Determination of resin production in clones of Pinus elliottii var. densa in São Paulo, Brazil

T3.34 Tree improvement delivery system: breeding, selection, and seed and seedling production

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Abstract: The species of the *Pinus* genus were introduced into commercial plantations in the South and Southeast regions of Brazil, driven by fund incentives from 1960 onwards. With the advancement of research and the creation of forest tree breeding programs, trees were selected to establish seed orchards for wood and resin production. The proposal aims to characterize the resin production in an untested clonal seed orchard of *Pinus elliottii* var. densa, with the purpose of identifying the clones with lower productivity to establish technical criteria for proper orchard management. Additionally, it aims to enable seed collection to validate overall productivity. The untested clonal orchard was established in 1986 in the Assis State Forest, São Paulo, Brazil. The grafted propagules are from resin-selected trees, with an intensity of 1:100,000. The spacing between clones is 6 x 6 meters, comprising 600 trees. The traditional method, consisting of 18-centimeter-wide panels with 23 streaks, was used for resin tapping. The resin production evaluation was conducted through three harvests between October 2020 and September 2021. Descriptive statistics were analyzed using the Selegen-REML/BLUP program. The average resin production for the three harvests was 2.04 kg, 2.27 kg, and 2.94 kg, with an overall average of 7.25 kg. The average resin per streak was 0.31 kg. Approximately 50 trees had a total resin production in the range of 10 kg, indicating a good average production for this species. The variation coefficients were of 39%, 36%, and 32% for the three collects of resin tapping, respectively. The correlation between resin collects and resin total production ranks was 0.80 for the first and second collections, and 0.75 for the third collection. Furthermore, the correlation between total resin tapping and the amount of resin per streak was 0.92. The most productive trees maintained their productive performances throughout the year. The obtained results will be considered for the management of the clonal seed orchard, to realize controlled pollinations, and seed and propagules collections to establish progeny and clonal tests.