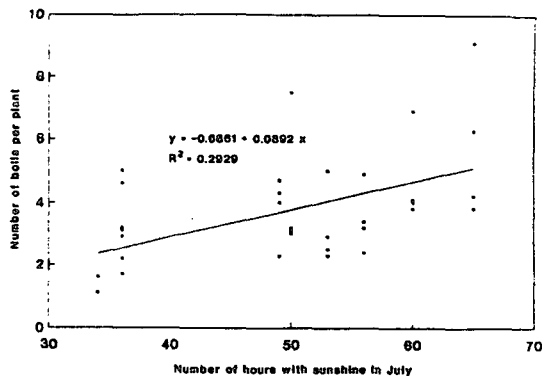

Fig. 2. Relationship between number of hours with sunshine in July and number of bolls per plant in cotton monocropping system.
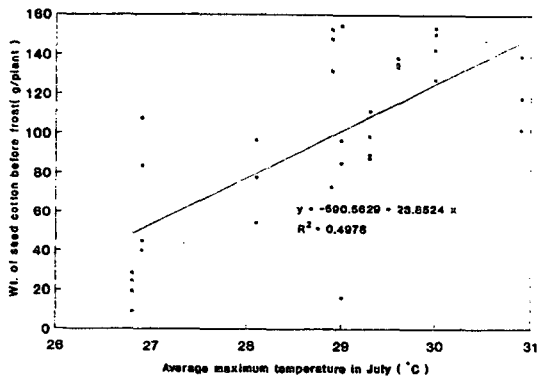

Fig. 3. Relationship between average maximum temperature in August and weight of seed cotton harvested before frost in cotton monocropping system.
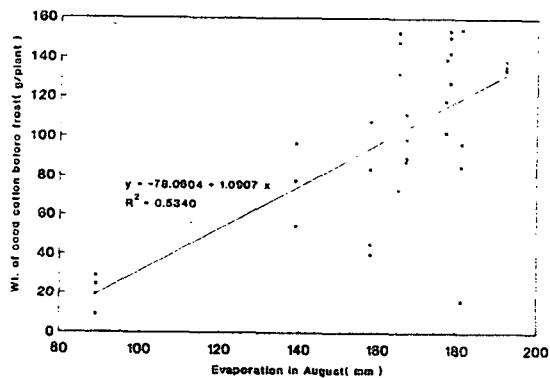

Fig. 4. Relationship between evaporation in August and weight of seed cotton harvested before frost in cotton monocropping system.
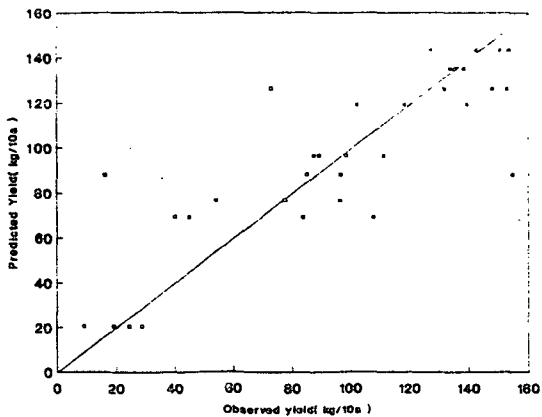

Fig. 5. Comparison of observed yield and predicted yield by the multiple regression equation built from the meteorological data in August.