

THE FEEDER TUBE

SPECIAL 50TH
ANNIVERSARY EDITION

BY

Mauget®

January 2008

1958



Dale Dodds



Jim Mauget

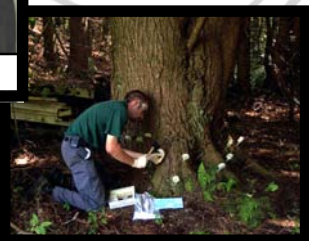
The J. J. Mauget Staff circa 1964.
Far right: Jim Mauget
Back Row, Third from left: Allan Dodds



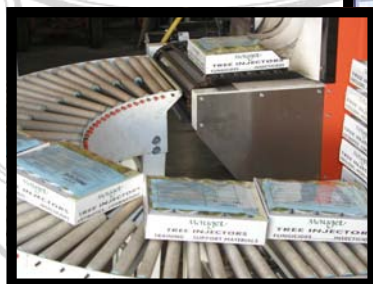
Original Mauget production line



Generation I



Generation II

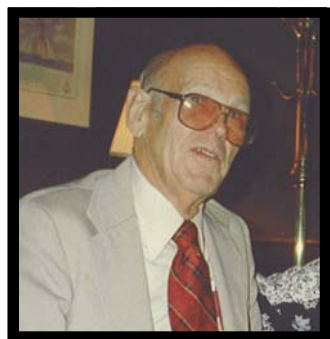


The QI-20

2008

REMEMBERING DALE DODDS

SCIENTIST * RESEARCHER * VISIONARY * FATHER * FRIEND



Not long after Dale passed on, I could not help but think of the dozens, and I do mean dozens, of subscriptions to science publications he had constantly subscribed too.

Dale did not just have subscriptions to chemical or arboricultural publications, but rather he subscribed to all disciplines of science. Giant stacks of issues would pile from floor to ceiling in his office, his home or any space available. Even the floors that he would pass regularly were scattered with a variety of magazines. No clear area was immune.

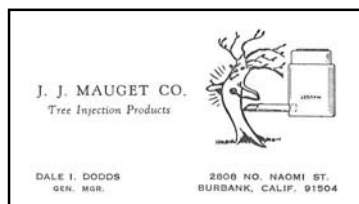
If one entered the inner sanctum of one of his several vehicles, they would have to wait patiently as Dale cleared a space to sit amongst the piles of years of various issues. To Dale, this was his mobile library.

To the outsider, one could think this was chaos, but in this chaos there was great order. What I and others found astonishing was that in the middle of any conversation, if Dale recalled an article on whatever particular subject was being discussed at the time, he could suddenly reach over, even to the back seat while driving, place his hand into what seemed a random pile and not only pull the magazine with the reference, but turn to the exact page he wanted.

I have never seen anyone else with this ability and this talent never failed to simply amaze whoever he was with at the time. It was as if Dale had some kind of card catalog in his mind.

Oh the revenues lost to those publications.

**-Arnold Farran
Research & Development Coordinator
1988 to present**



In the late 1980s, we ran into a little snafu at EPA and Dale and I made several trips to congressional offices in Washington to address the matters at hand. On one occasion we saw two people walking towards us in the Senate office building. As they got closer, our lower jaws must have descended as we began to recognize who was coming towards us. One of the gentlemen smiled and said hello. It was none other than Bob Dole, US Senator from Kansas, who subsequently became the 'Republican nominee for President of the United States.' Dale and I regarded this encounter and recognition as a really big honor.

- Don Diamond - J. J. Mauget Co. Attorney

After graduating from college I worked full time at J. J. Mauget from September 1972 to October 1973 when I left to start my Air Force career. At this time the company was located in Burbank, California. I don't remember what the production numbers were but it was nowhere near what it is today. During this time my dad became involved in some legal issues that developed between Mauget and a distributor. In January or February of 1973 this precipitated a heart attack that sidelined him for a number of weeks. It gave me an opportunity to experience my first efforts at managing an office and assets of the company. An experience I have never forgotten which prepared me well for the future.

-Dale Dodds Jr.

