

MAY 1973

Special considerations about handling of grassland areas on airfields.

(Lecture held by Dr. J. Hild, GAF)

Grassland is the most common type of vegetation on all airfields. Therefore the most bird species living on airfields have adapted their standard of life to this type with its total life (animals, birds and plants). The following bird species are living (=nesting, feeding, breeding) in these areas : starlings, lapwings, crows, gulls, sparrows, kawks, falcons and small singing birds. The special type of bird population in the grassland of the various airfields depends on the district of country, on precipitation, moisture of ground, composition of grassland and animal species living in soil as well as on the handling of grassland areas by mowing, cutting or spraying chemical substances.

Nearly 8 years observation and investigation had the following results.

- The more moist or wet the ground or the soil the larger the population of birds -
- The more intensive the handling of grassland by continuous mowing (without removal of mowed grass-material) the larger the population of birds -
- The more intensive the handling of grassland by fertilizing or dunging the larger the population of birds -
- The longer the growing grass and weed species the smaller the population of birds, but the greater the population of mice, possibly rabbits, too, and the greater the difficulties for cleaning grassland areas once the year -

These points led to the necessity to find out procedure for special handling of grassland areas regarding the investigation results. This handling had to consist of a so-called integrated grassland use, that means a combination between mowing, fertilizing, growing and spraying chemical substance regarding the special environmental conditions of each airfield f. i. fertility and moisture of soil, precipitation and temperature.

At low values of soil fertility fertilizing is necessary in order to get a dense grassland which is capable of bearing. The fertilizing should be done with minimum concentrations ; chemical substances prohibiting growth should not be used, the areas could be mowed 2 or 3 times the year depending, on precipitation and that not by total mowing but by cutting the tops of grass and weeds, so that a maximum length of grassblades can be held between 15 and 20 cm provided you have the corresponding mowing machines. In case

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ground animal population is high, use of insecticides once or twice the year is necessary in order to reduce population of small-size birds, too.

At medium values of soil fertility, fertilizing with minimum concentrations should be done every 2 or 3 years depending on precipitation. Chemical growth stopping substances should be used after beginning of vegetation period in concentration of 10-12 l per 800 l water per 1 ha and combined with weed destroying substances (15 l per ha). Spraying date depends on the state of vegetation and on weather. By using these substances speed of grass growing is stopped and weeds which serve as food for birds destroyed. The length of grass-blades will reach 20 cm in August, therefore only one mowing will be necessary if weather (precipitation) is not extreme; this mowing once ground animal population is high the a.m. substances can be mixed with insecticides. Using growth stopping substances it is favourable to set out this handling every 3 years for one year for recovery of the grassland.

At high values of soil fertility fertilizing should be done every 3 or 4 years. Chemical growth stopping substances should be used in concentrations of 14-16 L per 800 l water/ha and combined with weed destroying substances (15-16 l/ha). By the high soil fertility the stopping effect is not so clear and a grass-blade-length of about 20 cm may be reached in July. After mowing it could be successful to spray once again and to make the cleaning cutting in October. In case ground animal population is high the a.m. substances can be mixed with insecticides. Also on these soils it will be favourable to set out this handling every 4 years.

Summarized it can be noted that successful handling of grassland areas and using chemical substances depends on consideration of the following points :

1. A criticism of the necessities is only possible on the basis of an extensive ecological analysis regarding animal, vegetation state, climatic and soil conditions as well as appearance (form) of birds.
2. It is necessary to know exactly the composition of the grassland areas (all plant species) in their sociological behaviour and in their covering because the concentration of chemical substances depends on resistance of plant species against it..
3. A success in using chemicals on grassland can only be granted if at the spraying date in springtime
  - the vegetation is growing up since 2-3 weeks,
  - the weather is dry without precipitation,
  - the grassland is dew-moist,

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- the height of spraying is low over the grass-blades,
- the speed of the spraying car is not higher than 10-15 km/h,
- the soil is not swampy and not too wet,
- the spraying is made in an overlapping form.