Naval Stores

For many years, assignments of the Southern laboratory included research on naval stores. The name goes back to sailing ship days, when tar and pitch were essential for building ships. By 1941, when SRRC began its work, naval stores meant pine gum, rosin, and turpentine. Most of these products were derived from yellow pines in the Southeast, where the industry provided income for some 350,000 people.

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It is no exaggeration to say that SRRC naval stores research revolutionized turpentine processing. Throughout the South, farmers stopped using antiquated and dangerous fire stills, substituting SRRC's steam still (Olustee process) for separating turpentine and rosin from pine gum. Besides being safer, the new process replaced the small farmer-owned operations with centralized and more efficient gum processing plants. The turpentine that flowed from the new steam stills was clear as water and of high quality. The product improvements were accompanied by a new system for evaluating pine gum, resulting in higher cash income for farmers.

More research followed, creating a variety of new industrial products derived from turpentine and rosin. For one thing, SRRC researchers developed a more direct and less costly process for making paper sizing from pine gum. The new sizings were of superior quality to conventional rosin coatings for paper. Further, SRRC scientists expanded the market for surplus gum naval stores by making them more competitive in price with other raw materials.

Scientists also contributed to development of simple, accurate methods of analysis for determining the composition of pine gum and rosin. As a result, they were able to isolate and identify the constituents of rosin. One of these, palustric acid, was a new discovery and proved to be an important component of paper sizing.

The Southern lab also found uses for a variety of rosin acids in soaps, paints, varnishes, lacquers, and printing inks. Two compounds derived from turpentine were used in the manufacture of essential oils for perfumes, and still another acid found application in the photographic industry.