

# Cowpea Referee

May 21, 2012

Variance in germination test results of cowpeas can cost the seed industry a great deal of money each year. Just recently one of my customers lost a \$100,000.00 sale because of a difference of 20% on the test he provided from my lab, and a test the prospective buyer received from another lab. This is nothing new to me, as I have been hearing this complaint for 20 years or more. I proposed this referee because I feel that all labs need to be using a specific and detailed rule to plant and evaluate the cowpeas they test, so that these variances do not occur.

A common complaint from the cowpea industry is that the variances can be as much as 20% or more. My initial research discovered a discrepancy between labs across the country in regards to how cowpea germinations are conducted and evaluated. Comments such as “we need to clarify the rules and have everyone on the same page” and “all labs should have the ability to test cowpeas in soil, because rolled towel tests are not always accurate” are being heard more and more. At a recent AOSA/SCST meeting I proposed that we as an association conduct a questionnaire to identify and discrepancies that might be occurring and was charged with doing so. I feel the results are very telling and in fact this questionnaire referee really pointed out the differences between labs. The fact is that we need to rectify the problem in order to protect the industry, by clarifying the existing rules, or proposing a new category for evaluating *Vigna unguiculata*.

We had a good response with 21 labs starting the survey. It showed that 66% actually test cowpeas although some as few as 50 samples or less per year. Some labs did not complete the whole survey and some opted to only complete the rolled towel questions.

The preferred method of testing is rolled towels, with some labs responding they do not do soil tests, even though it is suggested in the rules as a retest if mold is present. I noted that some labs lay their towels flat and from experience I know this method can result in unusual looking seedlings that spiral or twist.

After reviewing the survey results I have concluded that there are three main areas that absolutely need clarification.

1. Assessing the seedling for attached cotyledons, none are required in the AOSA rules but yet in a sand test 37.5% of those who responded said they required one and in the rolled towel test questions 50% of those responding said they required one. This part of the rules definitely needs clarifying since it very common for both cotyledons to become detached from the seedling by normal growth or simply handling the sample.
2. The classification of seedlings with unshed seed coats, in the rolled towel test, also needs to be addressed. 20% of those responding said they did not peel the seed coats from the seedling to access the leaves. It is very common for the seedling to not shed the seed coat in a rolled towel test, as opposed to in a soil test. In fact 28.6% said they remove them in a soil/sand test.

3. Hypocotyl collar rot assessment also needs to be addressed. 55.6% of those labs responding stated they classify those seedlings as abnormal even though it is addressed in the rules. Also, 50% of labs responding said they classify an otherwise normal seedling that has a decayed epicotyl as normal and 50% said they classify it as abnormal. The amount of moisture and whether tests are re-watered or over watered varies also. Since too much moisture can effect the rolled towel germination of cowpeas in a negative way, I feel this also needs to be addressed.

There are other smaller details that need addressing, as you can see by the answers we got to other questions.

In conclusion I think that this referee has served to point out the discrepancies in the planting and evaluation of cowpea germination tests and I suggest that this matter be further explored in the form of a rule clarification, or the proposal of a rule specific to the evaluation of *Vigna unguiculata*.

(I am sorry I am not present to present this referee due to health issues, and I wish to thank all the labs who responded. I especially want to thank Anita Hall for her help in preparing this survey and compiling and evaluating the results.)

Respectfully submitted,  
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