WP2
Adaptability and Productivity
Field Trials

Partner UniNOVA, Portugal (7)

Task 2.2 – Effect of different sowing dates and plant populations on biomass yields

Task 2.3 – Effect of irrigation and nitrogen fertilization on biomass yields

1st year - 2003

2nd year - 2004

3rd year - 2005

Task 2.2 – Effect of different sowing dates and plant populations on biomass yields

2 sowing dates x 2 varieties x 2 plant densities x 3 replicates

- S_1: 1/5/2003
- S_2: 1/6/2003
- V_1: Tainung 2
- V_2: Everglades 41
- D_1: 20 plants/m^2
- D_2: 40 plants/m^2

Task 2.3 – Effect of irrigation and nitrogen fertilization on biomass yields

3 irrigation levels x 4 nitrogen fertilization x 3 replicates

- I_1: 30% PET
- I_2: 60% PET
- I_3: 100% PET
- N_1: 0 kg N/ha
- N_2: 50 kg N/ha
- N_3: 100 kg N/ha
- N_4: 150 kg N/ha

Along the growing period, for all the fields

Plants

- record of 50% emergence, flowering and maturity dates

- measurement of photosyntesis with CO_2 exchange chambers

- harvest of plant material, 7/8 times during the growing period

- separation of leaf blades, leaf sheaths, stalks, cobs+husks

- measurement of area of the leaves

- dry leaf weight produced

- measurement of the height of the crop

Plants (cont.)

- determination of the moisture content of the harvested material,

(determined separately for leaves, stalks, cobs+husks)

- determination of the dry matter harvested, to determinate productivities of the fields, along the growing period (determined separately for leaves, stalks, cobs+husks)

- chemical analysis of the harvested material, determined separately for leaves, stalks, cobs+husks

- total N, total P, total P, total K, % ash

- total fiber, calorific value, Ca, Mg, Na, at the last harvest

Soils

- determination before the establishment of the crops and at the last harvest

- texture, bulk density,

- organic matter content, pH, CaCO3, P-Olsen, exchan. K, total N, NO3, NO2, NH4

Meteorological data

- daily maximum and minimum temperature

- global radiation

- precipitation

- evaporation

- air humidity and wind speed