For most purposes, analysis of the labeled macromolecules can be accomplished by dissolving the embryo in strongly denaturing detergents, such as sodium dodecyl sulfate (SDS). However, for certain applications this may not be desirable. For instance, we have recently used this labeling procedure to study the synthesis of ribosomal proteins at different stages of embryogenesis (Kay & Jacobs-Lorena, submitted). The two-dimensional gel system that was used for the analysis of ribosomal proteins is incompatible with the presence of SDS. Other denaturing agents such as urea resulted in incomplete extraction of the labeled proteins from the embryos. We therefore extracted the labeled embryos sequentially with a buffer containing Triton X-100 and then with 66% acetic acid, an excellent protein solvent. In this way the labeled proteins were completely extracted. The Triton was then removed by ether extraction. To introduce the labeled proteins into electrohoresis buffer, a Biogel P6 (BioRad) gel filtration column was prepared in a 1-ml disposable syringe and equilibrated in electrophoresis buffer. The column was placed in a test tube over a 1.5 ml conical tube. The radioactive sample (approx. 100 ul) was applied onto the column and centrifuged for 2 min at 1,800 RPM. All of the labeled ribosomal proteins were recovered in the first eluate, while non-incorporated label and undesired ions were retained in the column. The eluate could then be used directly for electrophoresis. Alternative procedures to change the ionic composition of the ribosomal proteins to that of electrophoresis buffer, such as precipitation with trichloroacetic acid or dialisys, were not satisfactory in that the recovery was low or unpredictable.

In summary, a simple procedure for very efficient radiolabeling and analysis of embryonic macromolecules is described. Because the embryos are disrupted, all tissues are equally exposed to the isotope allowing for uniform labeling of embryos at any developmental stage.

References: Limbourg, B. & M. Zalokar 1973, Dev. Biol. 35:382-387; Raff, E.C., M.T. Fuller, T.C. Kaufman, K.J. Kemphues, J.E. Rudolph & R.A. Raff 1982, Cell 28:33-40.

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Larval substrates of wild Drosophila.

For the past several years we have been sampling Drosophila populations from different communities near Cedar Falls, Iowa (Jennings et al., submitted to Proc. Iowa Acad. Sci.; Seager & Jennings 1984). In order to add to our knowledge of natural breeding sites of Drosophila, in conjunction with our 1983 collections we attempted to rear adult flies from probable larval substrates found in a lowland forest community. These data were gathered in order to determine the possible success of a more thorough future study of this type. In addition we observed adult flies on some of these substrates and collected (aspirated) them for later identification. The data we report here are preliminary since our fungal identifications have not been verified by taxonomists. For future collections we have enlisted the aid of a fungal expert.

The substrates from which adults were either reared or aspirated and the species involved are:

Agaricus sp.: **D.tripunctata** and **D.falleni** were both reared and aspirated and **D.testacea** was reared from this species.

Tremella sp.: **D.putrida** and **D.falleni** were both reared and aspirated from this species.

Juglans nigra (black walnut): **D.tripunctata** was aspirated from walnuts.

Morus sp. (mulberries): **D.affinis, D.falleni, D.putrida,** and **D.tripunctata** were all aspirated from fallen mulberries.

In addition, four fungal growths which we were unable to key were studied. **D.quinaria, D.putrida, D.tripunctata,** and **D.falleni** were all reared from at least one of these, and **D.putrida, D.tripunctata, D.falleni,** and **D.testacea** were all aspirated from at least one of these.

The lack of suitable larval substrates will limit the distribution of a species. **D.tripunctata** was very common in our collections from a lowland forest community but was not found in samples taken at the same time from a nearby sand prairie community (Seager & Jennings 1984). At least two of the substrates that this species apparently uses, walnuts and mulberries, are present in the lowland community but are absent from the sand prairie community. Thus the absence of a suitable larval substrate may restrict the distribution of **D.tripunctata.** This is a possibility that we will explore in more detail in the future.

Reference: Seager & Jennings 1984, DIS 60:182-184.