WHEN THE SPRING BREEZES BLOW OR WHEN MOTHER NATURE LOSES HER COOL

Walter L. Chapman
Kimberly-Clark Corporation - Coosa Pines, Alabama

On the night of May 27, 1973, a southwest breeze came diagonally across central Alabama starting about Greensboro and took a final slap at the west face of Brasstown Ball Mountain in north Georgia after skipping from Clay County, Alabama. The total distance was the unheard of 160 miles on the ground affecting a swath from one to three miles wide. The miracle of all times is that this storm missed many population centers as it roared through at 60 to 70 miles per hour ground speed. However, the people of Brent, Alabama would surely question the above statement. This certainly was a "Killer Tornado" of monstrous proportions and intensity exceeded in recent times only by the 1974 rampage in northwest Alabama, Tennessee, Indiana and Kentucky where many population centers were hit and the death toll soared as per Guin, Alabama, Red Bay, Alabama and many more towns and communities.

Suffice it to say the power in such storms is awesome to wit: Even though the Coosa nursery buildings happened to be on the northwest fringe of the turbulent wall (this thing had dozens of spinners in conjunction - not just one tornado), the roofs of the main buildings were lifted upward and hurled 100 to 200 feet. The total roof structure except the trusses and walls were ripped away on a 45 x 95 foot building. The machinery shed and seedling storage buildings were practically demolished. The extractory and pump house lost all gravel, tar and base paper on the built-up roofs and structural damage was extensive. Practically all homes and structures within the path of the main blow were demolished – usually down to their foundations. There is no way of knowing the intensity of the wind in such storms.

Seedbeds were almost obliterated in places. Apparently there were so much sand, mulch particles, pine straw, leaves and such matter in the wind, and the wind was of such velocity, that the seedlings were chewed up. The end result was that about one and one-half million seedlings came through out of 13 million. We resowed 1,000 pounds of seed on June 2 and believe it or not, we actually grew three million seedlings which are giving us some of the best survival ever experienced following transplanting.

The damage to the Loblolly seed orchards that were 10 to 14 years of age was overwhelming. The initial estimate was 75 percent loss but subsequent losses now place the loss at 85 percent.

It is difficult, in these few minutes, for me to convey to you what this loss actually means, but it is certain that we lost 700-800 bushels of of Loblolly cones in fall of 1973 and at least 2,500 bushels in 1974. In the spring of 1973 we had a flower crop like no other we ever had. In summary, it meant the capacity to furnish the Coosa River Reforestation Program with improved seed orchard stock was cut from 100 percent to 15 to 20 percent at present. It will take at least eight years to get back

on board with 100 percent furnish of seed orchard stock. However, we will, with the help of our good neighbors, actually enchance our program over the same period of time. We are recouping by using proven clones of our own plus those from other programs. In other words, at the end of the eight-year recoup period, Kimberly-Clark will be using seed that should be a grade better than would have been the case; although, the next step would have been taken later anyway but this forced concentrated action.

Salvage of damaged trees where possible was initiated but it became apparent that a tree 10 inches DBH or larger could not support its life's functions unless more than two healthy limbs remained on the trunk stub.

Some areas were not hit so severely as others. In general, the north-west section of the Loblolly orchard was least damaged. Damage here was spotty as the side spinners, as I called the little satellite tornadoes that accompanied the main blow, took out spots and strips. The overall pattern of this thing resembled the backbone of a catfish. The main blow represented by the backbone and the satellite tornadoes forming on the fringe and moving into the wall at distances of 1/4 to 1/2 mile from the wall. The projecting bone pattern varied from 100 feet to 200 yards apart as it passed near Childersburg.

The single tree that is missed beyond all others that Kimberly-Clark lost in the storm was the large pecan tree at the nursery. This tree was the large one in the center of the work area near the main building where practically all activity centered. If visitors came, they were usually greeted in the shade of this tree if it was during the summer. Shade tree mechanizing was done beneath it, and many a sandwich was consumed at lunch break in its shade. It is missed! Especially when I sit on a car seat that has been sitting in 100+ degree sunshine.

Some of you may remember the hardwood 40 south of the nursery. This happened to be in the "main blow." The destruction to this area of large oaks, sweetgum, ash, hickory, etc. was unbelievable. No one would even look at this timber with the intent to salvage any of it. Hence, the decision was made to windrow the mess and burn it when we can. The quirks in such storms are many. An open machinery pole shed stood next to the area. This shed lost only one piece of corrugated metal roofing in the midst of all this destruction.

One thing that was very apparent following this storm was that young Sycamore withstands wind better than most hardwoods. The Sycamore seed orchard was relatively undamaged.

By the way, from this experience I have a rating for several species of hardwoods according to their resistance to wind damage which is:

Tupelo, Sycamore, Sweetgum – very good
Ash, Water Oak, Other Oaks – Good
Yellow Poplar, Cottonwood - Relatively poor when compared to others above.

This rating is based on observations of young hardwoods that were growing near the nursery. In addition to the above, bald cypress appears to be very good and of course, grafted Loblolly pine in seed orchards is terrible.

The damage to a 13-year-old progeny at the nursery site brought the test to a screeching halt. Obviously, this is a great loss in itself as no tests were left intact at the nursery for "Show Me" tours and beyond that we lost the oldest progeny we had. Thank goodness, we had four reps of this planting elsewhere.

From this and other experiences I would advise planting progeny in several different locations rather than one. Some of these risks are: wind, fire, landline changes, powerline and highway rights-of-way, poachers and various other things that can and do happen.

Young grafts are rather resistant to high winds. No grafts young or old broke at the point of union of scion and rootstock. Therefore, it is a matter of age and in this case height. Invariably, the top was broken out of the second generation selections in the progeny areas where the storm hit. These selections projected above the other trees and were exposed.

I cannot help mentioning the vigor of these second generation selections. One three-year-old graft is probably in excess of 12 feet in height at this time.

Relatively minor damage was done to the six to seven year old longleaf orchard. About 29 percent of the ramets went down but the longleaf orchard had not been rogued and was set at 15' x 15' spacing. Hence, this loss can be absorbed with no great difficulty.

What have we done following the storm? Well, after the shock subsided a little, we began cleaning up the place; then we called in a contractor last summer to repair and rebuild the structures and began piling the debris in the orchard.

I have to stop and wonder how we managed to accomplish so much last season. The orchard has been cleaned and we intend to fill in the open areas with grafted ramets during the next two years.

Extensive damage occurred in some areas. One particular 6.5 acre block probably has a dozen trees (or parts of trees) remaining. As I am convinced field grafting produces the most vigorous ramets which will "move on out" - this method will be employed on seed orchard root stock transplanted next winter.

To sum up this presentation, I might say this whole thing was "quite a shock." The loss was great, but the one bright aspect about this episode is that we should be able to do the rebuilding job and improve on our previous situation by changing and taking advantage of past experience. The nursery is almost back to normal and we will recoup and expand the tree improvement program during the next three years.