

Connecticut in 1958; the early part of the growing season (about 3 - 4 weeks) was unusually cool and wet.

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12. Separation of cytoplasmic male sterility types by chromatography.

Chromatographic analysis applied to mature anthers of cytoplasmic male steriles from nine different sources in various stages of backcrossing to WF9 shows promise as a means for classifying these cytoplasms. The chromatograms were first inspected with short-wave ultra-violet light and later dipped in ninhydrin solution. Root tissues showed no marked differences in ultra-violet light fluorescence or absorption, or in their content of ninhydrin-positive materials. Chromatograms of anthers in early stage of development were similar except for the T sterile (previously reported

Ultra-violet light fluorescence and absorption patterns of the normal WF9 and the cytoplasmic steriles E, T and S were distinctly different from the other types examined (A, B, D, F, G and H) and from each other. The B and F sources appeared to be alike while the others fall into a separate group. Ninhydrin-positive patterns were less distinctly different

It is hoped that with a refinement of techniques, a further separation and identification of the cytoplasms chromatographically will be possible.

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1. Pollen viability studies.

Utilizing the bio-assay for corn pollen viability discussed previously, (MNL, Vol. 32, p. 18-19) additional experiments were undertaken in 1958. Some of the factors known to contribute to the pollen longevity viability problem were examined in greater detail. In some of the recent work, pollen kept viable for 8 days was not uncommon. The most favorable temperature for 8-day storage was +3°C., although temperatures from -8°C. to +10°C. will generally work nearly as well.

Attempts at suspending pollen in liquid diluents were entirely unsuccessful. 1.0M and 2.0M glycerol and mannitol and 100% glycerol failed to retain any viability in corn pollen for periods of time as short as 1 minute.