Our office from 1987 until 1997 was located in a section of LA known for being a gang infested area which hosted weekly knifings and shootings in the streets in front of the office. The back which abutted up to the Pasadena freeway was a settlement of homeless people with their own set of challenges. Weekend break ins were a common event. After one such break in when we had been vandalized particularly badly, the offices were in various stages of destruction with computers, papers, etc. thrown everywhere. While the police were dusting for prints and surveying the damage they looked in at Dad's office and one was overheard saying, "this place looks like it was hit the hardest". Dad adjusted his glasses, looked at the officer with a straight face and said "no nothing seems to have been disturbed in here". The officers just looked at each other and went back to their investigation.

-Nate Dodds



Dad was a driven man. Some might say a workaholic. If not at work at his regular job, he would be working on his rental properties, or a potential business venture such as a synthetic milk product. At home we laughingly referred to this as "father's milk".

On many occasions he would like to talk about how ideas and solutions to problems came to him, especially in the early morning hours like epiphanies. He believed that the early hours were when he was most connected to the spirit side of life. I remember once mentioning the term "passing away" in relationship to our mortality. In response he told me with a smile "I like to say passing on." A sense of humor and a reverence to that of the spirit was always knitted to the fabric of his character. Nearing the end of Dad's life, he was asked if he would prefer to be buried or cremated. Though very weak he responded with a smile "surprise me." Ask me what this man's greatest legacy is and I will tell you it is what has been passed on to the heart.

-Charlie Dodds—Number 4 son





Dale Dodds circa the mid 1940's planting an avocado tree in his backyard that stands to this day

Always an Environmentalist

By: Nate Dodds, President of J. J. Mauget Co.

Long before it became a political hot topic, our father Dale Dodds was dedicated to protecting the natural environment from destruction and pollution. Only as I look back on sixty years do I see what a remarkable difference he made in our rearing, particularly from the standpoint of his consciousness of protecting our natural resources and the environment.

I recall as a youngster of 6 or 7 years old being dragged to East Los Angeles with our Dad and Grandfather to help with the commercial buildings being constructed on land purchased during the depression. Our big jobs included sweeping up debris and being given a #3 coffee can of bent nails our grandfather or Dad had removed from salvaged lumber. Our job was to sit with a claw hammer and straighten each of these bent nails and place them in another coffee can to be used in other constructions. This lesson brought our attention to and undoubtedly branded us with conserving everything we could. This was a depression era trait that would be carried down to future generations to come. This attitude of saving tin cans, bacon grease, newspapers, etc., also carried over from the war effort of WW II. I can easily remember the dark days in the early 1950's when LA mayor Sam Yorty abandoned the recycling programs then in effect for LA and which prompted other cities to quickly follow suit.

Later in the early 1960's I recall our father buying a 1961 Chevy pick up which he immediately had converted into a dual fuel propane/gas vehicle. This poor truck was absolutely gutless on propane but he explained the benefits of how clean this fuel was and that the oil would last three to four times longer due to fewer pollutants. In 1961 he also explained to us that eventually, we would strip the world of oil reserves and be at the mercy of the other major oil producing countries. That was the first of a long line of propane dual fuel cars he would own and even in his later years he acquired a fleet of 68 Chrysler Imperials all of which had been converted to propane by their previous owners.

Although we believed our dad to be a little eccentric at the time, Dale Dodds was an environmentalist and a true visionary who saw early on the disposable society we were turning into with very little regard for the consequences of our actions. He chastised our leaders for not conserving our oil reserves and using others first. And he saw the importance of finding tree care systems that did not jeopardize the environment. He was decades ahead of his time.

Preserving Trees at the Moscow Country Club

"Western Expertise and technology join Russia acumen to initiate an intensive tree-care program at Russia's first 18-hole championship golf course."

On June 1, 1988, during the Gorbachev/Reagan summit in Moscow, it was announced that the conception of a golf course in Russia would come to fruition. During the course's construction, course supervisors noticed some weak and declining trees on the site. They attributed these chiefly to the environmental changes the trees experienced. These included acid rain, changes in the water table, soil, temperature, light, damaged roots and trunks, and changes in grade at the tree's bases.

