



TOWARDS 2030

SUZANO FOREST NURSERIES: TECHNOLOGICAL INNOVATIONS

Bruno Reis
Forest Nursery Manager



NICE TO MEET YOU, WE ARE

SUZANO

WE WANT TO

Strengthen the movement to renew the planet and to transform the world into a sustainable place based on what we know best: **trees.**

That's why we wake up every day
with a purpose:



RENEW WINING

LIFE
INSPIRED
BY TREES

AND WE DO ALL
THIS THROUGH

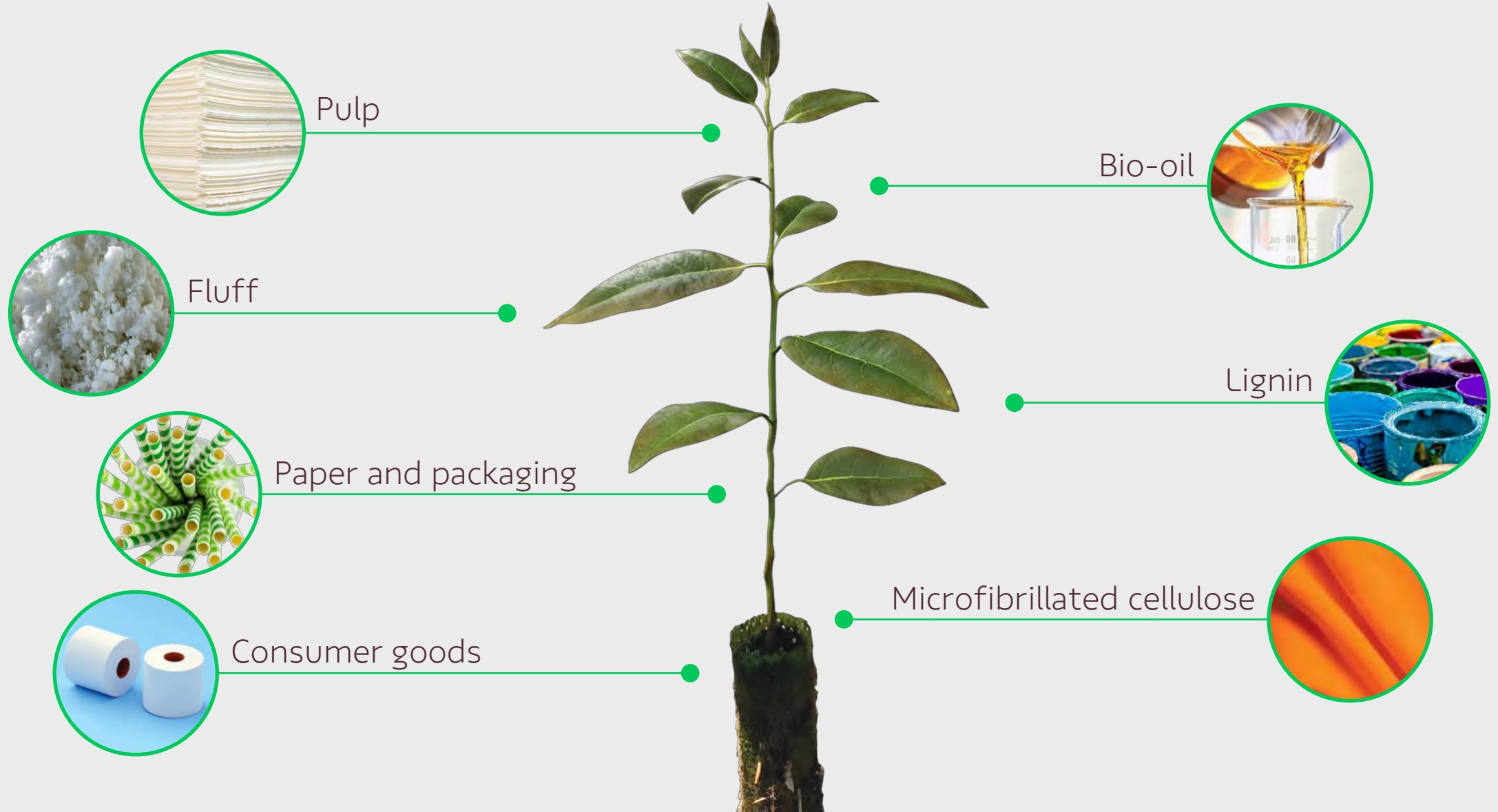


**INNOVATION FOR
SUSTAINABILITY**

WHICH WE CALL
INNOVABILITY

Our innovability comes from trees

And it is the starting point for developing alternative renewables



