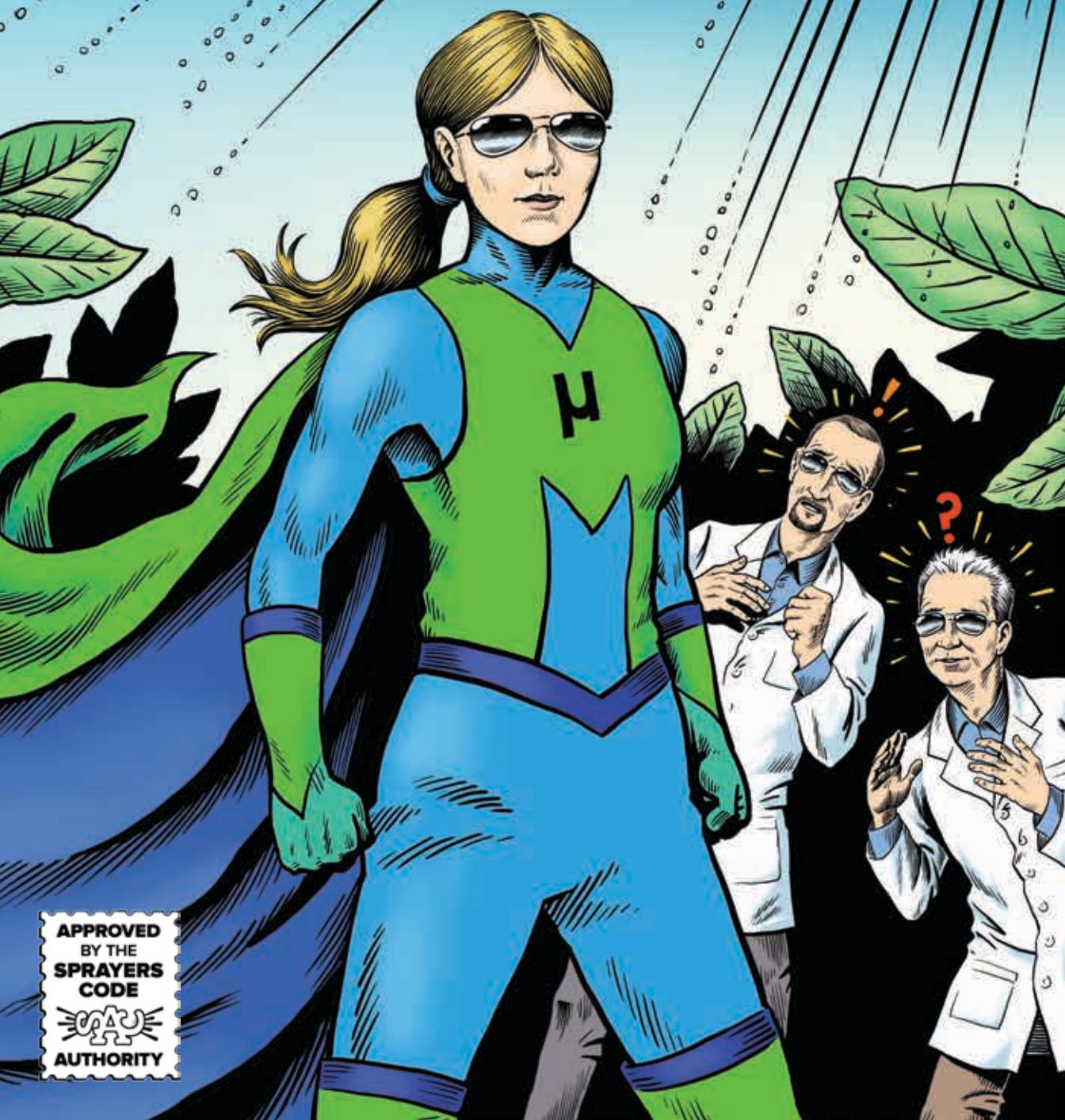


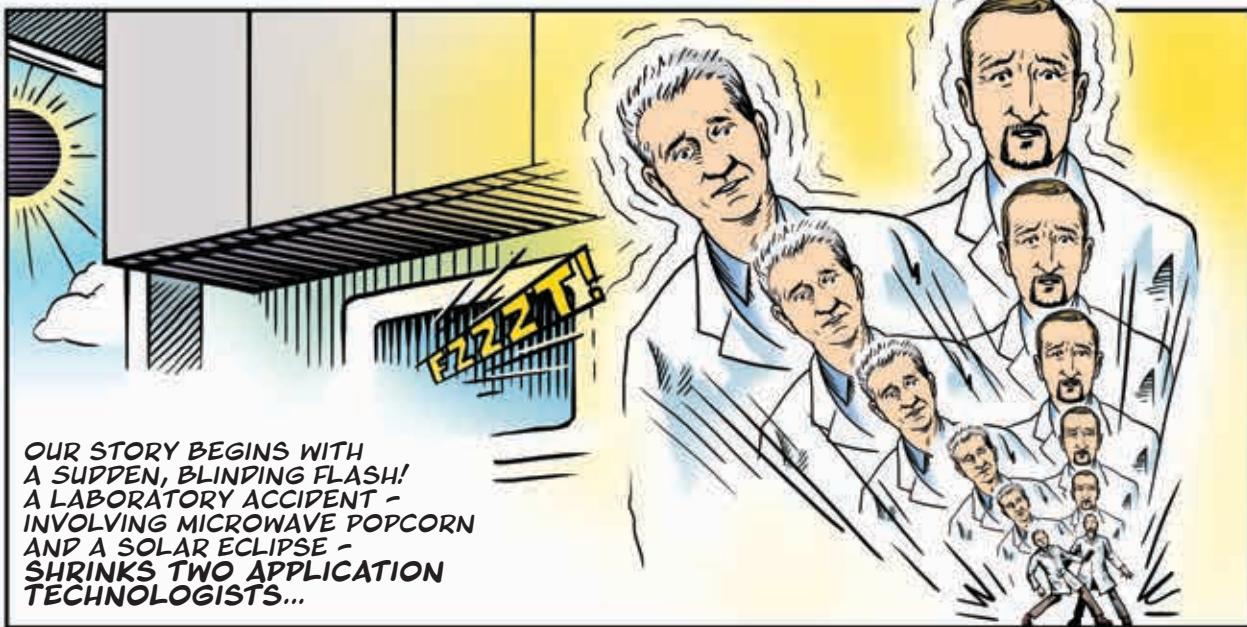
MICRON μ WOMAN

GUIDE TO THE WORLD OF SPRAY DROPLETS



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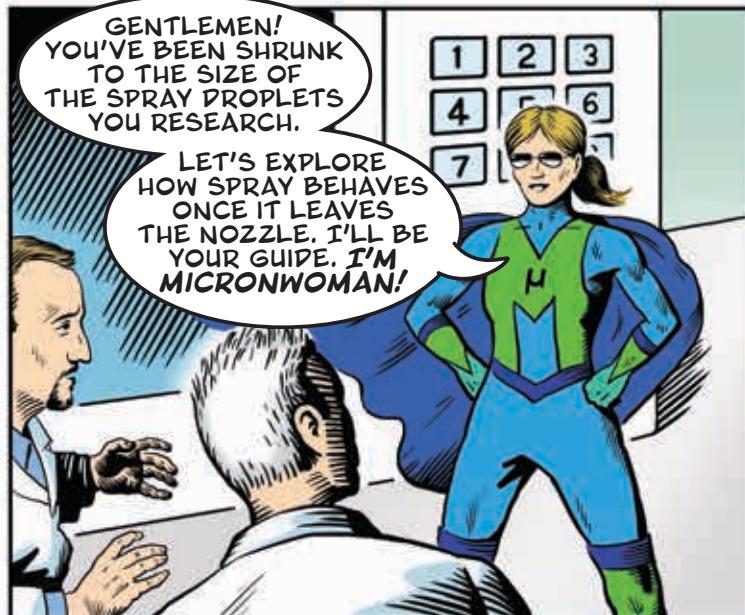


OUR STORY BEGINS WITH A SUDDEN, BLINDING FLASH! A LABORATORY