The stress became most noticeable near the end of the 1992 summer when the course experienced severe drought along with intensive construction work on the front-nine holes. The decline continued the following year. As a result, a heavy infestation of bark beetles occurred.

Ralph Osterling, a California Registered Professional Forester and President of Ralph Osterling Consultants Inc. was brought in to assess the situation and develop a program of forest maintenance for the course.

Osterling arrived in Moscow in early spring of 1994. He brought 13 cases of tree protectants and nutrients from J. J. Mauget Co. for tree injection. These most probably were the first tree pesticide products to appear in Russia.

Four thousand capsules of Mauget's Stemix (nutrient), Inject-A-Cide B (insecticide) and Fungisol (debacard fungicide) were injected into the sap stream of weakened trees. The grounds crew also completed a sanitary cut at that time. Both measures sharply reduced the quantity of pests and increased the trees' vigor. As a result, the death rate decreased from 600 trees in 1993 to 115 in 1994.

**-From Grounds Maintenance Magazine January 1996
Alexander Kushinin, Moscow Country Club, Russia**

"I remember trying to get my Mauget shipment out of customs in Moscow, Russia. They apparently were certain that the warning labels meant it would kill everyone so they had it in an outside container where contraband had been stored and pilfered. The "storage area" looked like a junk yard with pieces of equipment lying around in disarray.

After having my interpreter argue and discuss the lack of danger with Mauget products, they softened. Then they agreed when I handed over a roll of 100 Ruble bills that was about the size of a small roll of toilet paper. At that time both papers were worth about the same! Finally off we went with the materials, injected the trees, saw the results and everyone at the golf course was happy."

Ralph Osterling

President

Ralph Osterling Consultants, Inc.

The Evolution of Mauget Micro-Injection

By: Ann Hope - Technical Support Representative & Mary Peters

Injecting material directly into trees is nothing new. It is said that Leonardo Da Vinci, in an attempt to stop people from stealing his apples, would drill holes into random trees and pour in arsenic. And so began the earliest introduction of (micro) injection technology in trees.

In the story of the J. J. Mauget Co., it began some time in the late 1940's. While in the hospital recovering from major surgery, Jim Mauget began chatting with his roommate Walter Barrows, a well known arborist in southern California. They entertained the question: could a tree take in materials the same ways people do with an I.V.? This was the birth of micro-injection technology.

The J. J. Mauget Co. was incorporated in 1958 and from 1958 to 1968, Dale Dodds was Jim Mauget's main supplier of chelates. Over the years, Jim and Dale became good friends. By now, Jim had created the canister style capsules of the Generation I system for his pesticide Inject-A-Cide B. This new design was truly exceptional for the fact that it was a closed system with no exposure to the applicator or the environment.

In 1968, Jim offered Dale a position as a partner to assist him in formulating injectible fertilizers and other suitable products but their partnership was short lived. In 1970, Jim Mauget passed away suddenly from a massive heart attack and Dale began the process of acquiring the outstanding stock from Shell Chemical and Zero Halliburton. He also continued his research to come up with the most dependable and environmentally safe way to inject chemicals into a tree.

Several early designs used aluminum feeder tubes that were hammered into the trees trunk to deliver material. In one of the first research projects, an open top capsule was attached to a feeder tube. A formulation of water and Benomyl (Benolate) was poured into the open top capsule in hopes that it would drain down the feeder tube into the tree. Unfortunately, the water drained into the tree with no problem but the chemical did not. The material was not systemic, meaning the inert ingredients plugged the vascular system of the tree and would not allow it to flow.

Dale returned to the drawing board. Soon he determined that there was a molecular chain that had not yet been patented that made Benomyl systemic - Debacarb. With this discovery Mauget's patented fungicide **FUNGISOL** was born.

With help from other experts in the field of trees Dale continued to refine the micro-injection process. He considered the location of the injection site more in depth. One of the major contributors in this area was Dr. Alex Shigo. A close friend of Dale's, Dr. Shigo had been profoundly involved in a fourteen year study regarding the effects of injection wounding. While he was a proponent of micro-injection technology and felt that it did have its place in the field of tree care, he never outright endorsed it. But what Dr. Shigo did conclude was that the best way to inject a tree was to make a small shallow wound in the meristem cell area of the tree. This would not only reduce the wounding damage to the tree, but it would provide better translocation of the materials.

