GENERAL SCIENCE

Betting Aids Research

Norway's soccer betting monopoly helps support first sports, then research. Considerable scientific gain has been made possible by this method.

By RICHARD LITELL

From Oslo, Norway

SCIENTIFIC research in Norway receives considerable financial support from betting profits.

The betting involves 12 weekly soccer matches. Last year's bet sales, handled by 3,889 agents throughout Norway, grossed almost $14,000,000.

Three scientific research councils share the greater part of the betting profits. They are the Royal Norwegian Council for Scientific and Industrial Research, the Norwegian Research Council for Science and the Humanities, and the Agricultural Research Council of Norway. The money they receive can be used at the discretion of each council.

The betting profits are distributed in this manner. All of the first million kroner goes to the promotion of sports. Of the second million kroner, 200,000 go to scientific research; of the third million, 400,000 go to research; of the fourth, 600,000 go to research, and of each additional million kroner, 800,000 go to research. (One U. S. dollar equals approximately 7.10 kroner).

In 1958, the monopoly earned a net profit of almost $5,000,000. This means more than $1,000,000 will be allocated to sports promotion, while almost $4,000,000 will go to scientific research. The latter $4,000,000 will be distributed among the three councils through the Joint Committee of the Norwegian Research Councils. The amount is considered quite appreciable for a small country. The population of Norway is about 3,500,000.

The betting profits represent a sizable portion of each council's total budget. For example, about one-third of the 1958-59 budget of the Royal Norwegian Council for Scientific and Industrial Research came from betting profits. Since this council was established in 1947, it has received about $8,500,000 from the soccer pool.

The soccer betting monopoly is independent of the Norwegian national lottery, run entirely by the Government.

Simulate Ocean Currents

HOW OCEAN CURRENTS affect fish behavior will be studied in a huge circular tank that is part of a new aquarium being built in Bergen, Norway.

The tank is three meters wide and forms the outer ring of a circular research installation 16 meters in diameter. The center of the circle contains an observation room from which scientists may observe water and fish within the tank through windows.

The ten-foot deep tank will be divided into ten sections, each separated from the observation room by two windows and each able to be closed off from the rest of the tank.

Marine scientists hope to be able to create different layers of currents within the tank by varying the density of water fed into the tank from different taps.

Science News Letter, September 12, 1959

BOTANY

Winter Rye Flowers Without Cold Spell

COLD-LOVING rye plants have been made to flower and produce grain without any winter and in about one-third the normal time.

This is the first time that a grass, as rye is known botanically, has been induced to produce grain without the natural cold treatment called vernalization. There is also evidence that related plants such as barley and perhaps wheat may be affected in the same way, Dr. Harry R. Highkin of the California Institute of Technology reported.

Rye and other grains that formerly could not be grown in the tropics may now possibly be grown in these regions.

Gibberellin, a plant growth hormone, sprayed on the young rye plants at precisely the right time is the treatment used. Dr. Highkin and his co-workers, Dr. Dov Koller of Israel and Osvaldo H. Caso of Argentina, found that if gibberellin is applied when the plant has ten leaves, which occurs at about one month, early grain is produced.

The young rye plants were grown under controlled conditions at Caltech's Earhart Plant Research Laboratory. A constant temperature of 62 degrees was maintained. A relatively weak solution of gibberellin was used, only 200 parts per million parts of water. The spraying was carried on for seven consecutive days.

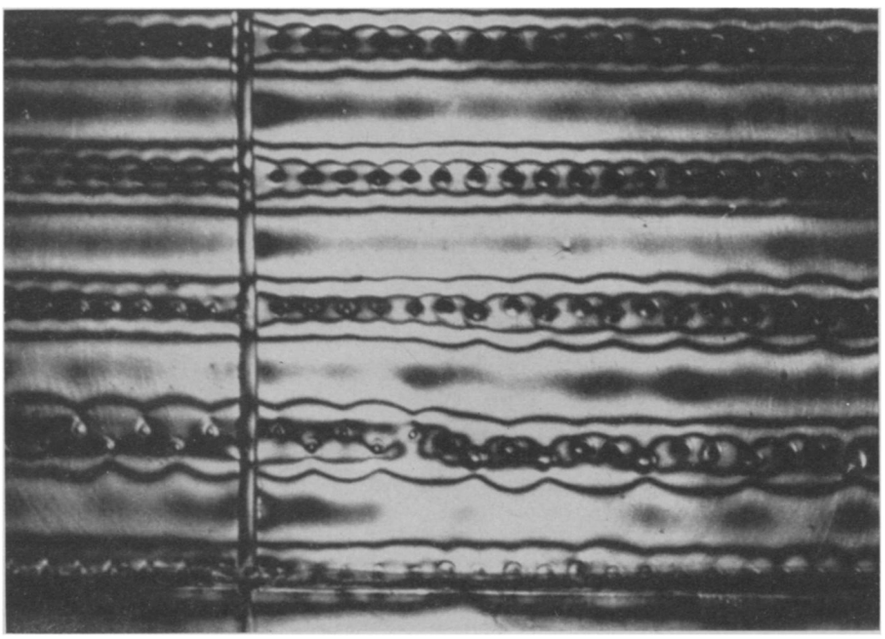
"The method is simple and it is practical commercially," Dr. Highkin said. For experimental purposes, two and possibly three generations of winter rye can be raised in one season in a greenhouse.

It is still not known what takes place when grasses flower without vernalization. Two hormones, gibberellin and florigen—the hormone or hormones that the plant secretes to produce flowers—are believed to be involved.

Indications are that spraying at even the nine-leaf stage produces less successful results. Further there is evidence that results grow progressively worse the earlier the spray is applied. Experiments are under way to explore these findings, and also to determine how quickly grain can be produced by spraying plants that have 15 leaves.

These experiments should show how much gibberellin should be used and when the best time for spraying occurs.

Science News Letter, September 12, 1959



PHOTOSTRESS PLASTIC—This new quantitative stress analysis tool converts strain into color so that the strain pattern in an actual part can be seen. Here PhotoStress plastic is applied to a spot welded stainless steel aircraft structure. Dark lines in the plastic are fringes indicating stress distribution around the welds. The distribution of loads between the lines of welds can thus be determined.