Fly Larvae Media 5S6Z*

DESCRIPTION

Fly Larvae Media 5S6Z is a special fly culture product that provides a medium to propagate laboratory flies. When mixed with dry yeast and glucose, sucrose, or maltose, this product completes the total culture needed to raise flies as outlined by Chemical Specialties Manufacturer's Association.

Features and Benefits

- Forms a complete medium with just two ingredients
- Convenient - reduces the number of special ingredients scientists need to purchase
- Produces a loose, fluffy medium which is ideal for rearing culture

Product Forms Available

- Meal

GUARANTEED ANALYSIS

Crude protein not less than 9.0%
Crude fat not less than 1.5%
Crude fiber not more than 30.0%

INGREDIENTS

Ground oat hulls, ground barley, wheat bran, dehydrated alfalfa meal.

FEEDING DIRECTIONS

Fly Larvae Media 5S6Z is used as an ingredient in the preparation of CSMA Fly Larvae Media. Mix a redetermined amount of dry Fly Larvae Media with an appropriate amount of an aqueous suspension of dry or moist cake yeast and glucose, sucrose, or maltose.[1] Composition of adult fly food is different than the Larvae Medium and is specified in CSMA reference.[2]

Important Considerations

Store in a dry well-ventilated area free from rodents and insects. Do not use moldy or insect-infested feed.

FLY CULTURE PROCEDURES WITH FLY LARVAE MEDIA 5S6Z

Rearing of Flies

The first step in the rearing of flies is the transfer of eggs to a medium suitable for the development of larvae. The pupae are collected from the medium and placed inside of cages, and the adult flies emerge and remain in these cages until the day of testing. A culture is defined as all adults resulting from the seeding of eggs collected at one time on a given date.

Larval Medium

The preferred containers are cylindrical glass battery jars approximately 6 in. in diameter and 9 in. high. For one jar mix 340 gm. (12 oz.) dry CSMA Standard Fly Larval Media[3] with approximately 750 cc. of an aqueous suspension containing 15 gm. moist cake yeast[4] or 5 gm. dry yeast[4] and 10 cc. 50% solution of glucose, sucrose or maltose. Mix thoroughly until a loose, fluffy medium is obtained, transfer it to the battery jar without packing, cover with cloth and set in the insectary. The amount of suspension required for best rearing results will need to be determined in each laboratory and it may be varied in order to prevent mold growth. It is suggested that the medium be prepared in the late afternoon of the day before egg collection.

Eggs

Eggs are collected for a period not longer than 16 hours from food dishes or other oviposition media in cages containing mature flies not more than 8 days old. It is suggested that fresh oviposition medium be placed in fly cages in the late afternoon and eggs be collected early on the following morning. After collecting the eggs they must be measured and seeded without delay. Wash the eggs in tap water at room temperature and measure 2,000 eggs as accurately as possible. This may be done by allowing the eggs to settle in a calibrated pits or cells. Use 10 cc. of tap water to measure and to scatter the eggs in a pit or trench 0.5 inches deep and located in the center of the surface of the larval medium. Cover the eggs with loose medium, replace the cloth covers on the jars and set jars in the insectary so that at least 1.5 inch separates each jar to permit free air circulation. The maximum temperature in the jar (about 3 days later) must not exceed 130°F. Under normal conditions, more than 85 percent of the eggs should hatch within 36 hours of the time they are laid.

Pupae

Mature larvae migrate to the top portion of the medium and normally all larvae will have pupated by the seventh day after seeding eggs. When this occurs, the portion of the medium containing pupae is loosened, poured into a shallow tray and air dried at room temperature. An electric fan may be used to hasten drying. Pupae are separated from the dry medium by sprinkling the pupae-medium mixture on an inclined tray or chute set in front of an air blast such as that from an electric fan. The pupae must be handled gently and as little as possible in order to avoid injury. Any method that permits at least 95 percent of flies to emerge is considered satisfactory. An air separation apparatus (5) for separating pupae is used by several laboratories and found to be more rapid than the inclined tray method. The apparatus employs a blower, a cyclone collector, and a suction pipe. The device separates the heavier pupae from the layer of vermiculite placed on the surface of the fly medium before the larvae pupate. A 2 inch layer of vermiculite should be placed on the larva medium three or four days after seeding. Six days after seeding the mixture of vermiculite and pupae is loosened and poured on a tray and separated. Terra Lite Brand Vermiculite Soil Conditioner, available in 20 pound bags from some garden stores, has been found satisfactory for use in this procedure. All of the pupae maturing on a given day are combined into one lot, mixed and measured into test units. Each group is placed in a shallow dish which is, in turn, placed in a cage which provides at least 1 cu. inch of space per pupa. If the large group procedure is used, the test unit consists of approximately 500 pupae. If the small group procedure is used, more than 500 pupae are placed in stock cages and adult flies are sampled prior to testing. Under normal rearing conditions, at least 80 adult flies should be obtained for each 100 eggs seeded.

Adult Fly Food

The food for adult flies shall consist of 5 percent spray dried, nonfat milk solids and 2 percent granulated sugar thoroughly dispersed in water. Roller dried or caked milk solids settle out of suspension within a few hours and are unsuitable as food. Each cage is supplied daily with a dish containing at least 15 cc. food for each 100 flies, and so prepared as to prevent the flies from drowning. Satisfactory food must be available to the flies at all times. The adult flies are held until the second day of oviposition (usually 12 to 14 days after eggs are seeded) when they are ready for testing.

*Product Code

1. Yeasts are products of Standard Brands, Inc., and are usually available from local distributors.
2. Details are those from the Official Method of the Chemical Specialties Manufacturers Assoc., Soap & Chemical Specialties, Blue Book 47: 159 (1971).
3. Order from PMI Nutrition International—Fly Larvae Media 5S6Z
4. Yeasts are products of Standard Brands, Inc., and are usually available from local distributors. Details are those from the Official Method of the Chemical Specialities Manufacturers Assoc., Soap & Chemical Specialties, Blue Boo 47: 159 (1971).