

VEGETAL EXTRACTIONS INDUCED, AGE DEPENDENT CHANGES IN CELL-MEDIATED NON-SPECIFIC IMMUNE REACTIVITY

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SUMMARY

The evaluation of adjuvant capacities of active principles from *Echinacea angustifolia*, a cultivated medicinal plant, renowned (Percival S.S., 2000; South E.H., Exon J.H., 2001) for its immune activity was done in comparison with that of a similar, alcoholic extraction of *Calendula officinalis*, a plant widespread in Romania, but less studied as an immune stimulant (Della Logia R. et al., 1994). A comparison between the effects of sc injected (0.5 ml/day/bird) alcoholic *Calendula officinalis* and *Echinacea angustifolia* extractions in immunologically immature (19 days old) and mature (47 days and 77 weeks old) chickens (n=7 bird/batch) on total leukocyte numbers and phagocytosis, showed that in 47 days old birds the total leukocyte numbers were lower than in 19 days old birds, in all corresponding batches. In young injected birds, both *Calendula* and *Echinacea* extractions were inhibiting on total leukocyte numbers, compared to the solvent control. Meanwhile, in older birds, *Calendula* was indifferent and *Echinacea* acted in a stimulating way.

Following the one week treatment with the extractions and antigen priming, there was an increase of spontaneous phagocytic activity ($p<0,001$). The *Calendula* extraction ensured an initial increase and a subsequent plateau of the phagocytosis. *Echinacea* induced a more intense stimulation than *Calendula*, but its effects were inhibiting compared to those obtained in control groups. In 19 days old *Calendula* treated chickens, the most active phagocytosis was observed after the *in vitro Echinacea* treatment.

The results obtained in hens indicated that the primary experimental antigen injection increased phagocytosis. The *Calendula* extraction injected *in vivo* highly stimulated the spontaneous phagocytosis. The *Echinacea* extraction stimulates the leukocytes in a delayed manner, the phagocytosis being more active compared to that induced by *Calendula*. Age-related, that is immunological maturity-related take up of active principles from plants was obvious.

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