100%



BRAZILIAN

One of the largest consumers of eucalyptus seedlings in the world

BIG NUMBERS

500

Millions of seedlings/year

1,5

Millions of seedlings/day

63

Genetic materials

50

Partner nurseries

155

Millions of seedlings in paperpot/year
Operational capacity

3.000

Direct and indirect collaborators

577

Radius of operation of the nurseries

250K ha

Planted per year

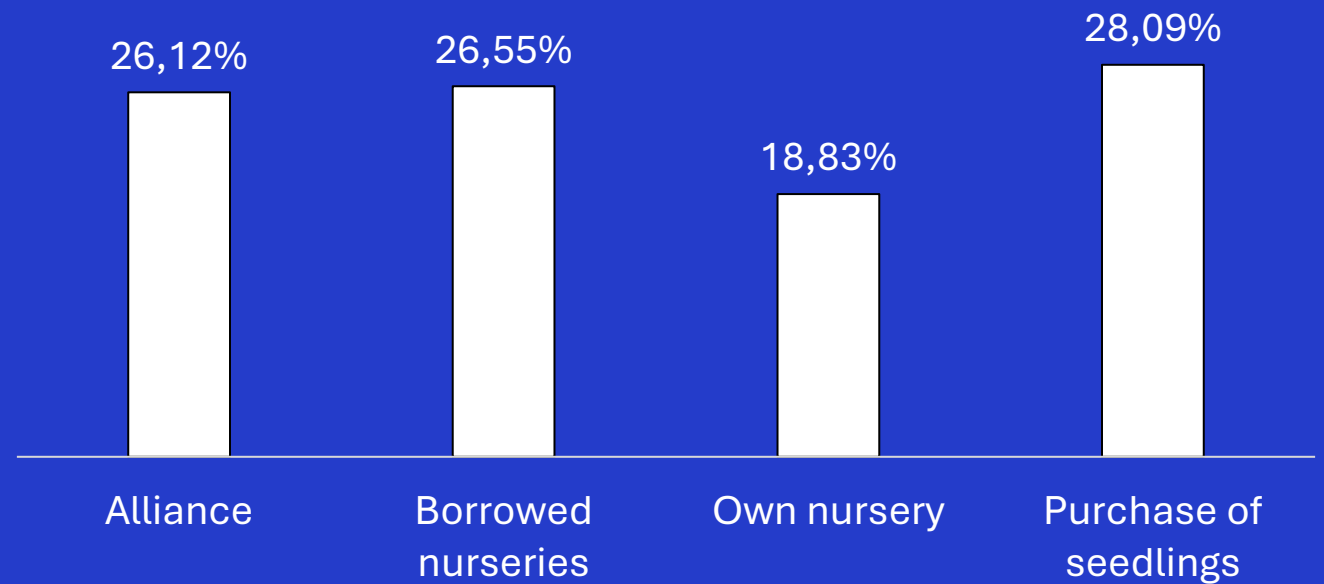
SUPPLY CHAIN SEEDLINGS MANAGEMENT



500

Millions of seedlings/
per year

Seedlings supply chain



SUPPLY CHAIN SEEDLINGS MANAGEMENT



2024

ACTIONS:

2025

1. Increase Operational efficiency;
2. Partner loyalty and seniority;
3. Structural radius reduction



- 16 STATES
- 02 OWN
- 02 BORROWED NURSES
- 05 ALLIANCE
- 42 BUY SEEDLINGS

- 08 STATES
- 02 OWN
- 02 BORROWED NURSES
- 05 ALLIANCE
- 14 BUY SEEDLINGS

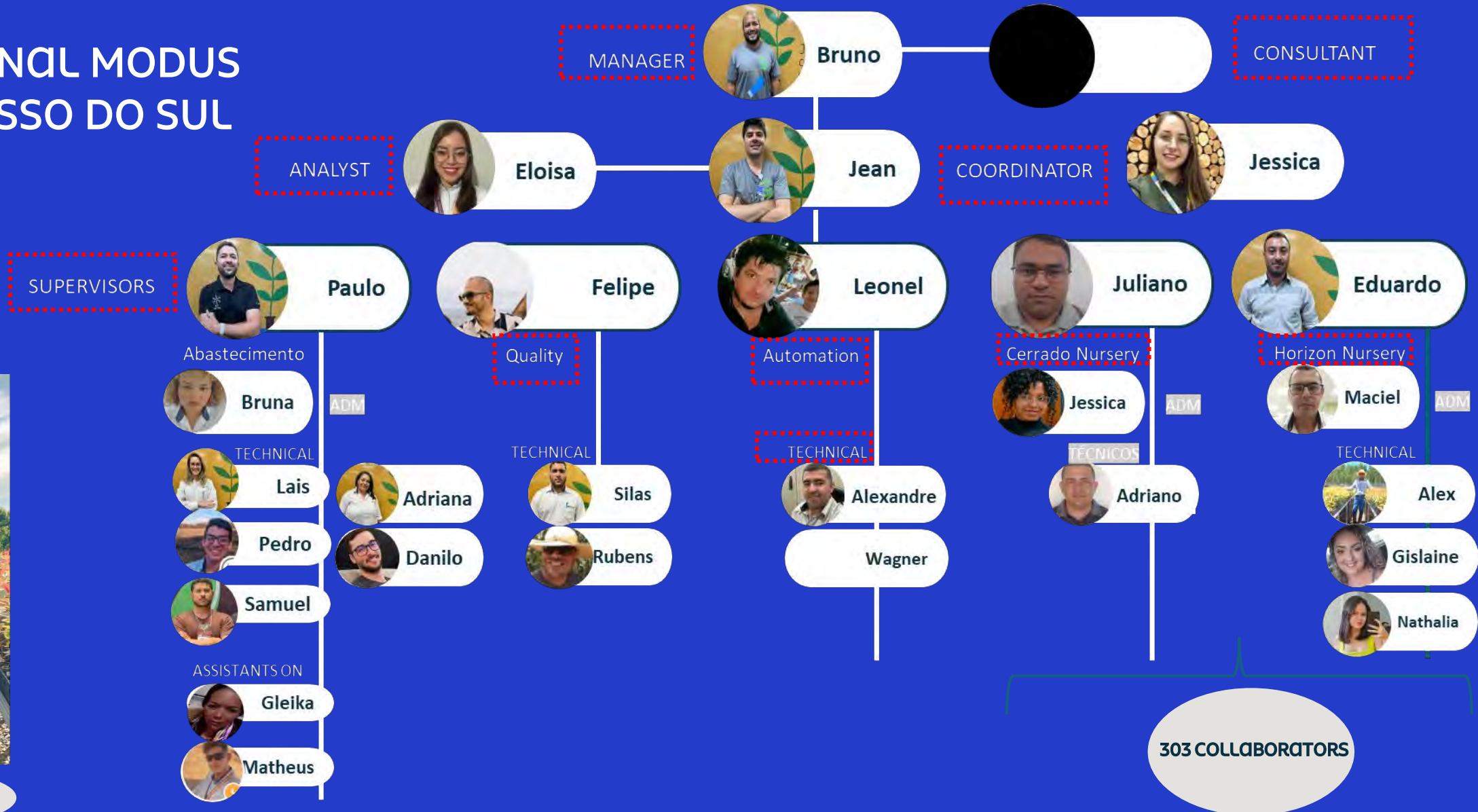
SUPPLY CHAIN SEEDLINGS MANAGEMENT



OPERATIONAL MODUS MATO GROSSO DO SUL BRASIL

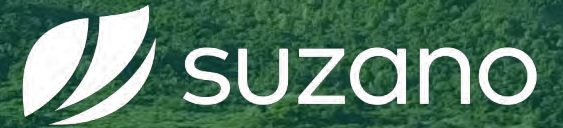


413 COLLABORATORS



303 COLLABORATORS

CHALLENGES



**BROAD
GENETIC
PORTFOLIO**



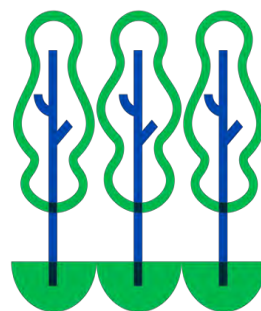
**STANDARDIZATION
QUALITY**

**ABSENCE OF
LABOR**

**OPERATIONAL
SCALE**

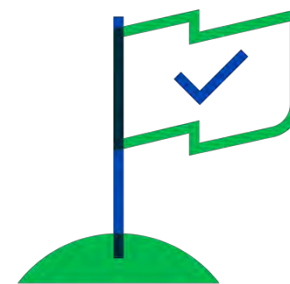


What is it



Annual event between **Forest Breeding, Management and Operation**

Objective



Performance review of the genetic materials and the management

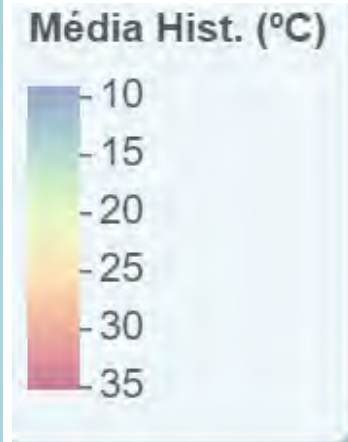
Result



Preparation of the **recommendation proposal and clonal allocation**

Search for clones suitable for growth, quality and health in the climate and soil conditions that we have available for planting.

