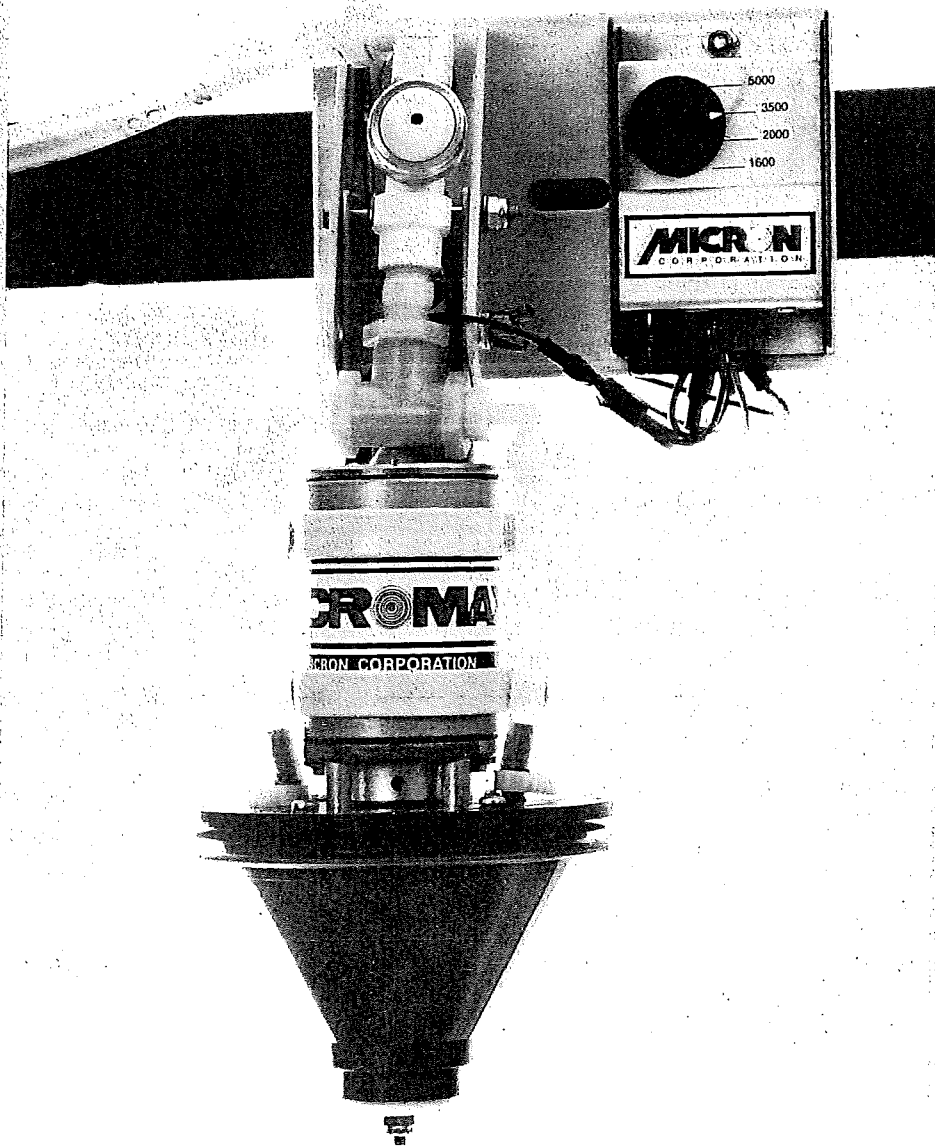


**MICRON**

# MICROMAX™

Controlled Droplet Applicators



Micromax/DR4

# The Idea

Controlled Droplet Application (C.D.A.) is the advanced system of spraying using reduced volumes with greater chemical efficiency and optimal control and accuracy.

This revolutionary idea from MICRON, inventors of C.D.A., represents the first real advancement over the conventional method of spraying with hydraulic nozzles, unchanged for more than half a century.