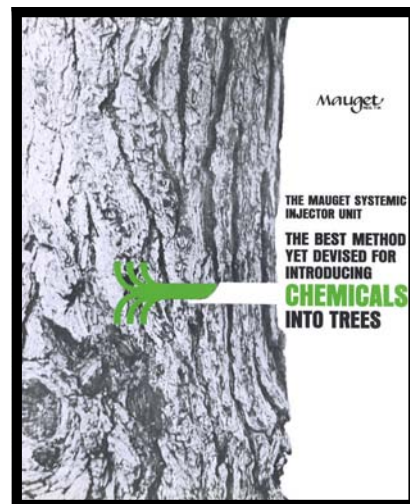
Another huge contributor in the evolution of micro-injection was Dr. Arthur C. Costonis. Through his extensive research on injury caused by micro-injection versus macro-injection, Dr. Costonis realized that the Mauget technique could be improved upon by replacing the insertion tool with an 11/64 diameter drill bit in a portable drill. These tools could ensure that the wound would have a clean edge and the depth could be precisely controlled. It was discovered that these factors greatly facilitated wound closure because the degree of injury resulting from the mechanical wound was minimized. In addition, the injected material was more rapidly translocated away from the injection site.

The early days of the Generation I capsules were not without their setbacks. Though typically a successful technology, by its very design the Gen I capsule could inherently leak under different circumstances. Additionally, the capsule was limited to only a volume of approximately 8ml, experimentally - the max safe volume being 6 mls. It was also becoming apparent that certain chemistry required larger volumes of material to be injected. Dale Dodds continued to devote his life's work to fixing these problems and creating the best and most reliable micro-injection system until the time of his death in 2001.

After forty years of using the Gen I system, Mauget began to seek out a new capsule design. In 2004, the Gen II technology was introduced. This new design addressed most of the short fall issues of the Gen I system with such advancements as a sonically and hermetically welded lid making a one piece leak proof, fully enclosed system. Additionally, the design could hold a larger volume of material with a capacity of up to 20mls, but practically holding 10mls. The Gen II capsule is still the main technology of Mauget and it is continuing to evolve to this day.

Mauget continues to evolve as well, carrying on the legacy of Dale Dodds by seeking out the newest and best tree injection technology. After fifty years as the leaders in the tree care industry, Mauget has unveiled their newest design; a quick injection system known as the **QI-20**. A spring loaded mid pressure device, the QI-20 can deliver up to 20mls of material under an estimated 40 PSI in just minutes, taking advantage of the tree's ability to accept larger volumes of material and inflicting fewer injection sites.

What began as a conversation in a hospital room over half a century ago has evolved into a mission to provide environmentally friendly chemicals to trees in an environmentally friendly manner. Mauget has now been protecting and healing America's trees for fifty years. Building on the foundation first set down by Jim Mauget and Dale Dodds, Mauget has redefined the arboricultural industry through the perfection of its patented micro-injection and micro-infusion systems. Mauget is forever on the path to better science, developing cutting edge tools, techniques and chemistry for the tree care professional. And we're just getting started.



A Family Affair -

The Dodds Boys Carry on Their Father's Legacy



Nate Dodds
President of
J.J. Mauget Co.

Prior to joining the Mauget organization I spoke with my father Dale Dodds on many occasions about the business, his challenges and accomplishments. My background and experience had been in a variety of middle management roles over

twenty five years with a major office equipment company and I saw an opportunity to bring that experience to Mauget.

With the many social conversations I had with my Dad regarding the business and its evolvement and seeing the excitement and self fulfillment he seemed to be experiencing, I found myself being drawn to the business. In 1985 I made up my mind that I would make the transition following my 25th anniversary with my previous employer (August 1987). I presented my proposal and plan to my Dad and after careful and laborious consideration he gave his approval.