ACCIDENT - INVOLVING MICROWAVE POPCORN AND A SOLAR ECLIPSE - SHRINKS TWO APPLICATION TECHNOLOGISTS...

BEWILDERED, JASON AND TOM LOOK AROUND TO GET THEIR BEARINGS.



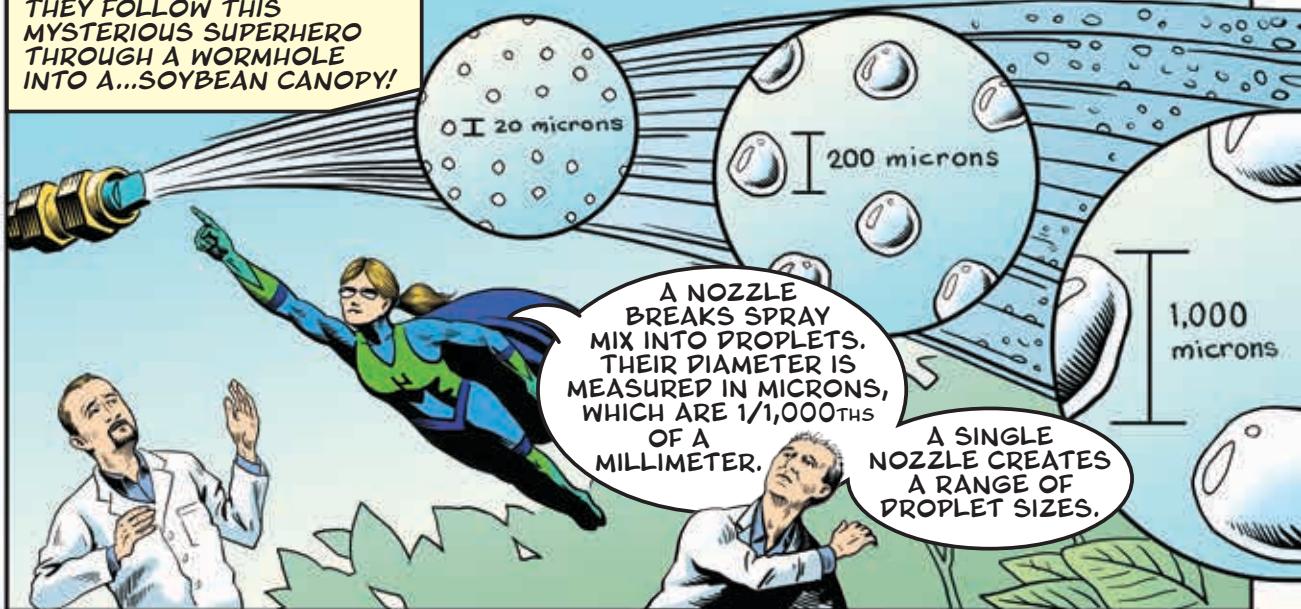
SOMEONE APPROACHES, AS TINY AS THEY'VE JUST BECOME, THEY BRACE THEMSELVES...