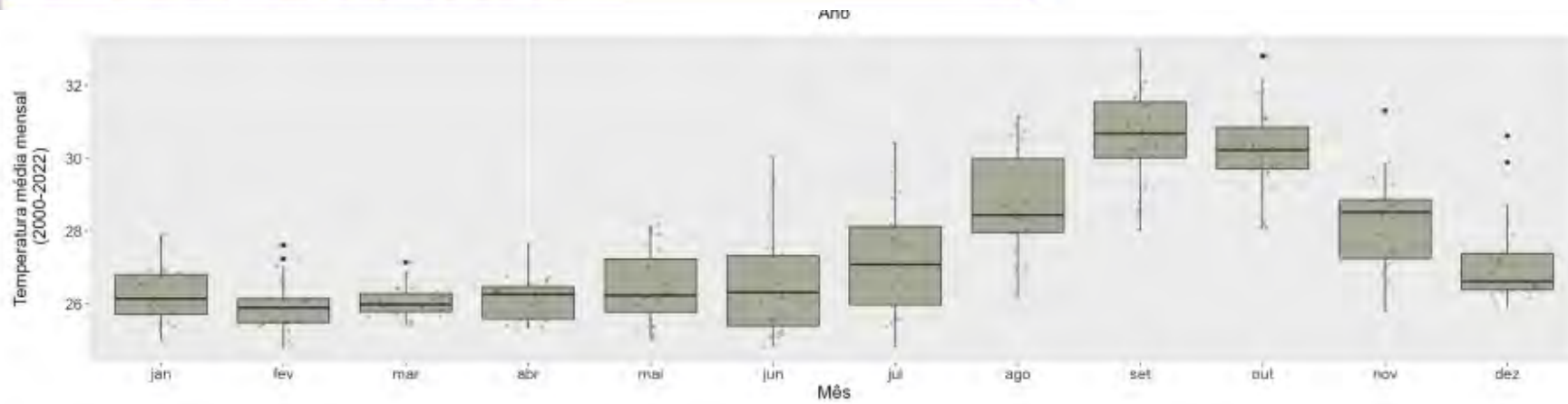
Climate Challenges



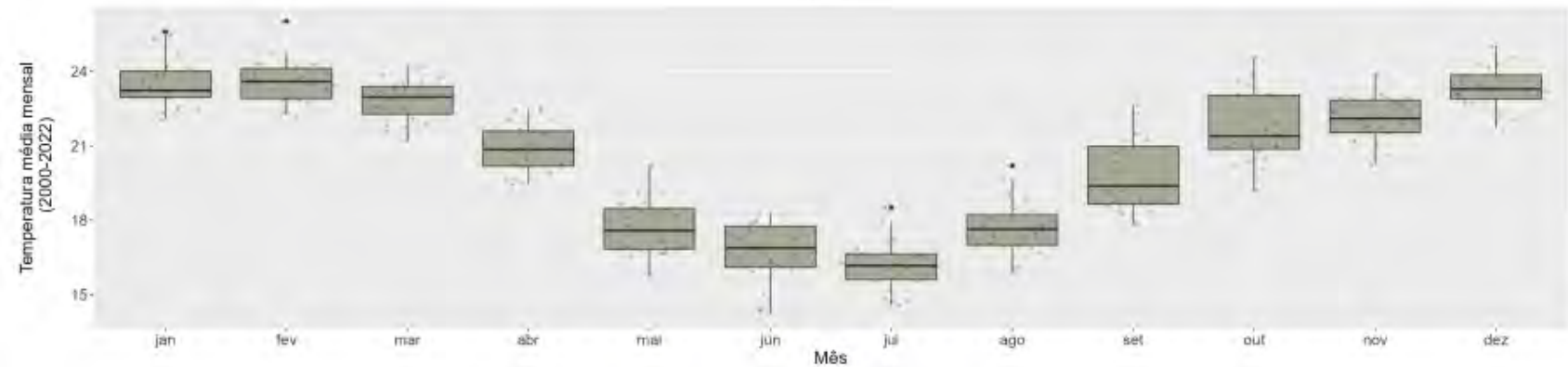
Climate Challenges