In January 1988 I gave my notice and made the move. I came over to Mauget the following Monday and began as a trainee under my son learning the production line. Our revenues were a long way from cracking the million dollar mark and our staff consisted of Dale Dodds, two office people and three production workers including a manager and myself. The opportunities to advance the performance and organization of this small company were enormous.

In 1987, Mauget had a net return of 2.0%. In 1988 we had a net return of 14% and for the first time in Mauget's thirty years had broken the million dollar revenue barrier.

In 1991 we suffered the results of an EPA maintenance fee which was inadvertently not paid and all of our pesticides were summarily cancelled by EPA. Most were reinstated within months however it took three years to reinstate Fungisol. This resulted in a revenue loss of 35% and net return were a heavy loss from 1991-1994. This represented a period where Mauget was the closest to closing its doors.

In the year 1994 we introduced our first abamectin material and in 1995 Imicide was introduced which contributed strongly to our increase in revenues which continued for the following twelve years. In 1999 the USDA chose Mauget to assist them in combating the Asian Longhorned Beetle, making Mauget the only injectible Imidacloprid specified for ALB protection by the USDA.

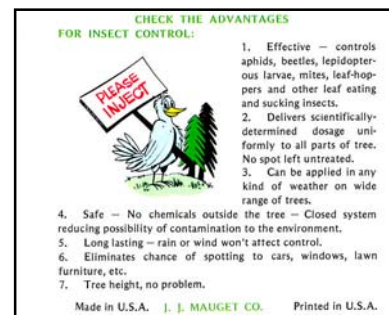
I have had many frustrations and disappointments along the way but being a part of a business that has the protection of the environment and living plants as a cornerstone for its being in existence delivers a feeling of honorable purpose that can never be matched in the industry I came from. I have never regretted the move I made and the opportunity to carry on our father's legacy. I feel a passion for this business that many people only dream of in working for corporate America. This passion and purpose to fulfill our father's dreams of taking this company to its full potential as the leader of our niche technology keeps me going.

Charlie Dodds
Vice President
in Charge of
Research &
Development



My earliest recollections of Mauget and tree-injection go back to 1964 when I was in the fourth grade reading an article in the Weekly Reader called "Trees Get Their Shots Too". It was about a project going on in the city of Milwaukee to save the city elm trees that were being threatened by Elm Bark Beetles and Dutch elm disease. The article told of how tree-injection was helping to save them. It was at this time that my second oldest brother Allan began working for Jim Mauget. Allan was able to get this job with the help of our father (Dale Dodds) a chemical engineer/salesman with ICI, who had developed a close relationship with Jim Mauget while selling him chelates. I remember Dad would talk to us at the dinner table about the work Jim was doing with his new technology and how he was helping him develop early fertilizer formulations. My father was very interested in the possibilities for tree-injection. At that time I hadn't a clue that in 1968 he would become an owner and take charge of the J.J. Mauget Co.

My own early days working part time for the company while I was still in school, were spent helping Don Lenardson (then chief line operator/production manager) run product. In those days we had a street tree in front of the office that we would pour water from fertilizer runs on. This tree ended up growing to be about three times the size of all the other trees of the same species and age on the street. I also recall my father's lab and office having hundreds of bottles containing sample formulation which he would observe over time. On one occasion I remember some of these containers exploding in the office. Fortunately no one was injured and no serious damage was sustained however it did create quite a mess. To this day I have no idea what he formulated that caused the bottles to blow. For my father this was basic research.





The first stock certificate issued to Jim Mauget in 1958



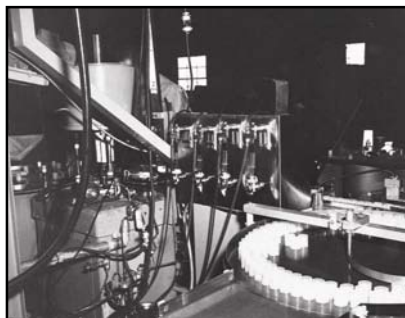
The first pallet of Gen II—2004



Dale and Nate consulting—1955



Swiss Conference—1991



Mauget Production Line—1964



Mauget certifications—early 1970's



ALB Program Chicago—2000

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MAUGET FEEDER TUBE

THE PIPE LINE FOR TREE INJECTION NEWS INTERCHANGE

SUMMER 1984

PAPERS INVOLVING MICRO-INJECTION

At the Cone and Seed Insects Working Party Conference in Athens, Georgia in August 1983 the following:

METASYSTOX-R INJECTIONS INCREASE SEED YIELD OF DOUGLAS-FIR IN CALIFORNIA, OREGON AND WASHINGTON by Thomas W. Koerber and George P. Markin USDA Forest Service Berkeley, CA.

