



CROP...Line

Creative Research Original Products

A Growing Newsletter

The "Hook Book"

Chapter 3-----Complexing Activity

There are hundreds of adjuvants on the market each proclaiming it is the best in its segment of the market. Many of these have a dual purpose. The most common of these are what we talked about ---in CropLine # 7 and # 8, stickers-combined with spreaders aka surfactants aka wetting agents.

Now one of the things that make Hook unique is its multi functional capability....which is up next.... in conjunction with the spreader-sticker.

A nonionic surfactant is a material designed to reduce the surface tension of water. Very simply...making the water 'wetter'. Now, this property of reduced surface tension allows the water to penetrate places it normally could not reach. This is very important for all plant leaf surfaces especially those which are hard to wet due to waxy cuticle. Once the water gets there...it needs to 'stick' around a while.

Hook does this and more...because of a 'sticker' incorporated into it so that spray mix remains in contact with the leaf surface. If the pesticide material fails to achieve and maintain an intimate contact with the leaf surface, its effectiveness is reduced to almost nothing.

In CropLine #7, we mentioned 'cohesion and adhesion' as different kinds of 'sticking'. Let's clarify.....Water molecules like everybody! Cohesion is the term for molecules of a like substance sticking together. If the water molecules are more strongly attracted to each other than to the surrounding material, they bead up and try to get as close to *each other* as possible. This is water beading which you don't want on the leaf.

When a molecule attracts to a different substance this is termed Adhesion. If there is a stronger attraction to some other material, they spread out and try to get close to the *other material*... which is the coverage you want to see.

Also, Hook will help increase compatibility of an unusual mixture due to its ability to help solubilize (dissolve) oil like materials.

Hook forms a unique 'complex' with the active ingredients (a.i.) in most sprays so the active ingredient itself will work like a surfactant. This not only reduces the surface tension of the water, but is a unique procedure to increase the effectiveness of the compound used. It is because of this effect that only a smaller amount of a.i. is necessary to reduce the surface tension. Now, think about this for a minute!..... You are getting a product that 'works like a surfactant' but at the same time is also carrying the pesticide!

Like Clark Kent on the outside but Superman within, Hook, a mild mannered adjuvant for the Grower Daily...takes off his cap and pours into the phone booth, er...the spray mix...and becomes Super-Hook...er. Super-Man.. Yes, that is a bit silly, but the point we are trying to make and most importantly we would like you to **remember** is that while Hook may look like the rest of the adjuvants on the outside, it becomes something *unique* inside the spray mix.

Now, let's see if we can give another analogy to make it clearer. Think of an intersection of multiple roads without any light or stop sign. There is going to be congestion to say the least. Now, let's put a traffic circle or rotary in place of the intersection so traffic can function smoothly.

Think of Hook as the rotary and the vehicles on the roads are trucks (molecules) carrying pieces of pipe (spray mix components). Without the rotary, there is chaos instead of uniformity. With Hook the molecules are routed to 'Adhesion' Road and 'Cohesion' Blvd. ...Molecules connecting properly to get to their destination.....the plant leaf.

When Hook is used the trucks unload the pipe and make proper connections so that when the spray mix valve is turned on the leaf not only gets a uniform amount of a.i. but also excellent coverage.....that lasts!

Without Hook, its' here we go again' because when the valve is turned, there are all the usual problems. Under spray, Over spray (runoff), high spots of a.i., etc.

Hook's complexing is likened to the traffic circle facilitating molecules for connection. Hook has to see all the traffic in order to direct it. So the proper sequence for Hook being in the right place and time is to...."Add Hook Last".

Succinctly, "Complexing" is "HOOK" being in the right place at the right time.... And in order to do that you need a good infrastructure, and a good delivery system.....Hook is the builder of that infrastructure.....

This is why we-----"Add Hook Last"!

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