GENTLEMEN! YOU'VE BEEN SHRUNK TO THE SIZE OF THE SPRAY DROPLETS YOU RESEARCH.

LET'S EXPLORE HOW SPRAY BEHAVES ONCE IT LEAVES THE NOZZLE. I'LL BE YOUR GUIDE. I'M MICRONWOMAN!

THEY FOLLOW THIS MYSTERIOUS SUPERHERO THROUGH A WORMHOLE INTO A...SOYBEAN CANOPY!

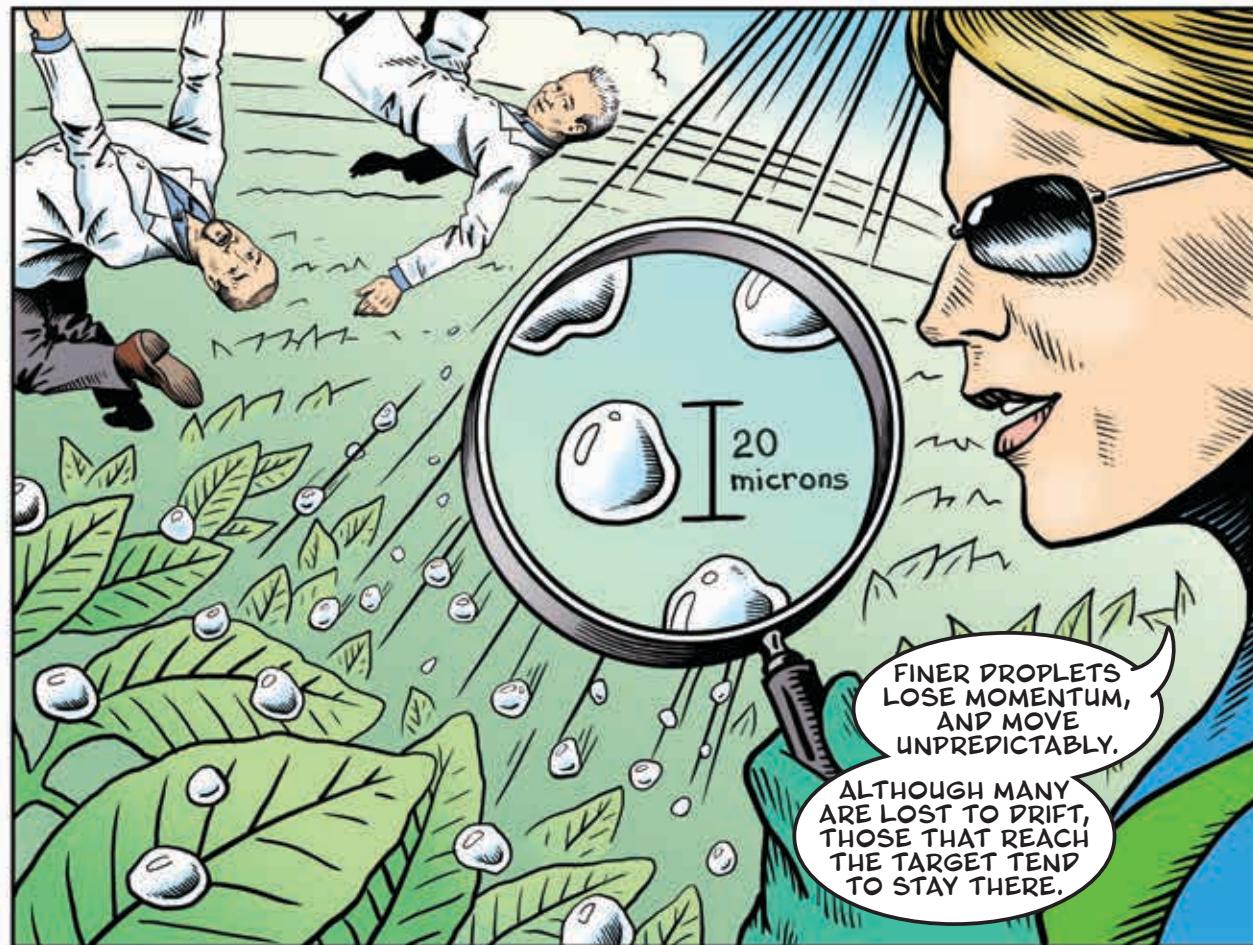


A NOZZLE BREAKS SPRAY MIX INTO DROPLETS. THEIR DIAMETER IS MEASURED IN MICRONS, WHICH ARE 1/1,000THS OF A MILLIMETER.