STEM INJECTION OF INSECTICIDES FOR CONTROL OF WHITE SPRUCE SEED AND CONE INSECTS. by W. H. Fogal and S.M. Lopushanski Petawa National Forestry Inst. Environment Canada, Canadian Forestry Service Chalk River, Ontario

At the International Entomological Meeting in Hamburg, West Germany during August 1984 EUROPEAN WHITE BIRCH, BRONZE BIRCH BORER CONTROL, ASHLAND-MANSFIELD, OHIO 1982-83 by D. G. Nielsen, M. J. Dunlap and L. S. Lanphear.

Published in the June 1984 issue of the Journal of Arboriculture: THE OAK DECLINE COMPLEX by W. D. Thomas and Christopher A. Boza.

Awaiting publication in the Journal of Arboriculture: SUPPRESSION OF BACTERIAL LEAF SCORCH SYMPTOMS THROUGH OXYTETRACYCLINE MICROINJECTION. By S. J. Kostka, T. A. Tattar and J. L. Sherald*. U. of Mass and *National Park Serv.

MICRO-INJECTION WORK SHOPS

Since the area distributors for Mauget Products are holding Training Seminars whenever there is an impelling need, we are working on plans to have highly qualified professionals hold workshops in numerous parts of the Country during a season which will allow in-the-field diagnostic training. The 1984 Work Shops covered the following: (1) Tree Physiology and Symptom Development. (2) How to Diagnose Tree Problems. (3) How, When, and Why to Micro-Inject Trees. (4) Field Demonstration and Hands-On Use of Micro-Injection. (5) Hands-On Experience in Diagnosis and Use of Shigometer. In the 1985 Work Shops, the format will be similar with emphasis being placed on (1) Climate Effect on the Timing of Injections. (2) Temperature and Moisture Conditions Favoring Diseases. It is our goal, through the addition of pertinent concepts each year, to make the Work Shops a worthwhile contribution to upgrading professionalism in the Arboriculture Industry.

INTERNATIONAL AIR SHIPMENTS

IATA (International Air Transport Association) Restricted Articles Regulations now makes shipments by both passenger and cargo aircraft available to all of our insecticides. This greatly facilitates overseas shipment of INJECT-A-CIDE B.

1984 PLASTIC FEEDER TUBES

The transition to the new plastic feeder tubes has generally been accepted as a definite improvement. They have eliminated the tendency to soften under hot humid conditions. The translucent quality has been recognized as a real advantage because with most products it can be observed from some distance when tubes are empty. In a few instances some of the beveled ends collapsed within the tree, this was soon remedied by changing from a 11/64" to a 3/16" drill bit.

DWARF MISTLETOE

Upon retiring from Colorado State University, Dr. Arthur D. Moinat has been very actively looking for ways to control this parasitic plant in a test plot in Estes Park, Colorado. The most exciting thing to happen is the aborting of mistletoe seeds after the micro-injection of the host tree with growth regulant. The testing continues.

PHYTOPHTHORA (BLACK ROOT ROT)

Due to the large loss of avocado trees to this fungus, there has been a great amount of work done at the University of California, Riverside to find ways of controlling it. Dr. Michael D. Coffey became aware of the Mauget Micro-Injection System at the 1983 International Phytopath Meeting in Melbourne, Australia. He has since then been using the system in his research. Our evaluations indicate that both Aliette and Ridomil when micro-injected are effective. Due to their different action, we are looking at their combined use.

POWDERY MILDEW AND RUSTS

Successful tests with Bayleton in the Micro-Injection System adds greatly to the overall fungicide capabilities.



"I'm so proud! All of my kids are going into research!"

