

BIOMASS PRODUCTION CHAIN AND GROWTH SIMULATION MODEL FOR KENAF

BIOKENAF
QLK5 CT2002 01729

CETA

Centro di Ecologia Teorica ed Applicata

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CETA, Italy (5)

- **WP 2: Adaptability and Productivity Field Trials**
 - Task 2.4: Kenaf Field Trials with Size 2 ha

- **WP 4: Harvesting and Storage Trials**
 - Task 4.1: Harvesting Trial
 - Task 4.2: Storage Trial

SITE DESCRIPTION



Cervignano del Friuli (UD) North East Italy

- **Latitude:** 45° 51' N
- **Longitude:** 13° 20' E
- **Altitude:** 8 m above sea level
- **Soil texture:** fine silty-clayey soil

SOWING PARAMETERS

	FIRST SOWING	SECOND SOWING
KENAF VARIETY	EVERGLADES 41	
DATA	28/05/2003	21/06/2003
FIELD SIZE	1,00 ha	0,45 ha
PLANT POPULATION	221.000 plants/ha (to obtain 200.000 plants/ha)	
SPACE BETWEEN PLANTS	10 cm X 45 cm	
SOWING DEPTH	3 – 4 cm	
QUANTITY OF SEEDS USED	7 Kg	3 Kg
WORKING DURATION	30 minutes	20 minutes