A SINGLE NOZZLE CREATES A RANGE OF DROPLET SIZES.



COARSER DROPLETS MOVE FAST AND IN STRAIGHT LINES. IF THEY'RE TOO COARSE, THEY CAN BOUNCE OR RUN OFF THE TARGET.



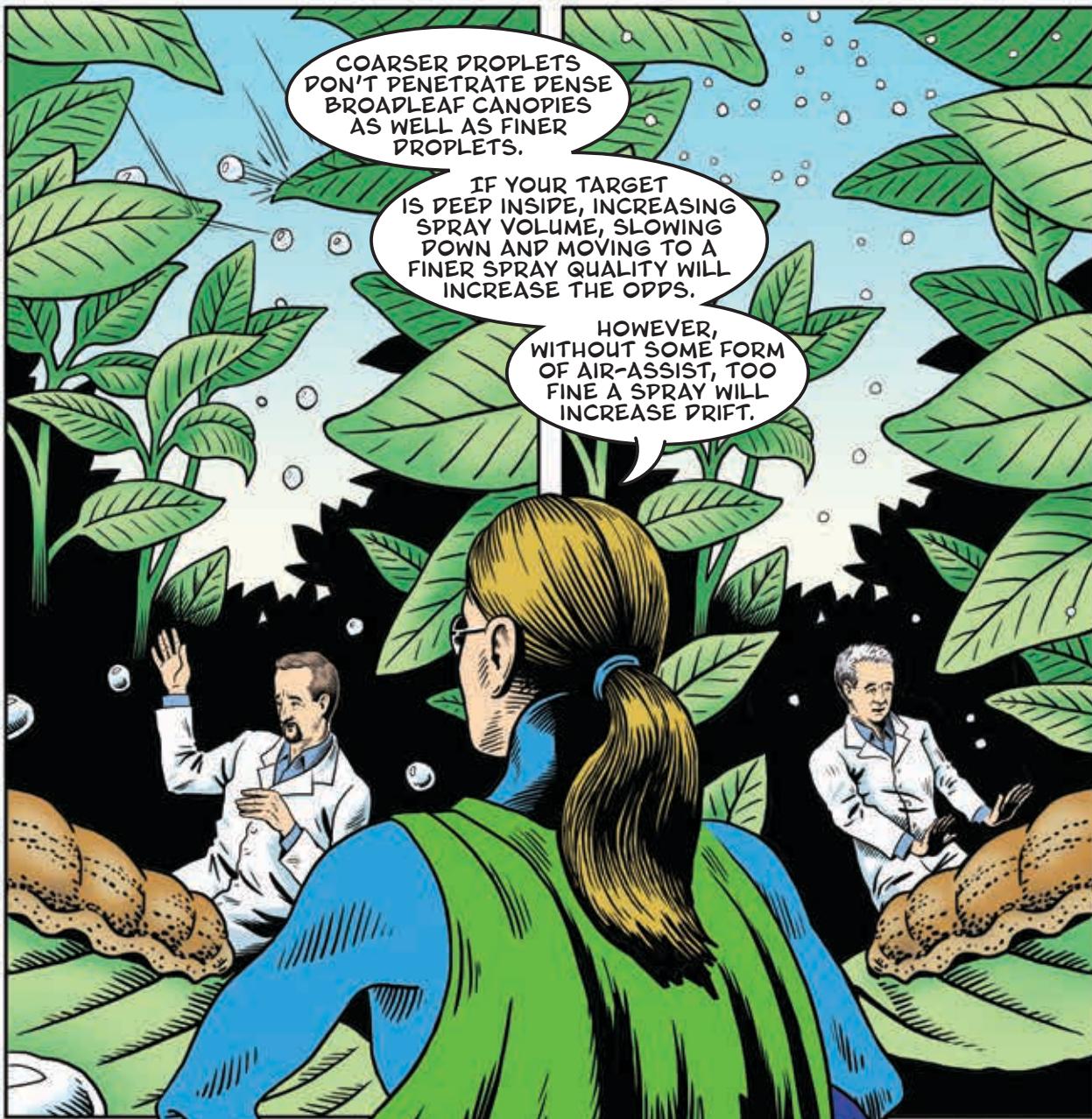
FINER DROPLETS LOSE MOMENTUM, AND MOVE UNPREDICTABLY.

ALTHOUGH MANY ARE LOST TO DRIFT, THOSE THAT REACH THE TARGET TEND TO STAY THERE.



SO, WHAT'S THE BEST DROPLET SIZE TO USE?

