USE OF PESTICIDES, CHEMICALS AND POISONS IN THE REGION OF RUSENSKI LOM NATURE PARK (LOMOVETE SPA)

CASE STUDY REPORT UNDER ACTION A3

LIFE+ PROJECT "THE RETURN OF THE NEOPHRON" LIFE10 NAT/BG/000152

Prepared by
THE BULGARIAN SOCIETY FOR THE PROTECTION OF BIRDS

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ABOUT THE PROJECT

This case study report was prepared under the frames of action A3 of the LIFE+ project "The Return of the Neophron" (LIFE10 NAT/BG/000152, www.LifeNeophron.eu), further referred as "the LIFE project" funded by the European Commission and co-funded by the "A. G. Leventis Foundation", and implemented by the Bulgarian Society for the Protection of Birds (BirdLife Bulgaria), the Hellenic Ornithological Society (BirdLife Greece), the World Wildlife Fund Greece and the Royal Society for the Protection of Birds.

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SUMMARY

The Egyptian vulture (Neophron percnopterus) population on the Balkan Peninsula is in a stage of a very steep decline, currently consisting of about 70 breeding pairs. The northern most on the Balkan) were breeding in the Rusenski Lom Nature Park (Lomovete Natura 2000 Special Protection Area). Some 10 years ago, there were about 8 pairs of Egyptian vultures breeding in the Park. In 2012 there were only two breeding pairs which have extinct till 2014 (in 2014 only a single female was present) because of loss of the male birds during the incubation period of 2012 and 2013. Obviously, a systematic threat exists in the area. It was previously known that there are problems with intentional and unintentional poisoning and misuses of agro-chemicals in the Park, but it was not clear to what extent, scale and probability of occurrence. In this regard, in the spring of 2014 a BSPB team visited the site to collect evidences and to evaluate the magnitude of the problem. Local stakeholders (livestock keepers, veterinarians and representatives of park) were interviewed and samples with treated seeds were collected for laboratory analysis.

The study revealed that the widespread improper use of treated seeds with plant protection, insecticides and unauthorized disposal of packaging of products for plant protection (contrary to the requirements of safety) on one hand, and the illegal poisoning on the other hand represents a very serious problem at local (and probably at national) level. This should be adequately assessed with appropriate conservation measures and better control from the relevant authorities: Bulgarian food safety agency, Ministry of Agriculture and Food and Ministry of environment and water. These practices are likely to be widespread throughout the country, and seem to be a significant treat to many species with declining populations, both common species and endangered species.

INTRODUCTION

The Egyptian vulture (Neophron percnopterus) population on the Balkan Peninsula is in a stage of a very steep decline. Currently on the Balkans the number of known breeding pairs is less than 70 (Velevski et al. 2015).

In Bulgaria, in 2014 there are only 24 breeding pairs left in the wild. The northern most pairs in Bulgaria (and on the Balkans) were breeding in the Rusenski Lom Nature Park (i.e. Lomovete Natura 2000 Special Protection Area- SPA). Some 10 years ago, there were about 8 pairs of Egyptian vultures breeding in the Park. In 2012, when the LIFE+ project started, only two pairs started breeding in the area, and in April one of the males disappeared during incubation. Even though, the nest was subject to nest guarding and supplementary feeding, the female abandoned the nest. In the spring of 2013 only one pair returned to breed in the area, and the same scenario repeated. Therefore, in 2014 there was no longer breeding Egyptian vultures in the Park (only a single female returned in 2014 and occupied the territory).

Obviously, a systematic threat exists in the area and causes the abandonment of breeding territories of the Egyptian vulture due to the loss of mature birds in the begining of the breeding season. It was previously known (Official letter from Bulgarian food safety agency to the Regional inspectorate for environment and water - Rousse regarding a case of a poisoned goshawk in the vicinity of Koshov village, 2011) that there are problems with intentional and unintentional poisoning and misuses of agro-chemicals in the Park, but it was not clear to what extent, scale and probability of occurrence.

In this regard, in the spring of 2014 the BSPB LIFE project team visited the site to collect evidences and to evaluate the magnitude of the problem.

The last Egyptian vulture near village of Koshov, 2014.

METHODS

Fieldwork

Period of the visit: 1-4.04.2014

Tasks: to identify the legal or illegal substances used for the needs of livestock and agricultural practices in the region of Rusenski Lom Nature Park.

We met with the main local stock breeders and keepers, local farmers and land owners who use in their practice such substances. It was also a good opportunity to get in contact with the local stakeholder from the village of Koshov (He is responsible for the artificial feeding of the vultures) as well as key representatives of the Rusenski Lom Nature Park. We also visited the area of villages of Ivanov, Koshov, Shtraklevo and Nisovo.