KENAF GERMINATION

Eight days after the first sowing

4th June, 2003



10th June, 2003



13th June, 2003



KENAF DEVELOPMENT

8th July 2003



Middle plant height:
60 cm – 1st sowing
5 cm – 2nd sowing



42 days after 1st sowing



KENAF DEVELOPMENT



7th August 2003

72 days after 1st sowing

Medium height: 130 cm – 1st sowing
60 cm – 2nd sowing

KENAF DEVELOPMENT

25th September 2003

October kenaf survey

	FIRST SOWING	SECOND SOWING
PLANT HEIGHT (cm)	230	130
STEM HUMIDITY (%)	77	79
LEAVES HUMIDITY (%)	81	82



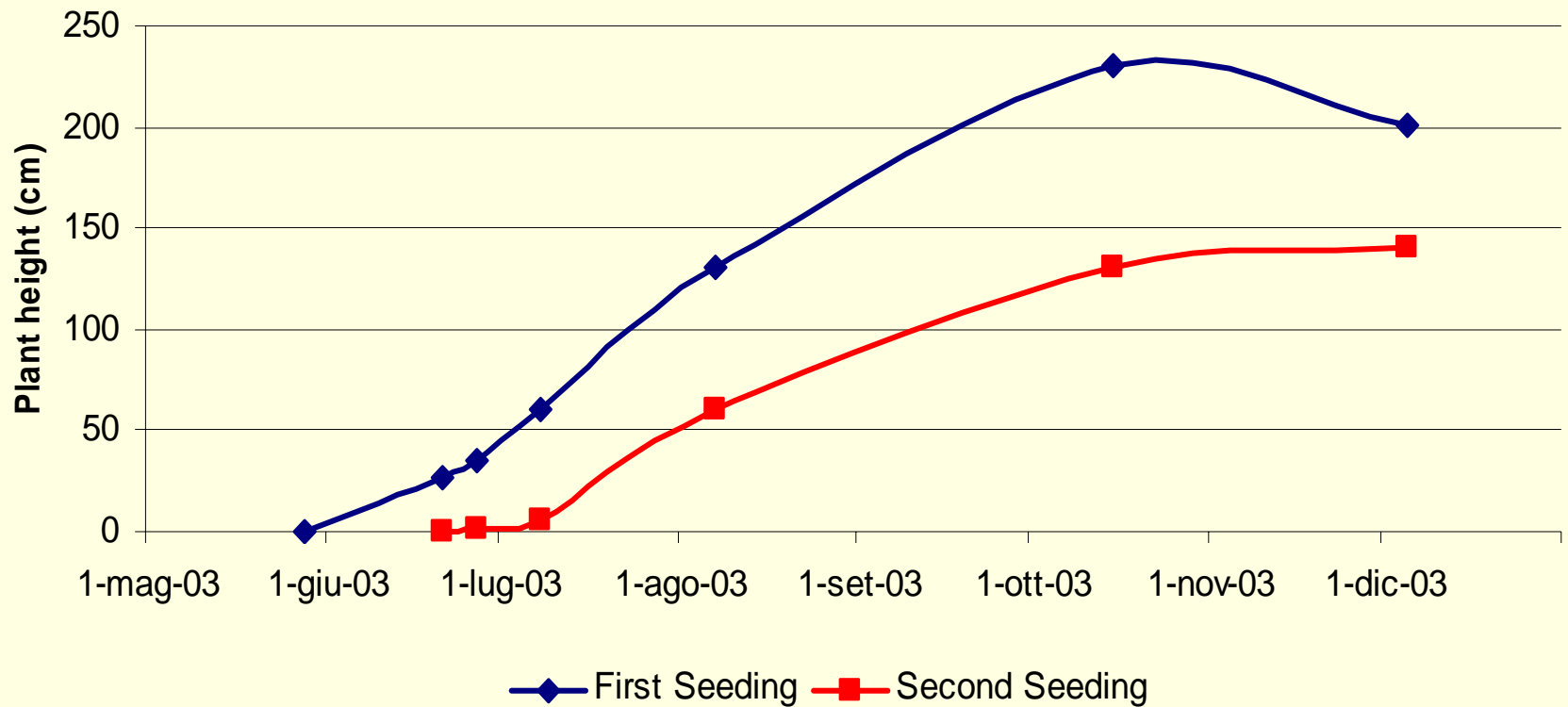
KENAF DEVELOPMENT

December kenaf survey

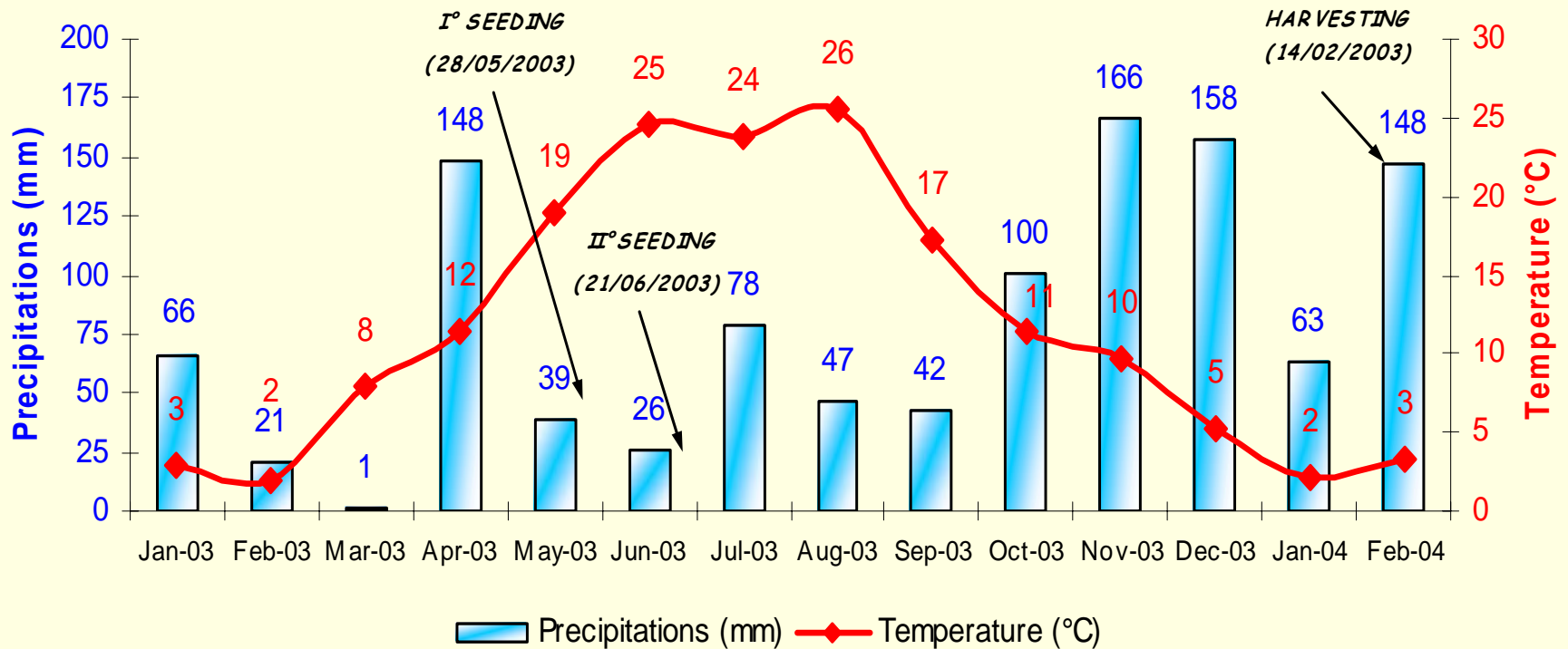
	FIRST SOWING	SECOND SOWING
PLANTS POPULATION (plants/ha)	146.660	157.700
PLANT HEIGHT (cm)	201,1	140,8
BASAL STEM DIAMETER (mm)	17,0	13,7
PLANT WEIGHT (g)	106,7	49,5
STEM HUMIDITY (%)	58,7	62,2
STEM DRY MATTER (%)	41,3	37,8