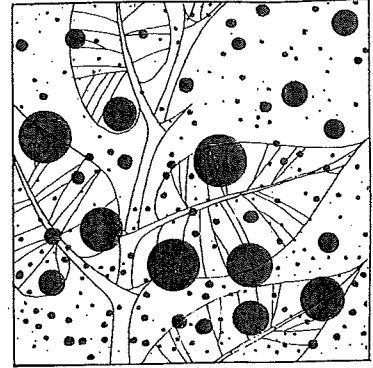
## The Difference

The objective of spraying is to apply a given concentration of a required chemical, uniformly over the target area whether it be soil, leaves or insects.

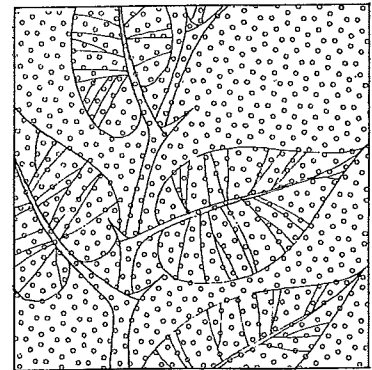
The key to a successful application depends primarily on the size and uniformity of the spray droplets: the best droplet size, in turn, is determined by the chemical and its target.

This is the principal difference and advantage of Controlled Droplet Application over hydraulic nozzle atomization.

Droplets from a conventional nozzle range from very small to very large.



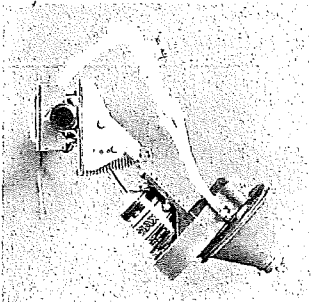
Rotary spray nozzles break the droplets into more uniform size.



## The Original Controlled Droplet Applicators — Micromax™

### THE BELT DRIVE

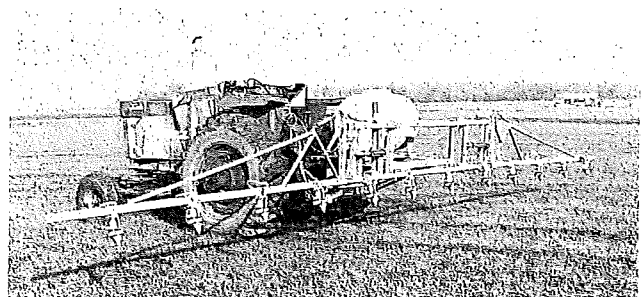
Rotary atomizer unit for spray boom mounting, with an electric motor to activate indirectly via belt a spinning disc, and produce by centrifugal force a consistent spray of controlled uniform size droplets to cover thoroughly the target area. Three variable speeds afford the possibility to select the right droplet size for the chemical to be applied. It comes with a new four position bracket to direct the spray and achieve better canopy penetration.



The Belt Drive Micromax™ with the four-position bracket.

### THE DIRECT DRIVE DR4

Rotary atomizer unit for spray boom mounting, with a 12 volt, 30 watt electric motor to drive directly the spinning disc, and a solid-state controller to select from four speeds, the most desirable RPM to generate the droplet size needed to achieve the best results. A four position bracket gives the unit the flexibility for directing the spray pattern for an optimal canopy penetration.



