European agriculture

Politics before scientific advice

LAST week's decision by the British agriculture minister to ban the use of growth-promoting hormones in cattle, following a European Commission directive to that effect, has drawn attention to an extraordinary incident last October. Then, the European Commissioner for Agriculture, Mr Frans Andriessen, suddenly suspended his scientific committee just four days before it was to prepare its final advice on the use of the hormones.

The committee, chaired by Professor G. E. Lamming of the Department of Physiology and Environmental Studies at the University of Nottingham, had reported in 1983 that the use of natural hormones such as oestradiol, progesterone, and testosterone in the form of implants in the ear of an animal was harmless to final consumers of the meat, even to pre-pubescent children, potentially the most sensitive group. Last year the committee, containing 22 senior European endocrinologists and toxicologists, was putting the final touches to its report on 'zenobiotics', or artificial hormones, such as zeronol and trenbolone when Commissioner Andriessen gave the order to stop. This effectively gagged the scientists as they are forbidden to reveal the results of their five-year study without the permission of the Commission; but it is widely believed that they would have given zenobiotics the same clean bill of health, provided use were controlled and monitored, as that gained by natural hormones. Just two months later, Andriessen successfully steered through the Council of Ministers a directive banning all agricultural use of hormones.

The British government, facing less public opposition to hormone use than its continental partners, voted against the ban in the Council of Ministers. But, faced with a possible loss of European markets if Britain failed to ban hormones, it now has little choice but to implement the directive. According to the Ministry of Agriculture, Fisheries and Food (MAFF), British meat exports to Europe are worth some £400 million annually. The use of hormones (to make the 50 per cent of British beef which comes from castrated cattle grow faster and produce leaner meat) probably adds only £40 million to meat values, MAFF estimates. Nevertheless Britain is pursuing its action in the European Court challenging the legality of the vote on the directive last December.

Lamming says he "does not want to get involved in politics", and is bound by contract to say nothing about his committee's report on the zenobiotics, but he is clearly disturbed at the possible consequences of the blanket ban on hormone growth promoters now in place in Europe. He believes that the ban could make the situation more, rather than less, dangerous. Hormones in open use, are supplied from slow-release implants in the ear, a part of the animal not used for meat and where the implant can easily be detected. The implants diffuse small amount of hormones through the body of the animal; a pre-pubescent girl having 100 times more testosterone in her body than she could receive from a normal diet of hormone-treated meat; or a pre-pubescent boy 300 times the oestradiol he might receive from the same source. With the hormones banned, unscrupulous farmers will bury the implants deep in the muscle tissue of the animals, probably in the most expensive cuts where inspectors are least likely to disturb a carcass, so certain slices of meat could contain far above average levels of hormone.

Lamming and his committee are, to say the least, put out by the Commission's decision. "We've done five years' work, collected voluminous data, and can't publish". Lamming for one will not be joining an *ad hoc* European committee again. But the major issue, which has risen again and again in Europe, is the preparedness of European ministers, who after all backed Andriessen's directive, to go ahead without listening to effective scientific advice.

Robert Walgate

Japanese space science

Joint project for solar maximum

Tokyo

JAPAN'S space programme may be tiny compared with that of the United States but its size is not preventing it offering a little hospitality to others. The Institute of Space and Astronautical Science (ISAS) has invited US researchers to place a soft X-ray telescope aboard their solar observation satellite scheduled for launch at the start of the next solar maximum in 1991.

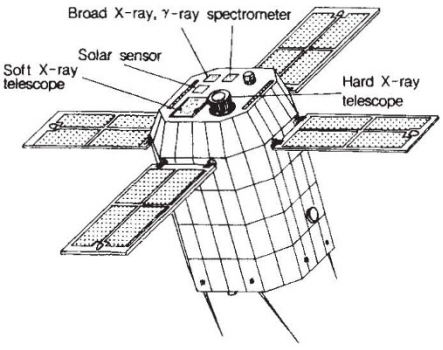
The Japanese High Energy Solar Physics (HESP) mission follows ISAS's Hinotori satellite and the US Solar Maximum Mission that observed solar flares during the last solar maximum in 1981–82. The new ISAS solar satellite, Solar A, will be placed in low-Earth orbit where the US soft X-ray telescope and a Japanese hard X-ray telescope will be trained on the Sun.

Designed to give high spatial and time resolution, both telescopes will allow second-by-second image analysis of solar flares as they grow and die. The hard X rays will reveal the hottest (greater than 30 million kelvin) kernel of flares during their flash phase, whereas the soft X rays will provide images of the cooler pre- and post-flash phases. If there is room for them, spectrometers will also be carried aboard the satellite.

According to the director of ISAS, Professor Minoru Oda, US participation in HESP will be funded through NASA's Explorer programme. An announcement of opportunity was made by NASA last March and official selection of the US team is expected this month.

Difficulties in setting up the joint project occurred, according to Oda, because of differences in approach between the United States and Japan. Whereas ISAS scientists gradually develop, refine and polish a project, and obtain final budget approval once a fairly concrete plan has emerged, NASA starts with a concrete plan and budget and solicits proposals. Other problems arose over the designation of principal investigators. But eventually, says Oda, a *tamamushi* agreement was reached (the *tamamushi* is an iridescent beetle whose colour changes according to the angle you look at it).

The satellite is expected to be about 2 m long and 1 m wide with three-axis stabilization to point the long axis towards the Sun. Weighing about 400 kg it will be launched to an altitude of 550–600 km by a



US and Japanese X-ray telescopes will share the new satellite.

Mu-3S-II rocket from the Kagoshima Space Centre during the August–September 1991 launch window. Apart from the US telescope, the total budget for the mission, which awaits final approval by Japan's Ministry of Finance, is expected to be about 4,000 million yen (£17 million), a mere fraction of the cost of launching a comparable satellite in the United States.

The cheapness of ISAS missions is easy to explain. ISAS scientists design, test, launch, monitor and sometimes even build their satellites and rockets, and although work is farmed out to private companies such as Nissan and NEC, there is no principal contractor. Final liability thus rests with ISAS, which substantially reduces the costs. Such an approach also has the advantage of great flexibility, but as Oda points out, it leaves precious little time for science.

David Swinbanks