Suzano Ribas do Rio Pardo

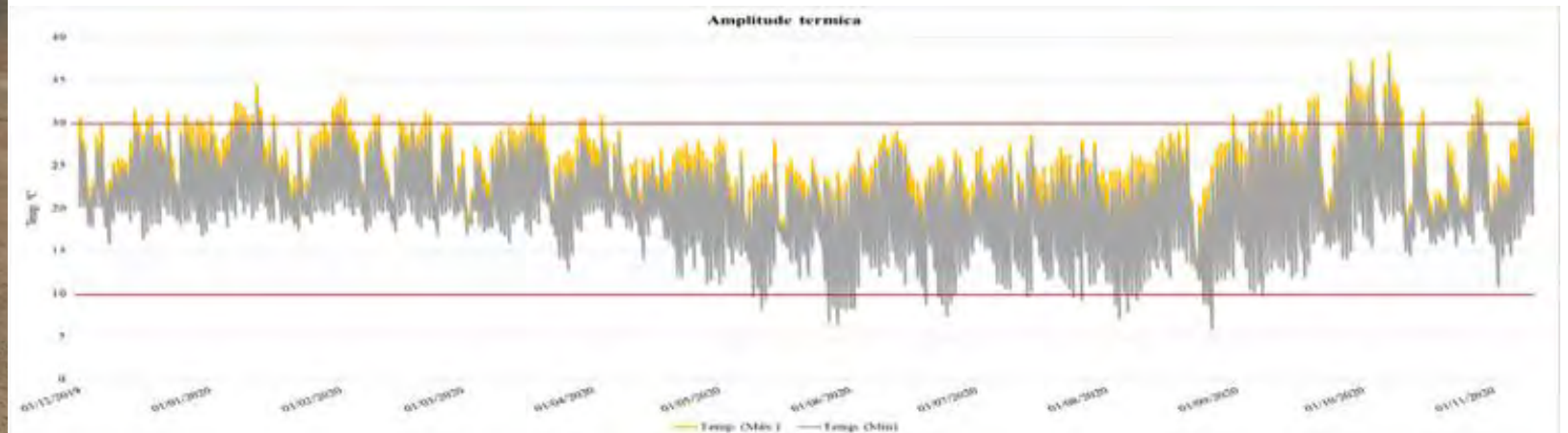
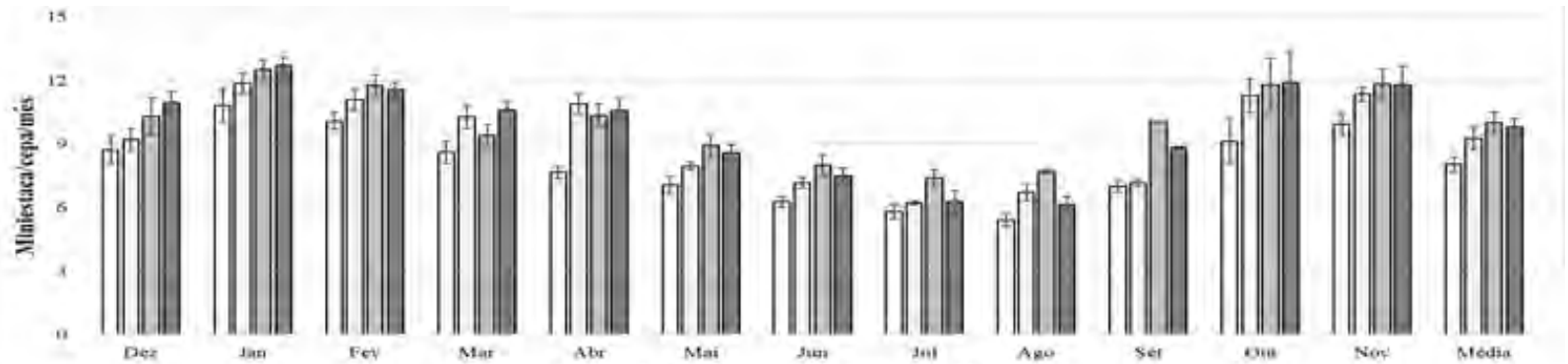


