crabgrass but was identified with more than 65% genetic similarity with isolates from rice. The standard mating type tester was as well branded to 4 separate lineages, H to L. The correlation between VCGs and clonal lineages revealed low genetic diversity among all the isolates and far relationship between isolates from rice and crabgrass, whereas the possibility of speciation.

P0406 – ePoster

Studies on B-chromosomes in conifers

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B-chromosomes are found in animals, musci, gymnosperm and angiosperm plants. At present about 30 species with B-chromosomes are known among conifers. The paper deals with the results of B-chromosome studies in representatives of Pinaceae family. Among investigated by author species B-chromosomes are found in two *Larix* (larch) species and nine *Picea* (spruce) species. For karyological investigations seeds of different coniferous species (Pinaceae family) from many provenances were used. The materials were prepared and analyzed according to generally accepted techniques for coniferous plants with some modifications. The germinating seeds were pretreated in 0.5% colchicine solution for 6-8 hours, fixed in 3:1 ethanol : acetic acid mixture and stained with acetohematoxylin. Root tip meristem cells were used for study, and slides were prepared using the improved squash technique. Species from the genera *Picea* and *Larix* are the stable diploids and contain 24 somatic or A-chromosomes (2n=24). On morphological type in *Picea* 8 pairs of A-chromosomes are long metacentrics and 4 pairs of A-chromosomes are short meta- or submetacentrics. Karyotypes of some species include B-chromosomes. In *P. schrenkiana, P. jezoensis, P. pungens, P.* x *fennica* and *P. breweriana* one B-chromosome occurs (2n=24+1B), in *P. koyamae* and *P. engelmannii* 1–2 (2n=24+1–2B), in *P. ajanensis* and *P. meyeri* 1–3 (2n=24+1–3B), in *P. obovata* 1–4 (2n=24+1–4B), in *P. glehnii* 1–5 B-chromosomes (2n=24+1–5B). It was the first study case occurrence of B-chromosomes in four species – *P. breweriana, P. pungens, P. koyamae* and *P. schrenkiana.* At present B-chromosomes are found in 19 *Picea* species. *Larix* karyotype includes 6 pairs of long metacentric chromosomes and 6 pairs of short submetacentric ones. B-chromosomes are found in two *Larix* species: *L. gmelinii* and *L. sibirica*. Occurrence of B-chromosome in *L. gmelinii* was the first study case for the genus *Larix*. Sizes of A-chromosomes *Picea* and *Larix* are from 9 to 15 μm. Length of B-chromosomes of these species composes 25–30 % from the A-chromosomes one (4–6 μm). On their morphology B-chromosomes of *Picea* species can be metacentric (B1 type) and submetacentric B2 type. In *P. schrenkiana, P. koyamae* and *P. breweriana* the first type of B-chromosomes occurs only. In *P. pungens* the second type of B-chromosomes occurs only. *P. obovata, P. ajanensis, Larix gmelinii*, *L. sibirica* have the both type of B-chromosomes. It is supposed that submetacentric B-chromosomes originated in the result of pericentric inversion of metacentric ones. Other variants of B-chromosomes were found in *P. glehnii*. In this species five morphological types of B-chromosomes were found: large metacentric, two short meta- and submetacentric, one small metacentric, and very small submetacentric. In the opinion of some authors presence of B-chromosomes can be connected with unfavourable ecological factors (Moir, Fox 1977; Teoh, Rees 1977; Jones, Rees 1982; Broka 1990; Muratova et al. 2001, 2002 and others). Effects of B-chromosomes can have adaptive character. The results obtained allow us to consider that this system is a general phenomenon and B-chromosomes are of importance for populations and species and possibly play a role for their adaptation.

P0407 – ePoster

Development and characterization of microsatellite markers on Pistachio (*Pistacia vera*)

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Pistacia vera L. (Anacardiaceae) is an economically important species as the main source of pistachio nuts. The application of genetic tools for the improvement of its commercial culture is crucial. In this sense, a linkage map based on molecular markers of this species will facilitate future breeding programs. The linkage maps are useful in important aspects such as sex-determination or marker-assisted selection for desirable traits issues (disease-resistance, growth rate, productivity…). The characterization of DNA markers is the first step towards the development of these maps. In this sense, we have constructed microsatellite-enriched libraries in pistachio by using the hybrid capture method. The libraries were made from genomic DNA samples and were enriched in di- and trinucleotides. Different libraries for males – Peter cultivar – and females – Kerman cultivar – were constructed to explore the possible association of these markers with the sex-determining loci. We also examined the utility of conserved microsatellite markers in other important *Pistacia* species (i.e. P. lentiscus or P. terebinthus). We believe that these data will contribute to a better knowledge of this group of species.

P0408 – ePoster

Characterization of repetitive sequences on Pistachio (*Pistacia vera*)

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The genus *Pistacia* L. (Anacardiaceae) includes around a dozen of species. Some of them have economical and ecological importance, highlighting the species *Pistacia vera* – the source of pistachio nuts – or *Pistacia*