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**The vitamin content of raisins, dried raisin seeds and raisin seed oil.<sup>1</sup>**

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Commercial raisins are most commonly prepared by drying two types of grapes, the small Sultanina (Thompson seedless raisin) and the large Muscat of Alexandria (commonly called the Muscat or Malaga raisin). When the latter is dried and sold without removing the seeds, it is known as "loose" Muscat raisin. When the seeds are removed the term "seeded Muscat raisin" is applied.

In this investigation studies have been made on the Thompson seedless raisin, the loose Muscat raisin, the seeded Muscat, raisin seed oil and dried raisin seeds. One hundred and fifty-six rats were used in the experiments dealing with the study of vitamin A and the usual technique was employed with the exception that the yeast was fed in pellet form separate from the ration. In all of the experiments the animals were confined in separate cages and at least eight animals constituted an experimental group, on the same diet. Food intake records were kept for each individual. The raisin materials were mixed (in ground form) with the basal ration, with the exception of the raisin seed oil, which was fed separately.

A total of eighty-three rats were used in the study of vitamin B and the usual technique was followed with the exception that 5 drops of crude cod liver oil were fed separately each day instead of butter fat.

Thirty guinea pigs were fed the following basal ration in the study of vitamin C.

Rolled oats.....	40 per cent.
Milk powder.....	30 per cent.
Bran .....	19 per cent.
NaCl .....	1 per cent.
Yeast .....	5 per cent.
Cod liver oil.....	5 per cent.

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<sup>1</sup> A portion of the expense of this investigation was defrayed by a grant from the Sun-Maid Raisin Growers Association.

The oats, milk powder and bran were mixed and autoclaved for two hours at a pressure of twenty pounds and the other ingredients were added later. Inasmuch as the guinea pigs would not eat the raisin preparations a water extract was prepared daily in a standardized manner.

The results obtained indicate that

1. There is little, if any, vitamin A in Thompson seedless raisins, loose Muscat raisins, seeded Muscat raisins or raisin seed oil.

2. Vitamin B is present in the Thompson seedless raisin. When forty per cent. of the basal ration consisted of Thompson seedless raisins rats grew normally.

3. Loose Muscat raisins (with seeds) appear to be richer in vitamin B than the Thompson seedless raisin, good growth having been obtained on a basal ration consisting of twenty per cent. of loose Muscat raisins.

4. Seeded Muscat raisins seem to have about the same content of vitamin B as Thompson seedless raisins.

5. Dried raisin seeds were not as rich in vitamin B as Thompson seedless raisins.

6. It is possible that a portion of vitamin B is destroyed during the steaming, seeding and subsequent drying process in the manufacture of seeded Muscat raisins.

7. It was not possible to demonstrate the presence of vitamin C in the Thompson seedless raisin, the loose Muscat raisin or the seeded Muscat raisin.

A detailed report of this work will be published later.