(representative) number of individuals should be analysed and appropriate statistical analyses should be used to test for significant differences between varieties.

At present a big number of fingerprinting techniques exists to detect diversity at the DNA level. Two techniques, AFLP (Amplified Fragment Lenght Polymorphism) and SSR (Simple Sequence Repeats), which have proven to be very useful for the screening of polymorphisms among a set of individuals are used at the Department of Applied Plant Genetics and Breeding. These two techniques differ in multiplex ratio (number of loci that are screened in a single reaction) and in information content (number of alleles that can be detected per marker in a set of individuals, Rafalski *et al.* 1996). AFLP has a higher multiplex ratio, while SSR mark-ers have a higher information content.

It will be presented in which way the molecular fingerprinting techniques are being applied at the Department of Applied Plant Genetics and Breeding for the evaluation of genetic diversity. The applications that will be presented can be divided into two main groups : i) germplasm analysis in ryegrass and azalea and ii) description and identification of commercial varieties of ryegrass, sugar beet and azalea. AFLP has already been successfully used for all the applications mentioned above, while SSR is still under development for ryegrass and azalea.

Ecological implications of life-forms in intertidal benthic diatoms in macrotidal estuaries

Koen Sabbe, Wim Vyverman, Koenraad Muylaert & Ilse Hamels

University of Gent, Department of Morphology, Systematics & Ecology, Section Protistology and Aquatic Ecology, K.L. Ledeganckstraat 35, B-9000 Gent, Belgium

Diatom communities inhabiting intertidal estuarine sediments are composed of different life-forms, ranging from adnate epipsammic to free-living epipelic and tychoplanktonic forms. A detailed study of the spatial and temporal distribution patterns of various life-forms in the macro-tidal Westerschelde estuary (South-West Netherlands) revealed

that the specific life-form composition of a community has an important influence on its temporal dynamics and might also have major implications for the transfer of diatom-fixed carbon to higher trophic levels.

The importance of substrate structure and availability, stochastic (e.g. climate-induced and anthropogenic) hydrodynamic events and the nature and rate of sediment development in regulating the dynamics of these communities are evaluated.

Does reedbed mowing bottleneck *Lipara lucens* populations ?

M. Santens, L. De Bruyn & R. Verhagen

University of Antwerp (RUCA), Department of Biology, Evolutionary Biology Group
E-mail : santens@ruca.ua.ac.be

The fragmentation of reedbeds, the home of the gall-forming *Phragmites* parasite *Lipara lucens,* results in a system of metapopulations with frequent extinctions and recolonizations. Moreover large reedbeds are frequently mown for conservation purposes which also results in complete are almost complete population extinction. To investigate the effects of such events on the genetic composition of affected populations, we caused artificial extinctions in five *L. lucens* populations near Antwerpen. This was done by mowing the reedbeds in late winter with removal of the litter and with it the *L. lucens* galls. All five reedbeds were recolonized by *L. lucens* in the generation following the artificial extinction. The genetic consequences of these events were studied by comparing the genetic composition, assessed by way of allozyme electrophoresis, of the native and the founder population. Generally, it is assumed that when a population goes through a bottleneck, genetic variability decreases.

Reduction in genetic diversity (expected heterozygosity) was only found in the smallest population. The other examined populations showed an increase in genetic diversity. Moreover, some rare alleles, not found in the native populations were gained after the founder event while other