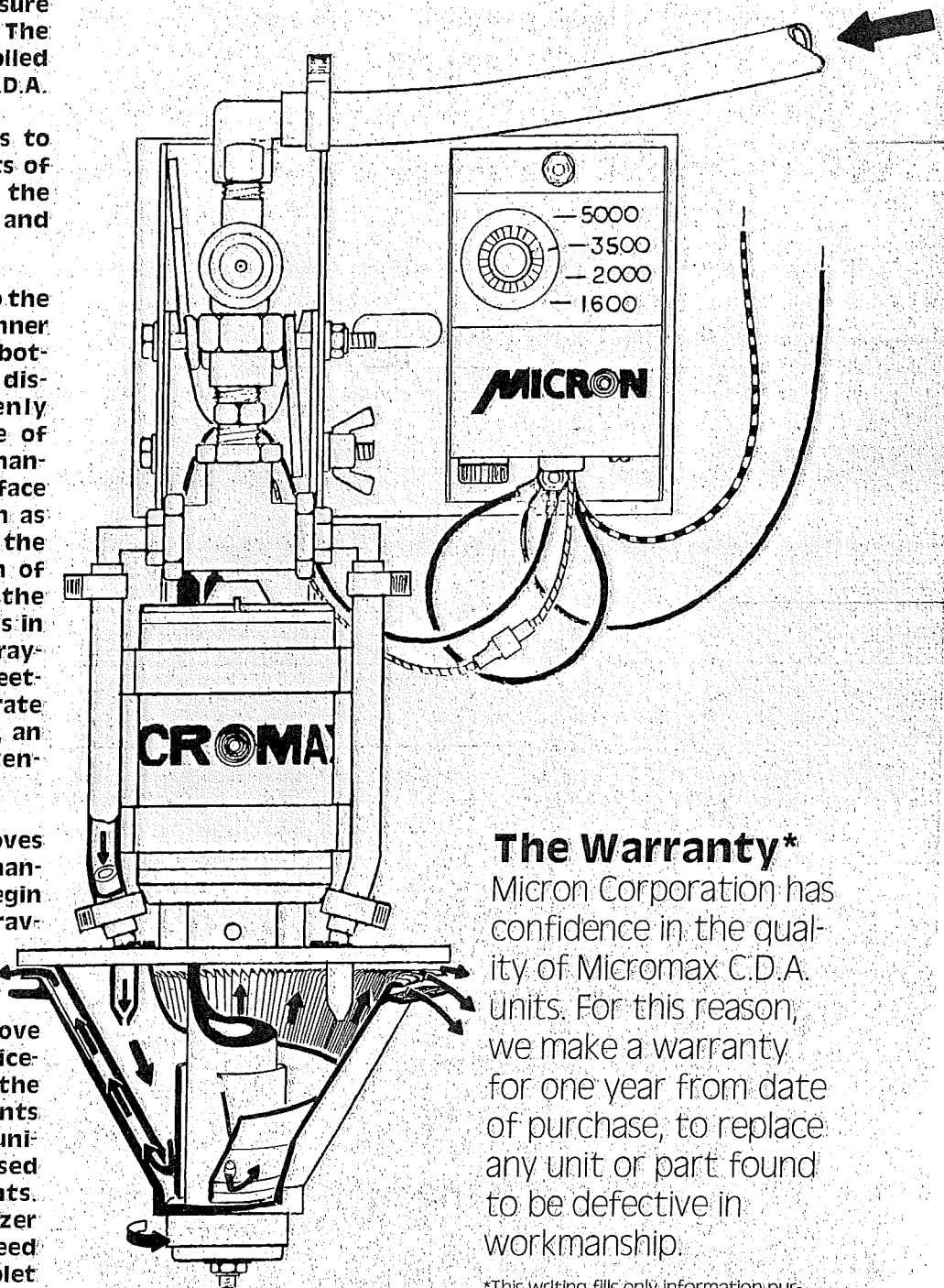
# The Concept

Micromax™ is a rotary atomizer using centrifugal force instead of hydraulic pressure to form spray droplets. The concept is called Controlled Droplet Application or C.D.A.

The principle of C.D.A. is to produce uniform droplets of the size best suited for the chemical to be applied and the area to be treated.

The chemical flows into the atomizer by way of an inner cup which feeds into the bottom of an outer cup and distributes chemical evenly across the inner surface of the outer cup. Shallow channels or groves on the surface of the outer cup, deepen as they extend outward to the top. The shallow portion of the channels, towards the bottom of the cup, assists in sheet-formation of the spray-material. This uniform sheeting is necessary to generate equally uniform droplets, an impossibility with conventional nozzles.

As the spray-material moves up the channels and the channels deepen, ligaments begin to form as the material travels outwards to the top of the cup by centrifugal force. Channels preform the ligaments and these move onto issuing points noticeable on the outer edge of the atomizer. Because ligaments are of a constant size, uniform droplets are released from these issuing points. The speed of the atomizer disc and the chemical feed rate determine the droplet size.



## The Warranty\*

Micron Corporation has confidence in the quality of Micromax C.D.A. units. For this reason, we make a warranty for one year from date of purchase, to replace any unit or part found to be defective in workmanship.

\*This writing fills only information purposes and does not constitute the actual warranty. For exact terms (liability, conditions, exemptions, etc.) consult other specific literature available upon request.

