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INRA Contribution to BIOKENAF Project

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Kick-off meeting of BIOKENAF project, Athens, 9 & 10 April 03

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INRA Main Involvement

- **WP2: Adaptability and productivity field trials**
  - Task 2.2: Effect of different sowing dates and plant populations on biomass yields
  - Task 2.3: Effect of irrigation and nitrogen fertilisation on biomass yields
- **WP3: Development of the crop growth simulation model**
  - Task 3.1: Development, calibration and validation of the crop production simulation model
- **WP6: Environmental impact assessment and life cycle analysis of Kenaf production and use**

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WP2: Adaptability and Productivity Field Trials (1/2)

(15 pm = 12% of the WP2 person-months allocation)

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

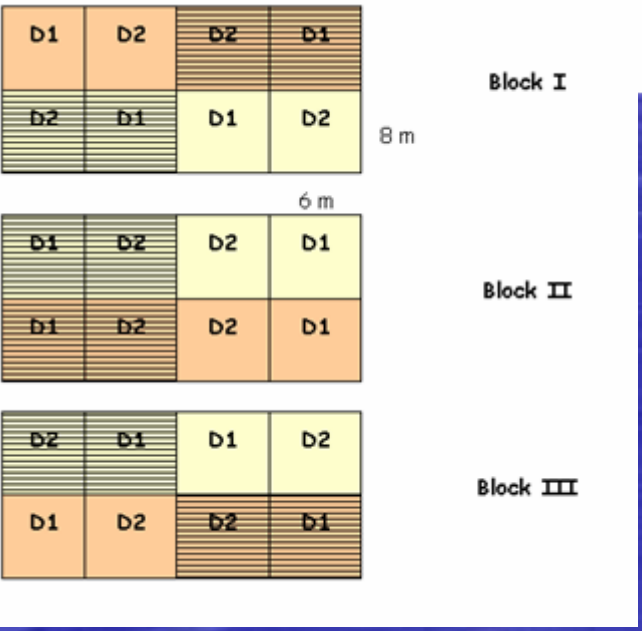
Task 2.3: Effect of irrigation and nitrogen fertilization on biomass yields

- As required:

S_1: 1/5/2003
S_2: 1/6/2003

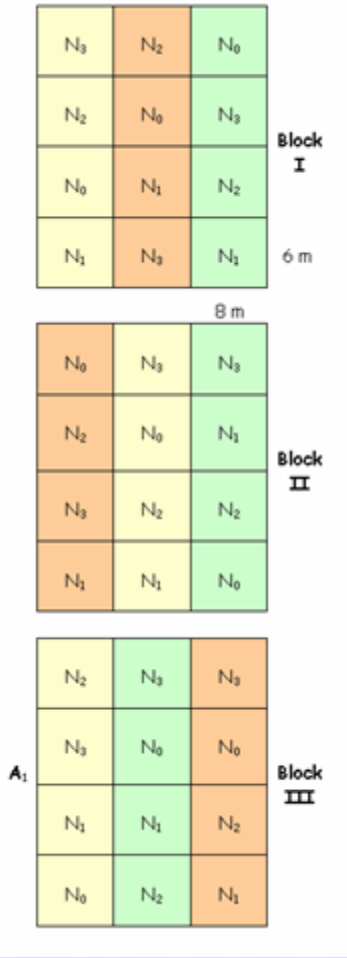
V1: Tainung 2
V2: Everglades 41

D_1: 200,000 plants/ha
D_2: 400,000 plants/ha



I_1: 30% of PET
I_1: 60% of PET
I_2: 100% of PET

N_0: no fertilization
N_1: 50 kg N/ha
N_2: 100 kg N/ha
N_3: 150 kg N/ha



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WP2: Adaptability and Productivity Field Trials (2/2)

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

- **Trial will be carried out at MONS** (~120 km North of Paris)