Suzano Alambari SP

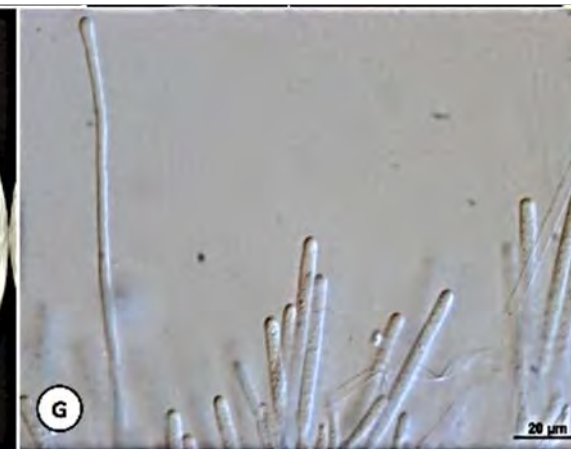




Temperature and light/productivity

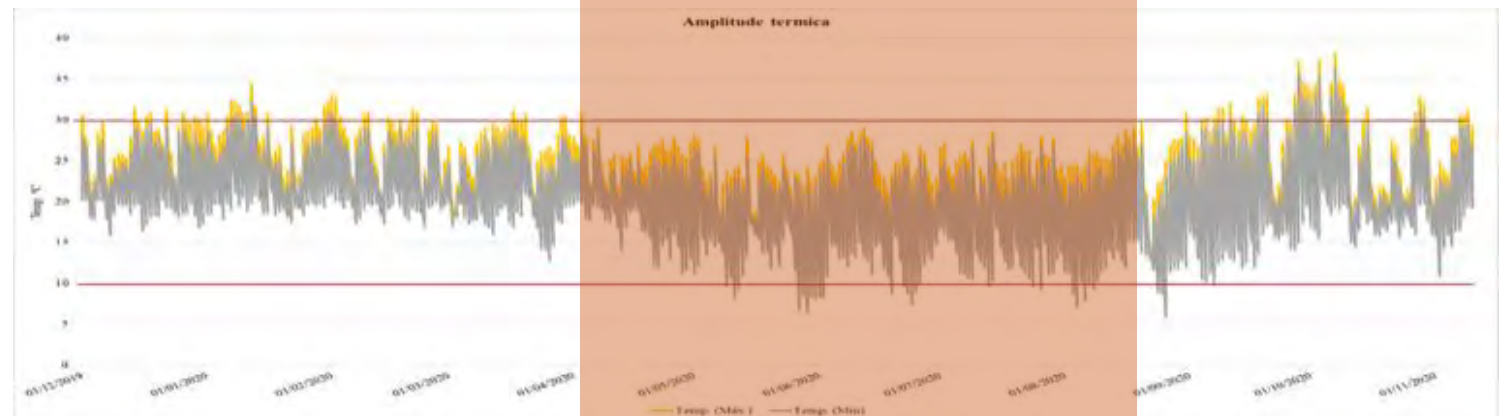
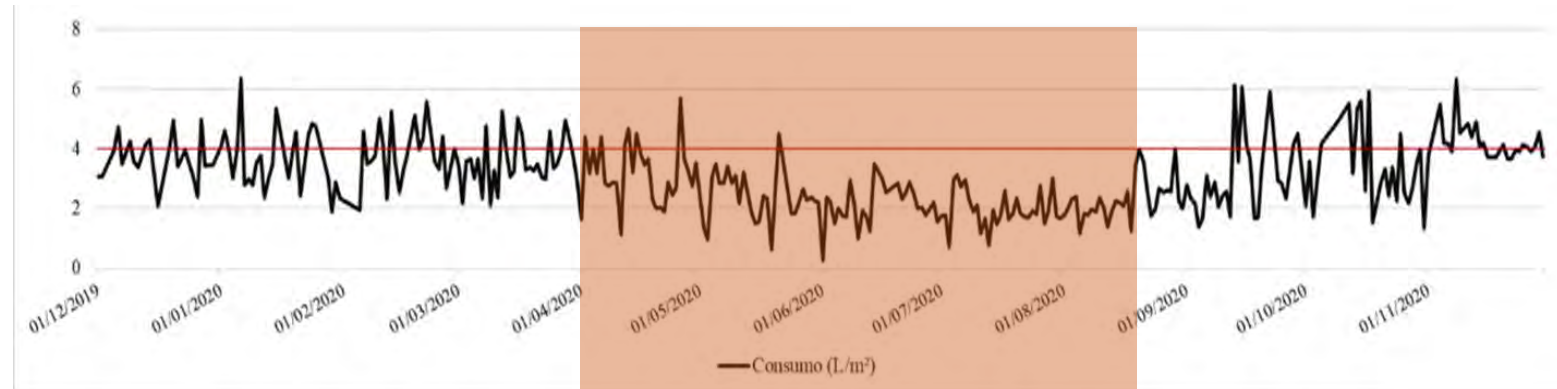


