Innovation of the Brazilian Pine Tapping System
Replacing Wires by Staples to Fix the Plastic Bags on the Trees

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A Brief History of Pine Tapping in Brazil

• Started in 1970 when a very strong and well known Portuguese company came to Brazil
• Pine tapping in Brazil started mainly in Sao Paulo and Parana States
• Up to the 1980’s the tapping system in Brazil used the American and Portuguese system and equipments

• The nail used to fix the plastic pots on the trees caused problems in the sawmils
• In the 1980’s the Portuguese system was replaced by a Brazilian Pine Tapping System
• This new system replaced the equipments by plastic bags and wires to fix them on the trees
Should Wires be Replaced by Staples on Pine Tapping Operations in Brazil?

- Since the 1980 very few innovations have been made in pine tapping operations in Brazil
- Most of the innovations have been made on the composition of the stimulant pastes
- Plastic bags and the wires and the way they are fixed on the trees have been unchanged
- The operation continues to be strongly dependent on manual labor
- The use of wires to fix the plastic bags on the pine trees have been considered as an unsafe operation for the employees and an open door for unlawful children work at home
- It is almost impossible to use wires in trees with big diameters and multiple tapping faces
- Countries such as Portugal, Mexico and Colombia already use staples instead of wires to fix the plastic bags on the pine trees
- The cost of using staples might be lower than the use of wires in the actual pine tapping system in Brazil
Are Other Countries Ahead of Brazil on Pine Tapping Operations?

In 2014 Portugal started using staples to fix the plastic bags on the pine trees therefore Brazil is at least three years behind such development. Colombia has been using staples and Mexico has started to test this system.
What are the Potential Problems Caused by the Use of Wires on Pine Tapping Operations?

- Risk of hazards on the hands, arms and even on the faces and eyes by the tips of the wires.

- The tips of the wires attached to the bags might damage them and promote future leaks of oleoresin.

- The total cost of the preparation and logistic to use plastic bags with attached wires is higher than fixing them on the trees with staples.

- It is not comfortable for the operator to carry all those plastic bags with wires attached to his belt while walking into the pine plantation to be tapped.
Actual Brazilian Pine Tapping System:

*Wires, Plastic Bags, Eucalypt fruits*
Actual Brazilian Pine Tapping System:
Preparing the Plastic Bags with the Eucalypt Fruits
Actual Brazilian Pine Tapping System:

**Attaching the Wires to the Plastic Bags**
Actual Brazilian Pine Tapping System:
Fixing the Plastic Bags on the Trees with Wires
Actual Brazilian Pine Tapping System:  
*Plastic Bags Fixed on the Trees by Wires*
Innovation of the Brazilian Pine Tapping System

Replacing Wires by Staples to Fix the Plastic Bags on the Trees

Equipment and materials used in the proposed new tapping system
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Sequence of operations used in the proposed new tapping system with staples
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A pine tree tapped with the proposed new system to be used in Brazil with staples
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Yes, staples should replace wires on the pine tapping operations in Brazil

• Staples are safer
• Staples are faster
• Staples can be used in trees with big diameter and multiple tapping faces
• Staples are cheaper than the use of wires
• Wires cost R$0.47 per face
• Staples cost R$0.34 per face, about 27.66 % cheaper than wires
Innovations will Continue on Pine Tapping Systems in Brazil

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Thanks !!!