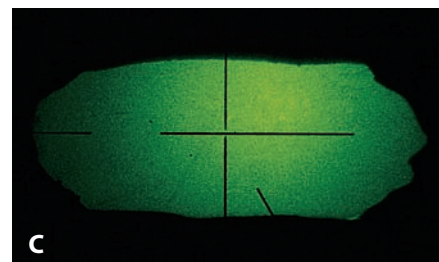
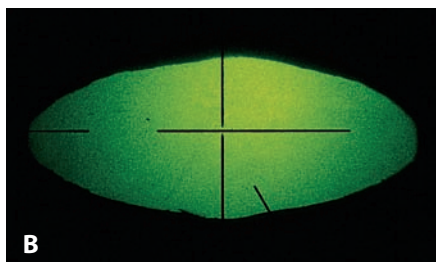
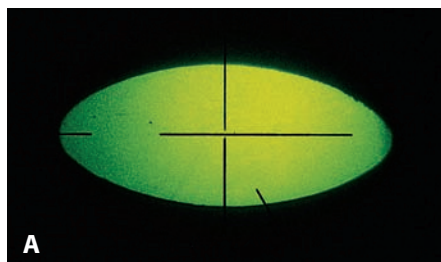


$$A = \frac{B+C}{D}$$

Spray Tip Wear

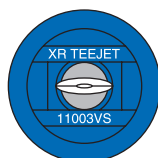


Tips Don't Last Forever!

There is sufficient evidence that spray tips may be the most neglected component in today's farming. Even in countries with obligatory sprayer testing, spray tips are the most significant failure. On the other hand, they are among the most critical of items in proper application of valuable agricultural chemicals.

For example, a 10 percent over-application of chemical on a twice-sprayed 1,000-acre farm could represent a loss of \$2,000–\$10,000 based on today's chemical investments of \$10.00–\$50.00 per acre. This does not take into account potential crop damage.

Spray Tip Care is the First Step to Successful Application



The successful performance of a crop chemical is highly dependent on its proper application as recommended by the chemical manufacturer. Proper selection and operation of spray nozzles are very important steps in accurate chemical application. The volume of spray passing through each nozzle plus the droplet size and spray distribution on the target can influence pest control.

Critical in controlling these three factors is the spray nozzle orifice. Careful craftsmanship

An Inside Look at Nozzle Orifice Wear and Damage

While wear may not be detected when visually inspecting a nozzle, it can be seen when viewed through an optical comparator. The edges of the worn nozzle (B) appear more rounded than the edges of the new nozzle (A). Damage to nozzle (C) was caused by improper cleaning.

The spraying results from these tips can be seen in the illustrations below.

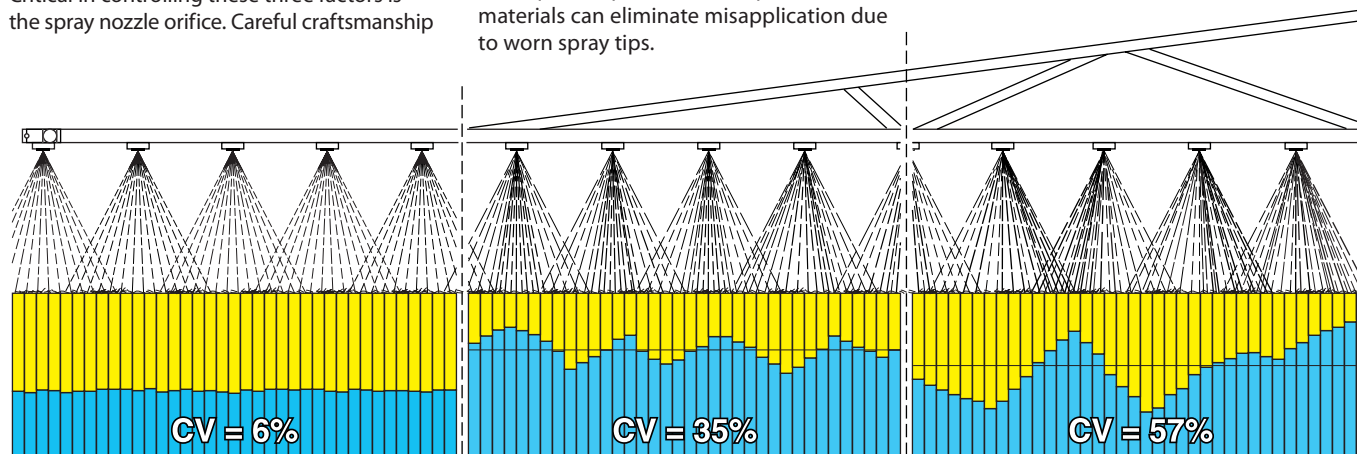
Determining Tip Wear

The best way to determine if a spray tip is excessively worn is to compare the flow rate from the used tip to the flow rate of a new tip of the same size and type. Charts in this catalog indicate the flow rates for new nozzles. Check the flow of each tip by using an accurate graduated collection container, a timing device and an accurate pressure gauge mounted at the nozzle tip. Compare the flow rate of the old tip to that of the new one. Spray tips are considered excessively worn and should be replaced when their flow exceeds the flow of a new tip by 10%. Reference page 145 for more information.

goes into the precision manufacturing of each nozzle orifice. European standards, for example the JKI, require very small flow tolerances of new nozzles (+/-5%) of nominal flow. Many TeeJet nozzle types and sizes are already JKI-approved, which confirms the high quality standard designed into TeeJet nozzles. To maintain the quality in practical spraying as long as possible, the operator's job is the proper maintenance of those spray tips.

The illustration below compares the spraying results obtained from well-maintained vs. poorly-maintained spray tips. Poor spray distribution can be prevented. Selection of longer wearing tip materials or frequent replacement of tips from softer materials can eliminate misapplication due to worn spray tips.

Careful cleaning of a clogged spray tip can mean the difference between a clean field and one with weed streaks. Flat spray tips have finely crafted thin edges around the orifice to control the spray. Even the slightest damage from improper cleaning can cause both an increased flow rate and poor spray distribution. Be sure to use adequate strainers in your spray system to minimize clogging. If a tip does clog, only use a soft bristled brush or toothpick to clean it—never use a metal object. Use extreme care with soft tip materials such as plastic. Experience has shown that even a wooden toothpick can distort the orifice.



NEW SPRAY TIPS

Produce a uniform distribution when properly overlapped.

WORN SPRAY TIPS

Have a higher output with more spray concentrated under each tip.

DAMAGED SPRAY TIPS

Have a very erratic output – overapplying and underapplying.