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Effects of Porcine Oviductal Fluid on In vitro Growth of Dendrobium mirbelianum

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Abstract : Porcine oviductal fluid (pOF) from oviduct, an unused organ from the slaughterhouse, was effectively used for biotechnology studies. The fluid components consisted of micro- and macro-nutrients, amino acids, carbon source and proteins that played important roles in animal cell and embryo development. This was our knowledge on investigating pOF as growth promoting substance in culture medium of an orchid, Dendrobium mirbelianum. Two-leaf shoots were cultured in liquid Vacin and Went (VW) medium as a standard medium supplemented with 2 g/L peptone (Pe) or 100 g/ L boiled-potato water (Po) alone or in combinations, and added with 0, 1, 3 or 5 ml/L pOF. All explants were cultured in a stationary condition for 8 weeks. It was found that medium added with 100 g/L Po and 1 ml/L pOF provided the best results (1.02 g fresh weight, 4.2 shoots, 0.53 cm shoot height, 4.4 protocorms, 11.0 leaves and 5.7 roots with 100% survival) when compared to other medium, but not statistically significant difference from medium added with 100 g/L Po (0.86 g fresh weight, 4.3 shoots, 0.51 cm shoot height, 4.6 protocorms, 12.4 leaves and 6.6 roots with 100% survival). However, VW medium supplemented with 1 or 3 ml/L pOF alone showed the higher percentage of survival (100%) than VW medium (86.67%). It was shown the potential role of pOF as an organic supplement for promoting growth of plants. Acknowledgements—The project was funded by a grant from Silpakorn University Research & Development Institute (SURDI) and Faculty of Science, Silpakorn University, Thailand.

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