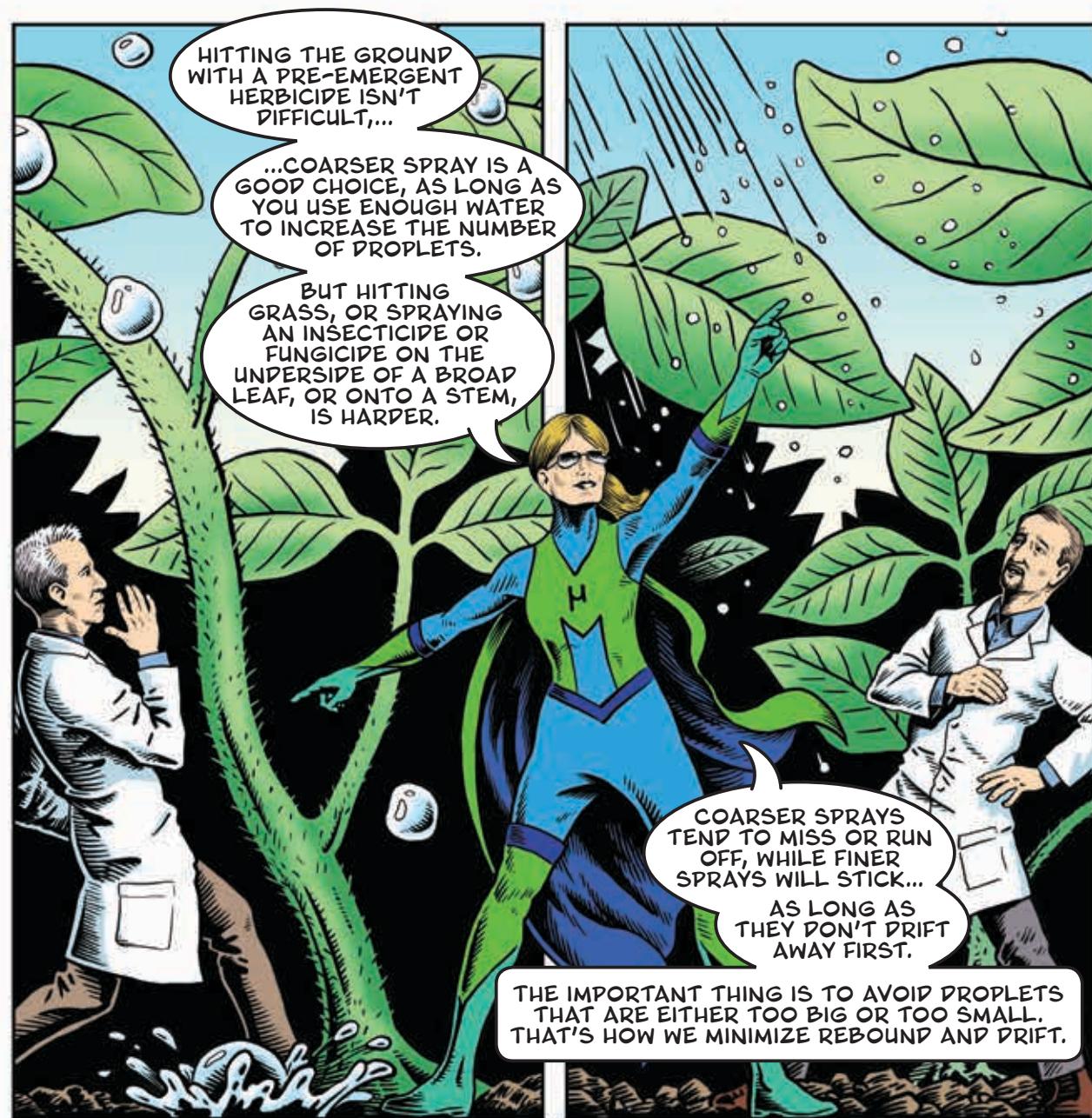
THE IDEAL DROPLET SIZE DEPENDS ON THE LOCATION, ORIENTATION AND SURFACE TEXTURE OF THE TARGET YOU WANT TO HIT.



COARSER DROPLETS DON'T PENETRATE DENSE BROADLEAF CANOPIES AS WELL AS FINER DROPLETS.

IF YOUR TARGET IS DEEP INSIDE, INCREASING SPRAY VOLUME, SLOWING DOWN AND MOVING TO A FINER SPRAY QUALITY WILL INCREASE THE ODDS.

HOWEVER, WITHOUT SOME FORM OF AIR-ASSIST, TOO FINE A SPRAY WILL INCREASE DRIFT.



HITTING THE GROUND WITH A PRE-EMERGENT HERBICIDE ISN'T DIFFICULT,...

