tion occurs in more vulnerable sites, for example, intestinal mucosa or bone marrow. For investigation of this problem a rapid and specific method for the estimation of lipid peroxide is essential.

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Variety, Developmental Stage and Dose Rate in Irradiation of the Potato

Up-to-Date and Gola potatoes were irradiated about 2 weeks after lifting with 3,000, 6,000 and 9,000 rads of cobalt-60 γ-rays at the rate of 3,000 rad/min and cold-stored with appropriate controls at 11°–12° C (relative humidity 85–90 per cent). There were 20 potatoes in every one of the treatments, including the controls. The percentages of tubers sprouting in the various lots after 4 months of cold storage are recorded in Table 1. The optimum γ-radiation dose, two weeks after lifting, appears to be 9,000 rads for Up-to-Date and 6,000 rads for Gola. Rubin and Metlitsky[1] reported that Berlikhingen variety of potato needs a higher γ-radiation dose than Moscow variety for prevention of sprouting.

Up-to-Date potatoes were received in the Laboratory about 2 weeks after lifting and stocked at room temperature (18°–33° C, relative humidity 55–75 per cent). At room temperature, none of the tubers sprouted for a period of 3 months. From this stock samples were withdrawn after 0, 1, 2 and 3 months of storage and irradiated with 8,000, 9,000, 10,000, 11,000 and 12,000 rads of γ-rays at the rate of 3,000 rads/min. After irradiation, the potatoes were cold stored at 11°–12° C (relative humidity 85–90 per cent) together with controls. There were 20 tubers in every one of the treatments, including the controls. The percentages of tubers sprouting in the various lots after 4 months of cold storage are recorded in Table 2. The results indicate that the nearer the potatoes are to the stage where the dormancy breaks the greater is the rise in the γ-radiation dose for prevention of sprouting.

Up-to-Date potatoes were irradiated with 9,000 rads of γ-rays at two dose rates, namely, 250 and 3,000 rads/min, approximately two weeks after lifting. Gola potatoes were irradiated with 6,000 rads of γ-rays at the same two dose rates about two weeks after lifting. All the lots, together with the controls, were cold stored at 11°–12° C (relative humidity 85–90 per cent). The percentages of tubers sprouting, based on 20 potatoes in every treatment, after 4 months of cold storage are presented in Table 3. A dose rate of 3,000 rads/min is more effective in the prevention of sprouting in potatoes than a dose rate of 250 rads/min when the same dose is applied.

Table 1. Percentages of Tubers sprouting in Irradiated Up-to-date and Gola Potatoes after 4 Months of Cold Storage (11°–12° C, Relative Humidity 85–90 per cent)

Variety	Dose (rads) 0	3,000	6,000	9,000
Up-to-date	100	25	15	nil
Gola	100	30	nil	nil

Table 2. Percentages of Tubers sprouting in Up-to-Date Potatoes (Transferred from Room Temperature at Various Developmental Stages) after 4 Months of Cold Storage (11°–12° C, Relative Humidity 85–90 per cent)

Storage period at room temperature (months)	Dose (rads) 0	8,000	9,000	10,000	11,000	12,000
0	100	10	nil	nil	nil	nil
1	100	15	nil	nil	nil	nil
2	100	25	10	nil	nil	nil
3	100	40	25	15	5	nil

Table 3. Percentages of Tubers sprouting in Irradiated Up-to-date and Gola Potatoes after 4 Months of Cold Storage (11°–12° C, Relative Humidity 85–90 per cent)

Variety	Dose, 6,000 (rads) Dose rate (rads/min) 0	250	3,000	Dose, 9,000 (rads) Dose rate (rads/min) 0	250	3,000
Up-to-date	—	—	—	100	15	nil
Gola	100	20	nil	—	—	—

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BIOLOGY

In vitro Control of Flowering in *Wolffia microscopica*

The duckweeds (Lemnaceae) are the smallest flowering plants in the world. *Wolffia*, the minutest of them, is just about the size of a pinhead. Curiously, flowering of this genus even in Nature has been observed only in a few cases, and many species are known to botanists only by their vegetative characters. Attempts have been made to induce flowering *in vitro* in several laboratories, but success has so far been achieved in two strains only, one of *Lemna gibba*[1] and the other of *L. perpusilla*[2]. The former behaves as a long-day and the latter as a day-neutral plant when grown on a Hoagland-type of medium. Recently we were able to induce flowering in *Wolffia microscopica*.

The specimens were collected locally. There is no distinct stem, leaf or root, and the plant is represented merely by a disk-like structure, flat above and slightly conical on the underside (Fig. 1*a*, *b*). In extremely crowded conditions the ventral projection often elongates to a length of 2–3 mm, but it is devoid of any vascular elements. The plant has a pouch on one side and it reproduces vegetatively by producing daughter plants in this pouch. Under conditions inductive to flowering, a furrow appears on the surface of the frond and a 'flower' comprising a bilobed stamen and a carpel emerges through it.

Considerable difficulty was experienced in bringing the plant to sterile culture as concentrations of common disinfectants, effective for sterilizing, are fatal. Among a couple of thousand plants, a few sterilized by mercuric chloride (0·005 per cent) escaped injury and were sub-cultured further in 50-ml. Erlenmeyer flasks. Each flask had 20 ml. of nutrient medium containing the following salt concentrations per litre: KNO_3 85 mg, $CaNO_3.4H_2O$ 242 mg, KH_2PO_4 20 mg, KCl 60 mg, $MgSO_4.7H_2O$ 42 mg, $ZnSO_4$ 5 mg, H_3BO_3 5 mg, $CuSO_4$ 0·025 mg, $NaMoO_4$ 0·025 mg, $CoCl_2$ 0·025 mg and ferric citrate 4 mg.

At 24°–26° C and under 16-h daily illumination from a bank of mixed cool-white fluorescent and tungsten lamps, of 500–550 ft.-candle intensity, the plants remained healthy and grew vegetatively. Multiplication rates, calculated according to Clark's[3] method, approached values close to 220.

Culture flasks, each containing 10 plants all genetically alike, were exposed to photoperiods varying from continuous illumination to 6 h of light per day. When the