Serbia's universities come under attack

Sir — Recent political manoeuvring within the Serbian government in Belgrade has turned from bad to disastrous. The first target of the new coalition government has been Serbian universities and research institutes, followed by attacks on the independent media.

Top academic and scientific institutions have been chosen for various reasons. First, it is revenge for the universities' activities during the 1996–97 protests, which were instrumental in invalidating the mockery of an election. It is also a precautionary move against eventual new challenges to the autocratic regime. The second motive is the hatred which vice prime minister Dr (*sic*) Vojislav Sheshely and his followers feel towards academics and intellectuals in general, making the present attempts to destroy Serbian universities particularly dangerous. Sheshely is a member of the board of the Fund for Serbia's Development and of several university and institute boards.

Two main features in the University Act, passed recently in the National Assembly, threaten to have a devastating effect on the educational system and scientific research.

First, the government has taken direct control of the entire structure and functioning of universities, appointing chancellors and deans, who in turn appoint practically all university staff. This has led to a purge of all "unsuitable employees", while incompetent people are being appointed to deans' and professors' chairs.

Second, all research institutes have been expelled from the universities (including eight from Belgrade University). The new minister for science and technology emphasizes that the institutes may only expect funds from the government if their products can find their way onto the supermarket shelves! The implications for fundamental research are clear. Scientific output, already badly hit by the sanctions, will drop rapidly.

As for the universities, the first practical step taken by the government has been to dismiss all the staff, and ask those who want to stay to sign "contracts" with new university authorities (a pledge of loyalty to the regime, in fact). Many employees have refused to sign this humiliating paper and some have already been fired.

An immediate consequence of the new regime at the universities will be a drastic decrease in the amount and quality of teaching. In the past, some Serbian universities — in particular the largest, Belgrade — have had a good reputation abroad, and have provided gifted graduates to foreign research centres and colleges.

As a result of the current moves against academic freedom and top-rank intellectuals, most gifted young people will enrol in colleges abroad —if they can afford it. The most eminent professors will also leave the country for jobs abroad.

With the 'war' in Kosovo continuing, and the threat of military action against Serbia by the international community, prospects for the country appear gloomy indeed. As someone put it recently, with our current regime, we do not need NATO bombs at all.

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Transgene risk is not too low to be tested

Sir — In the News story[1] "Organic farmer takes gene battle to court", the view is reported that "the probability of cross-pollination, and its effects on the environment and food safety, is too small to be studied effectively". But the probability of cross-pollination is a different issue from the effect of transgenes on the environment and food, which is not one of probability, but one that is amenable to experimental study. What is a matter of probability is whether cross-pollination can occur at all.

Studies of cross-pollination in maize in the United Kingdom are unlikely to be as extensive or informative as they are for some other well studied indigenous crops such as sugar beet. The probability of genes escaping in beet can be more accurately estimated[2,3], which may provide useful guidance for the maize problem.

Although quantification of rate of spread of transgenes through pollen and seed dispersal should be an essential part of risk assessment for genetically modified organisms, greater insight into the movement of genes can be gained by indirect methods. There are several documented cases of crossing having occurred between wild beet and sugar beet, evidence being derived from observations of morphological genetic markers (see, for example, refs 4–6).

These results accord with a comprehensive assessment of other UK crops[7] in which the average isolation distance for outcrossing species is calculated. Figures of 180 m and 3,200 m are quoted for maize and beet, respectively, but the important point is that actual distances of gene flow are almost certainly not only crop-specific but also variety-, site- and season-specific. As a result, the so-called isolation distance quoted in the News story of "about 200 m" for maize could allow as much as 10% of alien pollen to effect fertilization if work on natural populations of radish is a reliable indicator[8].

Bearing these sources of inaccuracies in mind, can further scientific studies help to assess the risk of alien gene flow? It is clear that transgenic sugar beet is just as effective as non-transgenic beet at crossing with the wild type. "Weed beets", considered for many years to result from hybridization of sugar beet with wild beet, have been shown to be of such a hybrid origin using combinations of mitochondrial, chloroplast and nuclear DNA markers[9]. Microsatellite loci have been used to examine population structure among UK sea-beet populations[10], pointing the way to their use for studying gene movement between the beet crop and wild forms. Other marker systems show that sugar beet and wild beet can be effectively discriminated[11], and DNA microsatellite studies have demonstrated very high levels of polymorphism that could be used to discriminate between wild beets and sugar-beet varieties[12], with a high likelihood of being able to detect hybrids even of an introgressed nature.

The application of such markers is not confined to beets. Hybridization rates between wild *Brassica rapa* and cultivated *B. napus* have been reported in Scientific Correspondence[13]. Experiments such as these are essential to indicate how we can estimate risks of transgenes being released into the environment. They also call into question the view that the probability of cross-pollination is too small to be studied effectively.

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