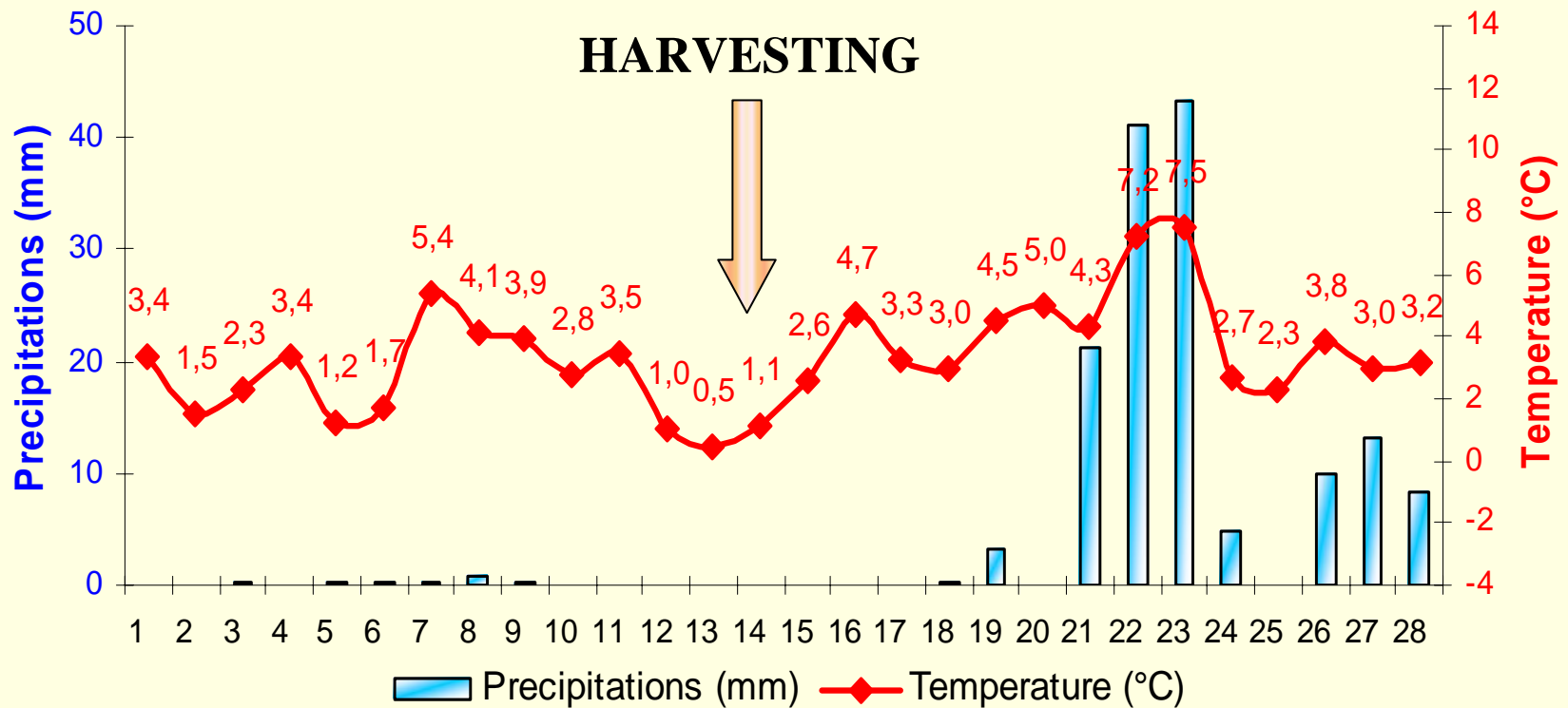
KENAF DEVELOPMENT



Temperature (°C) and monthly precipitation (mm) in Cervignano del Friuli



Daily average temperature and rainfall trend in February



KENAF PLANTS IN FEBRUARY



Stem Humidity (%)	Kenaf Yield* (t/ha)
22,5	14,133

* first sowing

OBSERVATIONS

- Water stress during the germination time caused an high number of leaks in the field. Only the 66% of the plants germinated (first sowing).
- No irrigation was done.
- The choose of a not high plant population, theoretical plant density of 200.000 plants/ha, and the less plant germination caused an high number of ramified plants.
- High differences in biomass production between the first and the second sowing have been observed.
- Kenaf postponed harvest was been caused by the bad climatic conditions and the difficulty to get in the field with machines.
- As there was a different harvest time, some plants in December and other in February, after the winter, the fiber quality of kenaf stems should be examined in order to valuate if there is a significant difference.