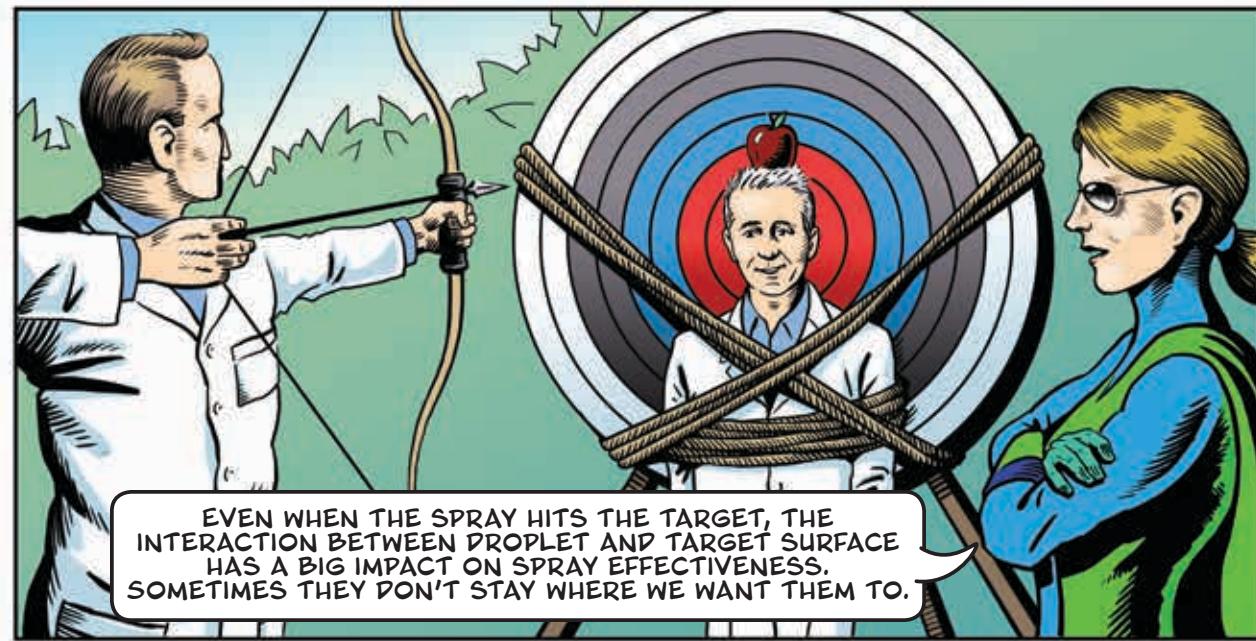
...COARSER SPRAY IS A GOOD CHOICE, AS LONG AS YOU USE ENOUGH WATER TO INCREASE THE NUMBER OF DROPLETS.

BUT HITTING GRASS, OR SPRAYING AN INSECTICIDE OR FUNGICIDE ON THE UNDERSIDE OF A BROAD LEAF, OR ONTO A STEM, IS HARDER.

COARSER SPRAYS TEND TO MISS OR RUN OFF, WHILE FINER SPRAYS WILL STICK...

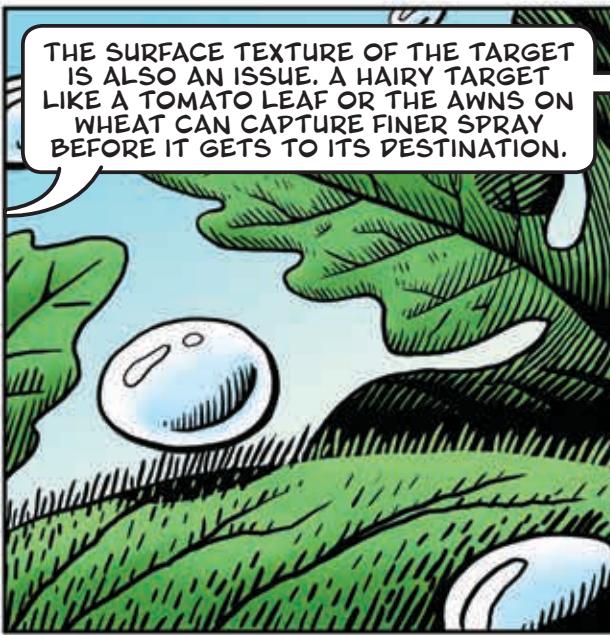
AS LONG AS THEY DON'T DRIFT AWAY FIRST.

THE IMPORTANT THING IS TO AVOID DROPLETS THAT ARE EITHER TOO BIG OR TOO SMALL. THAT'S HOW WE MINIMIZE REBOUND AND DRIFT.

