COMPLETE SQUIRREL MONKEY DIET IN TABLET FORM

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Ellison and Riddle (1961) described a commercial liquid diet for the maintenance of experimental squirrel monkeys in behavioral studies. That diet is nutritionally desirable but presenting it reliably in uniform amounts posed several problems. These have been solved by preparing the same diet in tablet form.

Tablet Formula		
	Percent by weight	mg/tablet
Casein (purified, vitamin free) (Nutritional Biochemical Corporation)	23.9	57.00
Confectioner's sugar, 6X	36.7	87.45
Salt mixture, U.S.P. XIV (Nutritional Biochemical Corp.)	4.0	9.60
Avicel (American Viscose Corp.)	23.9	57.00
Cottonseed oil (Wesson)	8.0	19.05
Purified water	Variable	Variable
Vitamin diet fortification mixture (Nutritional Biochemical Corp.)	3.0	7.50
Magnesium stearate, U.S.P.	0.5	1.20

Tablets offer several advantages over a liquid mix: daily preparation is unnecessary; food delivery may be accurately measured; mechanical failures are reduced because equipment stays clean; and waste is reduced because there is no feeder reservoir to be emptied at the end of each day.

Most commercial food preparations are actually pellets, *i.e.*, extruded cylinders of unequal length and weight, many of which crumble into particles which jam the dispenser. The cylindrical shape and sharp edges of the pellets themselves also contribute to magazine jamming. The rounded shape and tough consistency of our tablet appear to be real advantages over other types of reinforcers

now available. Over a million of these tablets have been delivered through a modified Gerbrands dispenser without the tablets contributing to a single failure.

The tablet is a modified ball-shape of $\frac{9}{32}$ in. diameter with a $\frac{5}{32}$ in. radius of curvature and a thickness of 0.255 ± 0.005 in. To accommodate it, the holes in the pellet disc of the Gerbrands Model D dispenser must be enlarged to $\frac{5}{16}$ in. The tablet weighs 238.8 mg, is round enough to be dispensed without jamming, hard enough to be dispensed without breaking, and large enough to serve as an adequate reinforcer. Approximately 120 tablets per day delivered over a 3 hr experimental session maintains a 600- to 800-g squirrel monkey at 80% of normal body weight without additional outside feeding.

To prepare the tablets, the casein, sugar, salt mixture, Avicel (micro-crystalline cellulose) and oil are well mixed and wetted with hot water to the proper consistency. The wet mass is screened and dried. The dried granules are then screened, the remaining ingredients added, and the material compressed into tablets.

The amount of Avicel is greater than in the original liquid diet formula to take up the oil; however, the ratio of all other ingredients to the vitamin mix is the same. Long-term stability of the vitamins in the tablets has not yet been determined. Tablets are made monthly and stored at 5° centigrade.

Many private formulation companies as well as the schools of pharmacy at some universities could prepare the tablets using these directions.

REFERENCE

- Ellison, T. and Riddle, W. C. Commercial liquid diet for animals in behavioral studies. *J. exp. Anal. Behav.*, 1961, 4, 370.

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