Temperature and light /sanity

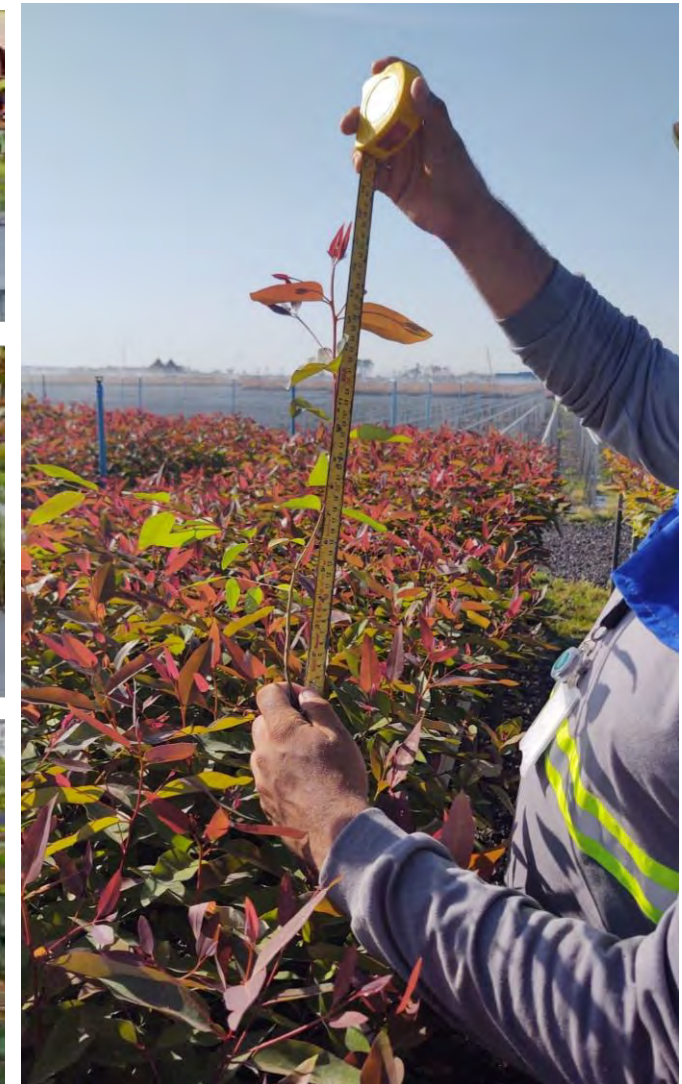
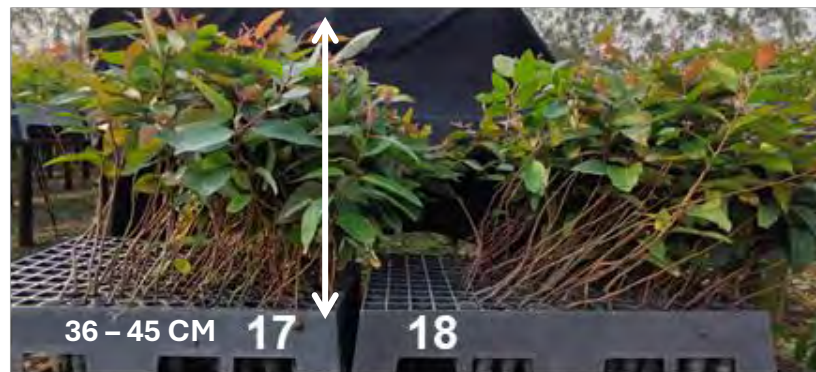
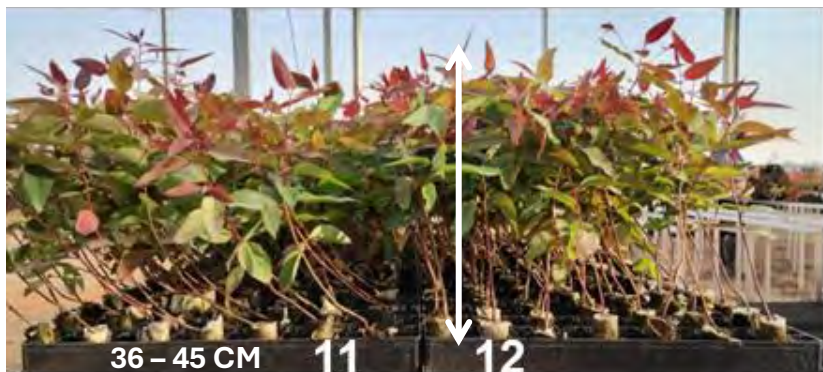




Temperature / Solution Consumption nutritious



SEEDLING PATTERN FOR MECHANIZED PLANTING



SEEDLING PATTERN FOR MECHANIZED PLANTING



- ✓ The inclination of seedlings greater than 26cm was the main factor in reprovation;
- ✓ The packaging of the seedlings (Paperpot x Tubete) did not interfere with the mechanized planting;
- ✓ Smaller seedlings are more efficient in mechanized planting;
- ✓ Seedlings over 36 cm were rejected.
- ✓ Seedlings smaller than 15 to 25 cm had survival at 28 days statistically equal to the other heights;

