Wild cherry (*Prunus avium* L.) micropropagation for plantation establishment

Szczygieł K. and Wojda T.

Forest Research Institute

Dept. of Genetics and Forest Tree Physiology

Braci Leśnej Street, No 3, Sękocin Stary, 05-090 Raszyn, Poland

k.szczygiel@ibles.waw.pl

The present studies were started in 2007, and they have been aimed at applying tissue culture method - organogenesis, to obtain the planting stock of selected genotypes of *P. avium*, for plantation establishment, as well as to conserve the best clones in clone archive. The current year 2-5 cm long shoots or shoots with developing buds from early spring, were collected as primary explants for clones regeneration. Also, the new cultures were obtained from leaves (secondary explants) excised from shoots proliferating *in vitro*. The explants were taken from 20 clones of 2 years'- old seed orchards. The sterilized plant material was transferred on the MS (Murashige and Skoog 1962) basal medium, supplemented with: 200 $mg \cdot l^{-1}$ glutamine, 200 $mg \cdot l^{-1}$ casein hydrolysate, 2 $mg \cdot l^{-1}$ BAP and 0.1 mg l^{-1} IBA, and 30 $g \cdot l^{-1}$ of sucrose. Multiplication of adventitious buds and shoots was performed in the same medium as above mentioned but supplied with lower (1 $mg \cdot l^{-1}$) or with the same (2 $mg \cdot l^{-1}$) BAP concentration. For shoot elongation the basal medium without growth hormones or supplied with 1$g \cdot l^{-1}$ of activated charcoal were used. The shoots of 1-2 cm long were rooted on MS medium with 100 $mg \cdot l^{-1}$ of glutamine, 100 $mg \cdot l^{-1}$ of casein hydrolysate, 2-3 $mg \cdot l^{-1}$ of IBA, 20 $g \cdot l^{-1}$ of sucrose. Adaptation of plants to growth and development under natural conditions took place in greenhouse conditions, in natural substrate (mixture of peat, vermiculite and perlit). Depending on explant, genotype clones revealed different ability of regeneration, and also they needed individual concentration of BAP in the basal medium for multiplication. Addition of 2 $mg \cdot l^{-1}$ of BAP to the MS medium was optimal for most of clones. Majority of clones rooted in the optimal concentration 3 $mg \cdot l^{-1}$ of IBA. The percentage of rooting ability was in the range of 40-90%. After 2 months of acclimatization, 712 seedlings were planted into nursery. After first vegetation season, the measurements of growth increment and observations of seedlings with high survival of 87.1% were made.