# The Applications

Micromax™ Controlled Droplet Applicators are versatile. Their performance is equally efficient in these types of applications:

**PREPLANT AND PREEMERGENCE HERBICIDES** are best applied using total spray volumes of ¼ to 6 gallons per acre. Droplet size will range from 100 to 325 microns depending on spinner speed, which can be adjusted according to spraying conditions:

\*1,600 rpm produces 250 to 325 microns

2,000 rpm produces 200 to 300 microns

3,500 rpm produces 110 to 215 microns

\*only DR4 model

**POSTEMERGENCE HERBICIDES** should be applied with either the low or medium spinner speed for best results. Droplets produced by the 3,500 rpm will be in the 125 micron range. Products such as Basagran°, Poast°, Blazer°, Hoelon°, Fusilade°, are generally sprayed at this speed. Droplets produced by the 2,000 rpm will be in the 250 micron range, which is the best droplet size for products like 2,4-D, Banvel°, Tordon°, Roundup°, etc. Roundup° can be applied at 3500 rpm in non-orchard and non-vineyard applications.

**C.D.A. AND VEGETABLE OIL** have teamed up to change spray volumes from gallons to quarts per acre. Progressive farmers owning Micromax™ units, are replacing a percentage or, in many instances, all of the water in their spray tank with vegetable oil. This new concept will revolutionize pesticide application, making it possible to move chemicals from spray tank to target area with the most efficient and cost-effective transfer system yet devised.

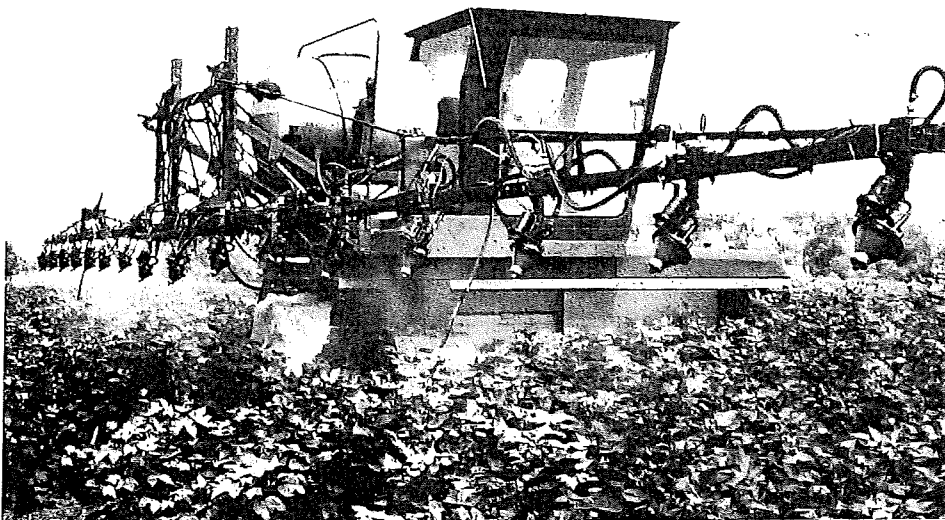
**FUNGICIDES** require good coverage of entire plant; the 3,500 rpm speed is recommended to give a droplet of 125 to 150 micron. The multiple position mounting bracket enables the unit to be set at different angles to direct the spray pattern for better canopy penetration.

**INSECTICIDES** are more effective with smaller droplets. Micromax™ operating at 5,000 rpm produces a 75 micron droplet, ideal for this type of spraying. C.D.A. sprayers are specially suited for using oil as carrier which reduces the carrier volume greatly.

## OTHER APPLICATIONS

The possibility to regulate droplet size enables the user of Micromax™ to significantly improve coverage of foliar fertilizers, growth regulators, defoliant, dessicants, etc., with low spray volumes.

° Registered trademarks



H. H. Huddleston, Lamont, Miss.

"Thirty acres per hour with total spray volumes amounting to seven tenths of a gallon per acre; that was accomplished last year with my Micromax™ system. This year I used vegetable oil in the Micromax units and lowered spray volumes to one or two quarts per acre with outstanding results! Both, insecticides and herbicides were applied with vegetable oil."