MANAGEMENT OF SEEDLING PRODUCTION FOR MECHANIZED PLANTING



Minigarden

Preparation of Containers

1

2

Mini Stakes

Compact Dampen

Expedition

Logistics + plantation

6

7

Quality Seedlings

Quality seedlings

EVALUATION OF SEEDLING QUALITY



ArcGIS Survey123

Formulários mais inteligentes, coleta de dados mais inteligente



Nova avaliação de mudas - Teste

DADOS INICIAIS

Localização *

23°22'S 46°1'W ± 44,9 m

Data da avaliação *

avaliação feita: 11 de julho de 2024

Selecione a avaliação realizada *

Viveiro - Expedição Campo - Recepção

Campo - Nível II

UNF *

BA ES MA MS

SP CERRA DO

Nível da avaliação *

Informe a avaliação de qualidade realizada

Avaliador *

Informe o nome de quem está preenchendo essa avaliação

Towards 2030 : High-tech clonal nurseries



CLONAL GARDEN



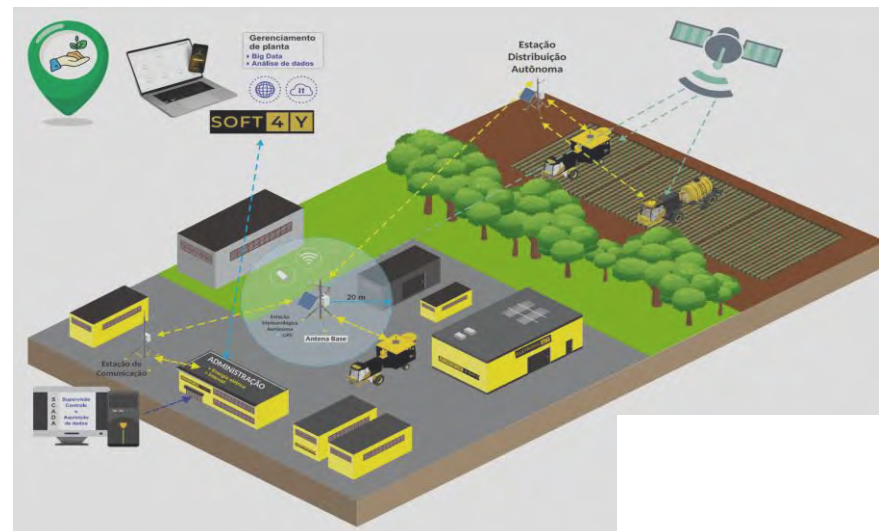
HOUSE OF THE STAKES



GREENHOUSE

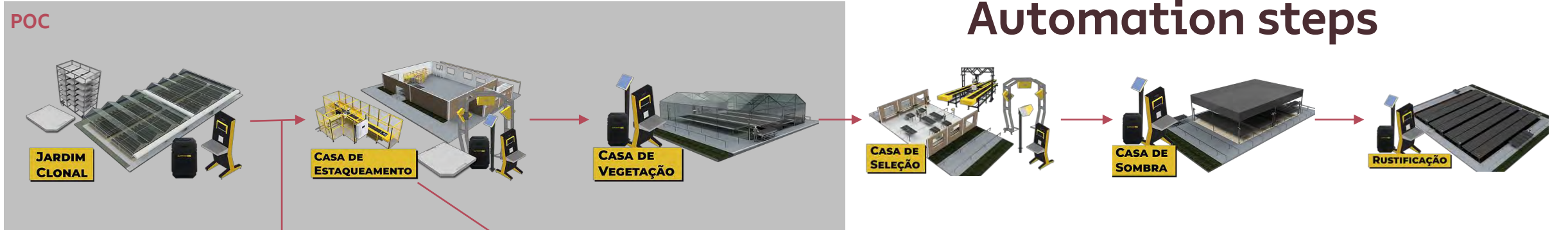


TRACEABILITY



TRACEABILITY
AND
INDICATORS ON
TIME

Towards 2030 : High-tech clonal nurseries



Automation steps



**ROBOT
ACCLIMATED FOR
STAKING
TRANSPORT**



AUTOMATIC STAKING (SAMP)



COMPLETE PROCESS TRACEABILITY



Tag RFID



Desktop Reader



RFID Totem w/
Table/Server
Totem



Humidity Sensor and
Electroconductivity
(Canaletão)

Towards 2030 : High-tech clonal nurseries



Suzano Experimental Nursery Network



Suzano MS Family (team): Seedling supply chain



Bruno Reis

Forest Nursery Manager



THANKS



@suzanoempresa



@suzano_oficial



@suzano



@suzano

Acesse nosso site :