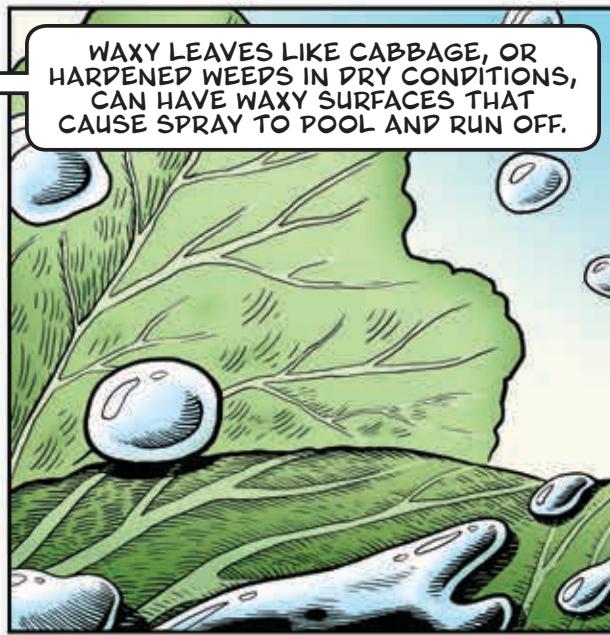


EVEN WHEN THE SPRAY HITS THE TARGET, THE INTERACTION BETWEEN DROPLET AND TARGET SURFACE HAS A BIG IMPACT ON SPRAY EFFECTIVENESS. SOMETIMES THEY DON'T STAY WHERE WE WANT THEM TO.

THE SURFACE TEXTURE OF THE TARGET IS ALSO AN ISSUE. A HAIRY TARGET LIKE A TOMATO LEAF OR THE AWNS ON WHEAT CAN CAPTURE FINER SPRAY BEFORE IT GETS TO ITS DESTINATION.



WAXY LEAVES LIKE CABBAGE, OR HARDENED WEEDS IN DRY CONDITIONS, CAN HAVE WAXY SURFACES THAT CAUSE SPRAY TO POOL AND RUN OFF.



SO, SHOULD WE ADD ADJUVANTS TO THE TANK TO CHANGE HOW THE PROPS BEHAVE?

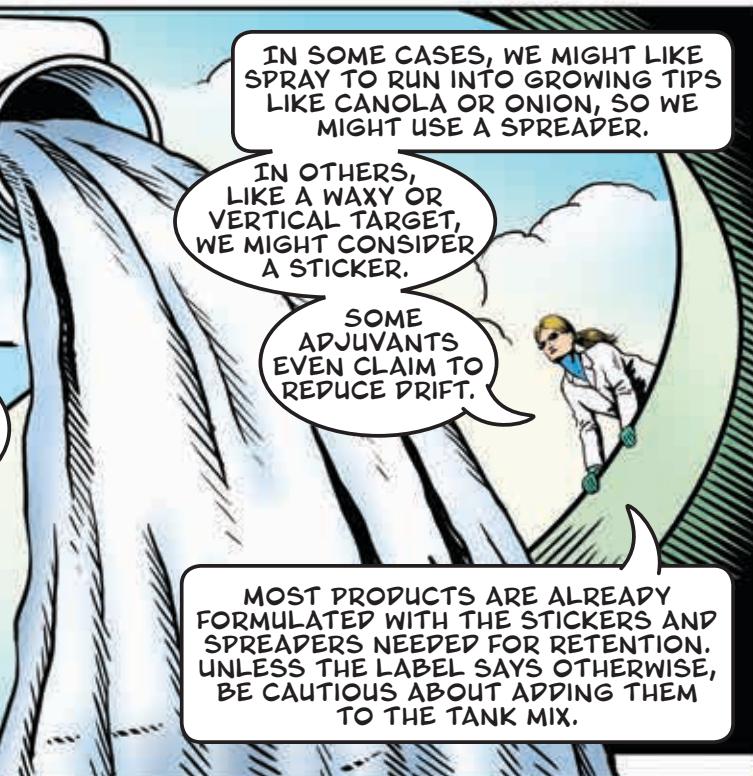


IN SOME CASES, WE MIGHT LIKE SPRAY TO RUN INTO GROWING TIPS LIKE CANOLA OR ONION, SO WE MIGHT USE A SPREADER.

IN OTHERS, LIKE A WAXY OR VERTICAL TARGET, WE MIGHT CONSIDER A STICKER.

SOME ADJUVANTS EVEN CLAIM TO REDUCE DRIFT.

MOST PRODUCTS ARE ALREADY FORMULATED WITH THE STICKERS AND SPREADERS NEEDED FOR RETENTION. UNLESS THE LABEL SAYS OTHERWISE, BE CAUTIOUS ABOUT ADDING THEM TO THE TANK MIX.



WHAT WE WANT IS AN EVEN DISTRIBUTION OF SPRAY ON THE TARGET, WITH A HIGH DEGREE OF CONTACT.