# The Reports

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## Researchers say:

DR. ALLEN F. WIESE, Texas Agricultural Extension Service, Bushland, TX, on weed control: "In a three year study the Micromax C.D.A. gave 2 to 4 times more effectiveness using Roundup on weeds and grasses, doubling the effectiveness with Paraquat. The cost for controlling volunteer wheat with this chemical was \$11.71 an acre with conventional sprayer and \$3.69 with Micromax. The costs with Roundup were \$15.26 with conventional versus \$3.81 with Micromax."

DR. GEORGE KAPUSTA, Southern Illinois University, Carbondale, IL, on soybeans: "Using 2 to 4 gallons per acre spray solution with Basagran at 0.75, 1.00 and 1.5 pints per acre with Micromax, was as effective as a hydraulic sprayer using flat fan nozzles, at 20 gallons per acre spray solution when applying Basagran at 2 pints per acre."

DR. JOHN NALEWAJA and RENE SCORESBY, North Dakota State University, Fargo, ND, on drift: "Considerable less drift occurred when using the Micromax at lower speeds as compared to conventional hydraulic sprayers, in tests in North Dakota with 10 to 15 miles per hour winds."

DR. JESSE COCKES, Texas A&M University, Stephenville, TX, on cotton: "Spray volumes of 2.5/gpa applied with the Micromax controlled droplet applicator were equally effective as 16.5/gpa applied with conventional nozzles, when spraying insecticides for cotton bollworm control. C.D.A. should be a very efficacious tool for applying insecticides more effectively."

DR. ROBERT H. LITRELL, Coastal Plain Experiment Station, University of Georgia, Tifton, GA, on peanuts: "Controlled Droplet Application (C.D.A.) technology is a revolutionary idea that changed the way of thinking about applying fungicides to peanut plants. Recent experimentation with Micromax units for controlling leaf spot disease showed a more efficient deposit on target and greater residues, on the leaves surface. Penetration of the fungicide into the lower canopy appeared to be better."

DR. HOWARD SPENCER POTTER, Michigan State University, East Lansing, MI, on vegetables: "Micromax controlled droplet applicators have been extensively tested and evaluated for applying fungicides to crops such as tomatoes, sugarbeet, potatoes and celery. Coverage has been found excellent at volumes below 5/gpa and several fungicides have shown increased effectiveness when applied with C.D.A."

## Farmers say:

LEE STOOPS, Kansas farmer and custom applicator says: "C.D.A. is the best thing I have found to lower the price I have to charge my customers for application work. I have been doing aerial spraying but plan to move back to more ground application with C.D.A."

WARREN HAMMETT, Mississippi soybean grower has had Micromax units on his spray-rig for two years and believes C.D.A. makes the use of the new postemergence herbicides worthwhile: "I used my Micromax nozzles to clean up a weed situation in my beans that would have been a total disaster without these atomizers."

LARRY BRICKHAM, South Texas cotton farmer sprayed over 1,000 acres of cotton with Micromax units on ground equipment. He converted his spraying rig to use all-vegetable oil as his carrier; his comments are: "Without the C.D.A. it would be impossible to cover this much cotton with multiple spraying using ground application; even more attractive is to get down to 1 quart per acre spray volumes."

GEORGE AND HENRY HOSAKA, Central California grape and vegetable growers built their own sprayer, mounting Micromax nozzles on a collapsible boom. "Already the first time out the unit worked very well," George says. "We've been saving a lot of fill-up time, and I've used approximately one-half to two-thirds the chemical per acre I needed before."

MARK WEINGART, Ohio corn and soybean operator applied Dual and Bladex on his corn ground at less than 3 gallons per acre total volume. "Being able to cut back on carrier makes it possible to operate with one man less during the critical planting time."

ALLEN SHAEFFER, Eastern Missouri soybean grower. "I mounted Micromax units under the combine for spraying herbicides while wheat is being harvested; this is the only time the stubble does not have trash over it, allowing for a better penetration of chemicals. When you double crop like I do, this eliminates separate spraying saving labor and time, which is very important."

BERRY MILLER, Eastern Washington wheat farmer has been using Micromax for two years on a no-till wheat program. Most of his spraying has been at 3/gpa total volume, using the low rpm setting to produce large droplets: "C.D.A. results have been excellent and, best of all, I have lowered my chemical costs by half, using Roundup at the one pint rate and still achieving control of both weeds and volunteer wheat."