ANALYSIS OF RABBITS FED ON WILD TYPE AND GENETIC MODIFIED POTATO TUBERS

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Manipulation of 14-3-3 protein content in potato plant resulted in significant changes in tuber size and yield. Clearly overexpression of 14-3-3 protein in a potato plant resulted in decrease of tuber size. Opposite effect in 14-3-3-antisens plants were detected.

We also compared carbohydrate contents, adenine nucleotide level and norepinephrine content in tubers and leaves of transgenic plants grown in greenhouse and in a field. We have found that, overexpression of 14-3-3 protein induce an increase in catecholamine and soluble sugars contents in leaves and a reduction in tubers starch content. The repression of 14-3-3 synthesis led to opposite effect. It is proposed that 14-3-3 protein affect carbohydrate metabolism in potato via regulation of catecholamine synthesis.

The transgenic potato tubers differing in soluble sugars to starch ratio and in carbohydrate content in tubers were used for rabbit feeding. During experiment the animals were weighed weekly. The increase in body weight correlated in soluble sugar content in potato tubers. After eight weeks row tubers feeding the rabbits were bled and the peripheral blood as well as organs were analysed. There were only slight changes in hemoglobin content and erythrocyte volume. Thus, there is no side negative effect on rabbit fed a transgenic potato.