  - Rainfall at Mons: 650 mm/y

  - PET at Mons: 675 mm/y

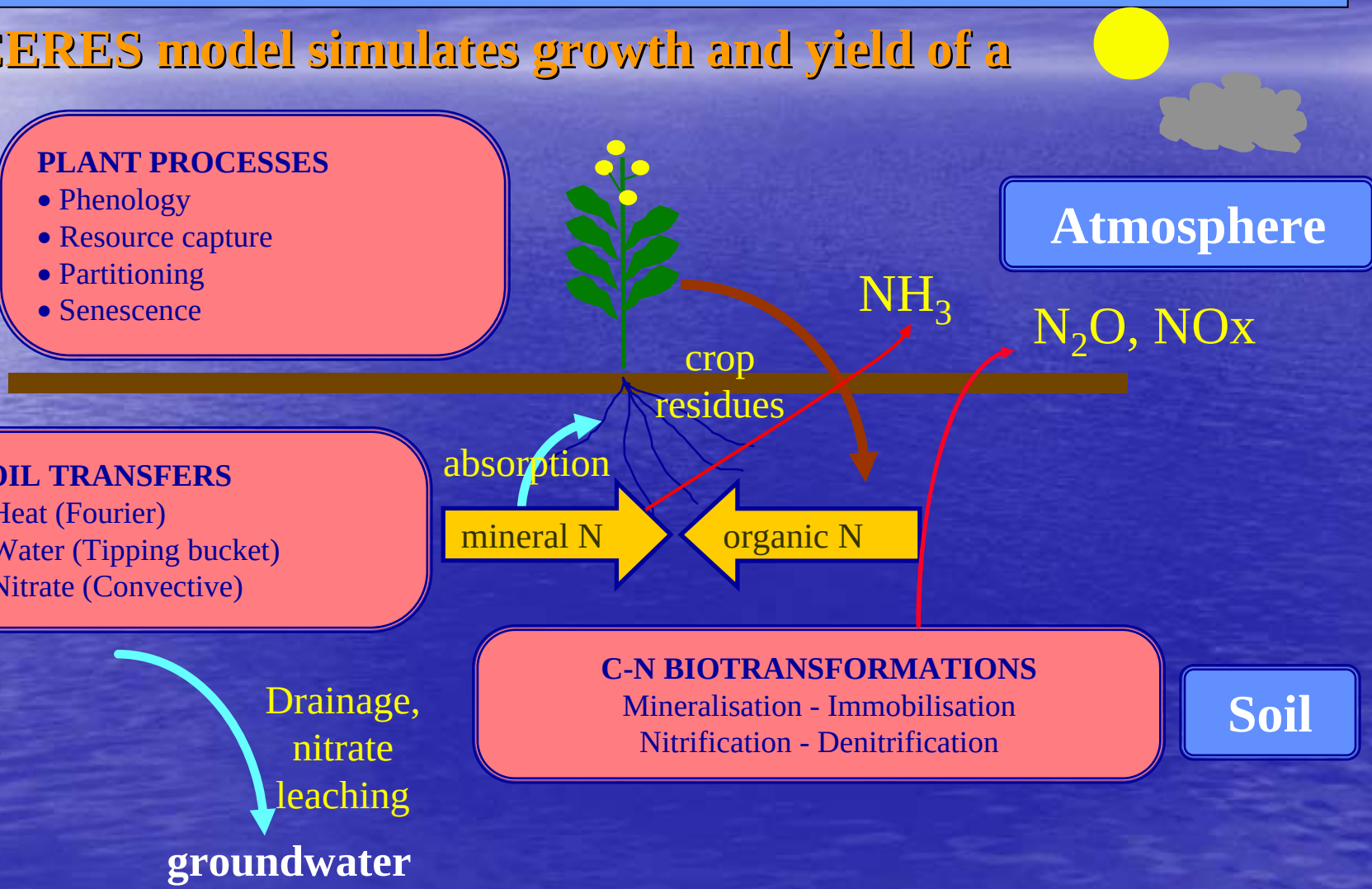
  ➢ **No major hydric stress**

WP3: Development of the crop growth simulation model (1/3)

(2 pm = 10% of the WP3 person-months allocation)

Task 3.1: Development, calibration and validation of the crop production simulation model

- **The CERES model simulates growth and yield of a plant:**



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WP3: Development of the crop growth simulation model (2/3)

Task 3.1: Development, calibration and validation of the crop production simulation model

- 3 types of data are required to implement the CERES model:
  - Climatic data (rainfall, PET, temperature, global radiation)
  - Soil characteristics (texture, pH, organic content, water retention, apparent density)
  - Technical itinerary (tillage, management of crop residues, sowing date and density, irrigation, N fertilisation, organic amendment)

- Outputs generated by the CERES model:
  - Yield
  - Drainage
  - Emissions of NH_3, N_2O and NO_X
  - Balances of Water, N, CO_2 and Organic C

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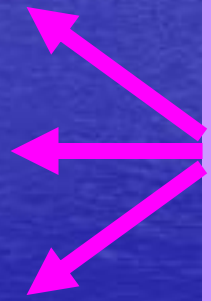
WP3: Development of the crop growth simulation model (3/3)

Task 3.1: Development, calibration and validation of the crop production simulation model

- **Crops tested with CERES**
  - Wheat
  - Maize
  - Oilseed rape
  - Sugar Beet
  - Sorghum
  - Barley
  - Sugar Cane
  - Pea



Test Kenaf insertion within different cropping systems