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CALIBRATING THE MIST-O-MATIC SEED TREATER AND WHY

W. S. Acheson

The proper calibration of any piece of seed processing equipment is of the utmost importance, and because your seed treater is applying chemicals which can be beneficial, when applied properly, or detrimental when improperly applied, the importance of the seed treater is brought more into prominence than processors realize.

More and more concern is being shown, and given, by state and government agricultural departments in respect to the drop in germination of seed after being treated.

From the information given us it definitely points to:

1. Method used in application
2. Chemical used

Knowing that these facts have existed for a good number of years our company designed, engineered and introduced the Mist-O-Matic method of treating seed.

The treater itself is simple to operate and has three main sections that we will discuss as far as calibration is concerned:

A. Feed Hopper or Seed Intake: This hopper is located over the weighing pans of the treater. The two slides known as seed gates, open and shut simultaneously so as to assure the same flow of seed into the weigh pan below.

If possible, the operator should allow the seed to back up slightly, into the feed spout so there is a dead weight of seed

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Mr. Acheson is Sales Manager, Ben Gustafson & Son Manufacturing Company; manufacturers of seed treating equipment
RAPID REVOLVING MIST DISC ATOMIZES CHEMICAL AND ASSURES UNIFORM APPLICATION

FEED CONTROL GATES OPENING SIMULTANEOUSLY ASSURE STEADY FLOW OF GRAIN INTO WEIGHING PANS

STAINLESS STEEL METERING CUPS ASSURE EXACT AMOUNT OF CHEMICAL TO MIST DISC

HEAVY DUTY TOTALLY ENCLOSED MOTOR

SEALED BALL BEARINGS

Rapid Revolving Mist Disc Atomizes Chemical and Assures Uniform Application

Retarding Hoppers and Dispersion Cone Assure Even Flow of Seed Into Chemical Mist

Adjustable Counter Weight and Double Weighing Pans for Accurate Measurement of Seed

Sealed Ball Bearings

Circulating and Agitator Type Pump Assures Continuous Flow of All Chemicals and Proper Agitation of Slurry Chemicals

Instant Clean-Out Through Gravity Flow Eliminates Possibility of Seed Misting

15 Gallon Reservoir Tank

Figure 1. Gustafson Mist-O-Matic seed treater, Model M100.
falling onto the weigh pans and eliminating any direct flow which might have a tendency to add some "force" and thereby tip the pan before the "true" weight of seed was in the pan.

B. **Retarding Hopper:** This part of the treater has a most important part to play in obtaining the most effective and economical use from the chemical being applied.

The removable retarders should be kept in such a position that there is still seed in the hopper when the next load of seed is dumped into the retarding hopper.

The reason behind this retarding action is that the chemical does not reach the treating chamber as fast as the seed and therefore to have seed falling through the treating chamber at all times it must be retarded somewhat.

C. **Chemical Metering Tanks:** The four sets of chemical cups used in the Mist-O-Matic treaters are checked out to see that they pick up the amount of chemical which is stamped on the shank of the cup arm. This eliminates the necessity of using pliers on them in order to arrive at a certain amount of chemical.

Your chemical cups should just clear the edge of the chemical line hopper by 1/16 of an inch to obtain the proper amount of chemical for the respective chemical cups.

It in doubt as to which cup should be used contact your chemical sales-man or our home office in Minneapolis.

The second portion of this talk will deal with "Why" these calibrations are necessary in the Mist-O-Matic treater.

Basically, seed treating should be the treating of each individual seed for the very simple reason that it is from the individual seed that each plant emerges -- not from two, three or four seeds, but from a single seed.
Along with this factor we find that some of the new chemicals can be, and are, detrimental to seed germination even to the point of killing the seed because of too much chemical being applied. This fact is very true when you consider some of the present methods where chemical is dumped directly onto the seed.

Although the new mercury chemicals have a volatile or gaseous characteristic, when exposed to air, these same characteristics are diminished by cold, high humidity, high moisture content in seed, suppressed storage conditions and planting of seed within a few hours of treating.

Likewise, we have heard that distribution of chemicals is not necessary, but what are we to do with chemicals that must coat each seed or be on the seeds, such as insecticides and seed protectants? These have no volatile fumes and therefore to be effective must be on the seed.

It might be well to add at this time, that four of the largest seed treating chemical manufacturers have either written to us, or have published technical information, as to why "uniform distribution" of chemicals onto the seed is so important to good seed treating. If you would like copies please contact me here at the school or at our office.

The above problems are why the Mist-O-Matic method was invented for the seed processing trade and why the calibrations on a treater are so vitally important.

Your Mist-O-Matic method allows each seed to individually come into actual contact with the chemical, thereby making the most effective and economic use of the chemicals.

In closing I would like to make these four following statements:

First: All of us should keep in mind that in seed processing work we are working with individual seeds - not pounds, bushels or carloads of seeds.

Second: Each seed is like a small child - if we expect it to grow and develop, we must treat it as an individual.
Third: The chemical you apply to the seed is no more effective than the treater which applies it to the seed.

Fourth: Your seed treater, because it is the last piece of processing equipment through which the seed passes becomes the most important piece of equipment you have in your plant.