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PAPER TITLE CAN AGRICULTURAL COUNTERMEASURES LEAD TO AN INCREASE IN POPULATION DOSE ?

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Practical application of Control Level (CL) distinguishing the pro-
duction as "pure" (contamination level below CL) and "dirty" (above
CL) requires a special analysis of strategies in the field of coun-
termeasures (CMs). It has been shown, that implementation of CM under
conditions of inhomogeniety of radioactive contamination (of areas,
products) can give non-trivial results, e.g., an increase in collec-
tive dose due to differential uses of pure and dirty produce. Based
on the analysis of contamination structure before and after CM, it
has been shown that, whereas radionuclide removal with dirty produce
is decreased, radionuclide content in pure production as a result of
CM can be increased, even in unchanging gross production level. Besi-
des, average contamination of pure produce after CM also may be in-
creased. It has been, that CMs such as radical amelioration of pastu-
res and ferrocyne treatment can result in 20-50 fold increase of
radionuclide content in pure milk. Therefore, in spite of a general
diminishing of radionuclide content in products obtained, population
dose can be increased after CM as a result of consumption of pure and
processed dirty production. CMs in agriculture give increased percen-
tage of pure production. In this case, it is only based on complex
analysis of radiological and economical parameters that effectiveness
of introducing the CM can be estimated (e.g., using cost-benefit ana-
lysis; the cost-effectiveness analysis is not applicable in this
case). A similar approach used for estimation of changes in the struc-
ture of contamination of products in the course of time (due to ra-
dioactive decay and self-cleaning) also results in a conclusion of
possible increase of collective dose during the subsequent years.