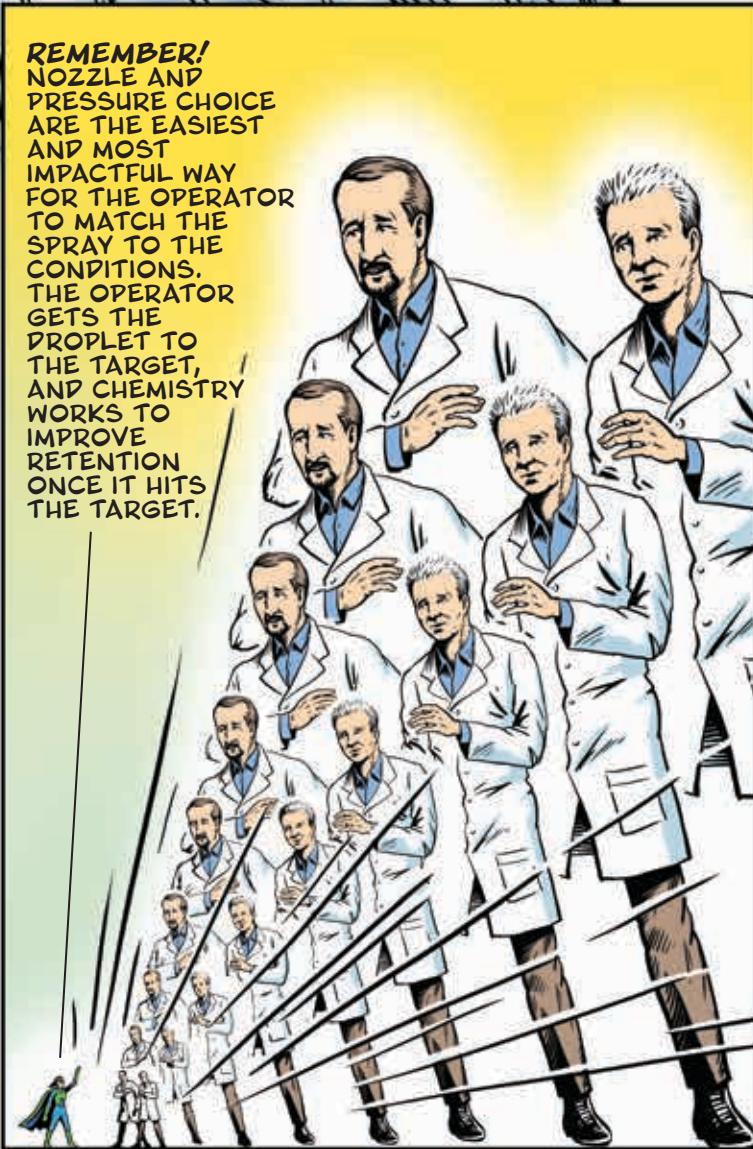
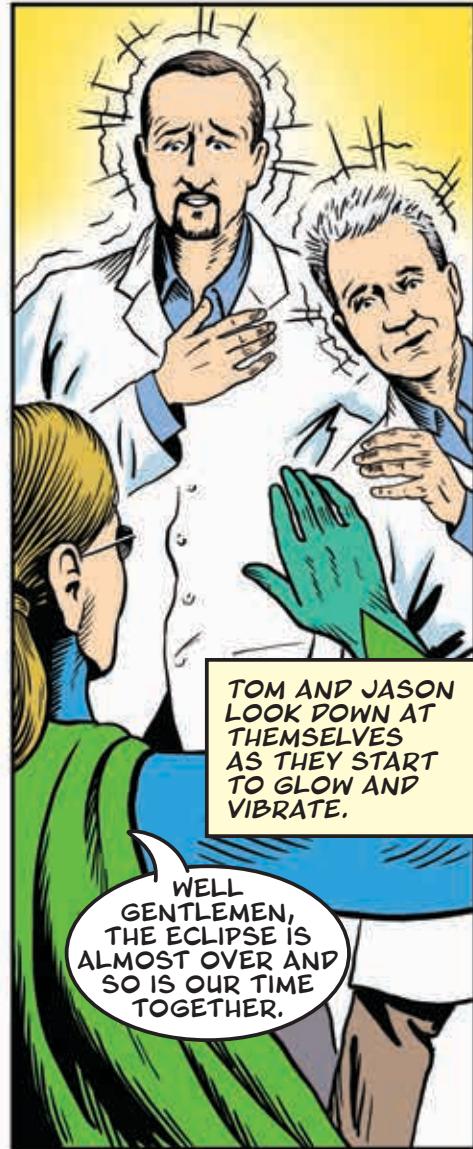


TOM AND JASON PUSH DOWN ON A PROPLET THAT HAS LESS CONTACT, FRUITLESSLY TRYING TO GET IT TO TOUCH THE LEAF.

REMEMBER! NOZZLE AND PRESSURE CHOICE ARE THE EASIEST AND MOST IMPACTFUL WAY FOR THE OPERATOR TO MATCH THE SPRAY TO THE CONDITIONS. THE OPERATOR GETS THE PROPLET TO THE TARGET, AND CHEMISTRY WORKS TO IMPROVE RETENTION ONCE IT HITS THE TARGET.

TOM AND JASON LOOK DOWN AT THEMSELVES AS THEY START TO GLOW AND VIBRATE.

WELL GENTLEMEN, THE ECLIPSE IS ALMOST OVER AND SO IS OUR TIME TOGETHER.



MICRON WOMAN

GUIDE TO THE WORLD OF SPRAY DROPLETS

STORY: JASON DEVEAU AND TOM WOLF
CONCEPT: TOM WOLF AND JASON DEVEAU
ILLUSTRATION: MICHAEL CUSTODE
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A NARRATED VIDEO OF THIS STORY WITH ADDITIONAL FOOTAGE,
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FOLLOW JASON (@SPRAY_GUY) AND TOM (@NOZZLE_GUY) ON TWITTER.