Samples for laboratory analysis

During the field trip 5 samples of different seeds has been collected and sent to a specialized laboratory for analysis (Oil - Control – Ltd, Ruse).

Rusenski Lom Nature Park (Lomovete SPA).

RESULTS

Legal use of chemicals

During the first day, we witnessed the main campaign for planting of the agricultural fields in the area that are managed by the larger land owners and land managers (big famers). Due to the large area, the seeding is performed at an earlier stage. The larger farmers are typically the ones that use treated seeds, and various types of pesticides - insecticides, herbicides, fungicides, fertilizers and other substances for plant protection in order to maximize yields. In this regard we saw just what we expected.

We collected samples from different threated seeds found on various places. By interviews with local and non-local agro experts (consulted on plant protection practices for the most commonly used agents for decontamination of corn and sunflower seeds before sowing them) we indirectly confirmed the use of the following chemicals:

1. Fungicide “Vitavaks” - purple in color, its active substances are Carboxin and Thiram used against the blight of wheat, barley and soil pathogens in maize and sunflower and root rot; second category of toxicity. This pesticide is toxic to fish. Drift or runoff from treated areas is hazardous to aquatic organisms in neighboring areas.

2. Fungicide “Aprotinin” - active ingredient Mefenoxam, for sunflower and mildew; second category of toxicity. Mefenoxam is of relatively low toxicity to birds, mammals and insects.

Insecticides are used subsequently after germination of seeds:

3. Insecticide “Dursban” - active ingredient Chlorpyrifos, used for the treat of the common wheat leech (by using airplane), corn borer (1-st. generation), plain corny Runner (locusts, weevil and other); second category of toxicity. Organophosphate pesticides are potent neurotoxins, which can cause long term, persisting neurologic and neurotoxic damage to animals and humans.

4. Insecticide “Reldan” with an active substance - Chlorpyrifos-methyl used against harmful wheat bug, Moroccan locust and others, Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

An important pest in the region of Rusenski Lom is the insect Gray corn weevil, which requires prior treatment of the seeds of sunflower and maize with insecticide, except fungicides.

We observed the so called “the soil sealing with herbicide”, treatment of blocks sown with sunflower treated with herbicide which is a common practice.

At many places different seeds were found treated with chemicals in the original bags thrown in the field:

- Sunflower seeds treated with purple color of Pioneer Overseas Corporation (“RPC”) of DUBON, American Production
- Treated corn seed from the company Syngenta, France, maize seeds were treated with

preparations: Fludioxonil and Mefenoxam (metalaxyl M), this means that the seeds are treated with fungicide.

The Gray corn weevil is a serious concern in the region of Rusenski Lom. The most effective way of dealing with the problem is the treatment of the seeds before sowing with insecticide. Under Regulation 485 /2013 preliminary seed treatment with insecticides Neonikotin is prohibited. Seeds of corn “Syngenta”, and possibly sunflower of “Pioneer” are treated with preparations against mildew and soil pathogens with fungicide.

Threated seeds collected during the fieldwork.

Threated seeds collected during the fieldwork.

Results from the laboratory analysis

The analyses provided the following information:

- Analyze for PCB (Poly Chlorinated Biphenyl) in the sowing seeds. The PCB is similar as a structure to the dioxin (polychlorinated biphenyls with dioxin-like toxicity). The PCB concentration was under the sensitivities of the used method. In Bulgarian legislation there is no provision for the content of polychlorinated biphenyls in chemicals used for the treatment of seeds for agricultural needs.

- Analyze for Organochloride pesticides: all the 5 samples of seeds contained organochloride pesticides in the range from 0, 08 to 0,073 mg/kg. EC directive 91/414 / EEC does not regulate standards for pesticides needed for treatment for decontamination of seeds.

- **Conclusions from the laboratory analysis:** There are no illegal chemicals or misuses of the concentration of the pesticides among the sampled seeds.

"ПЕТРОЛ - КОНТРОЛ - ЕООД" – гр.Русе
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ПРОТОКОЛ
ОТ ИЗПИТВАНЕ
№ 2239 / 06.10.2014год.

ИЗПИТВАТЕЛНА ЛАБОРАТОРИЯ ЗА ВОДИ, РАЗТВОРИТЕЛИ И НЕФТОПРОДУКТИ към "ПЕТРОЛ – КОНТРОЛ – ЕООД" – гр.Русе

1 Слънчогледово семе. Проба № 1.
(наименование на продукта-тип, марка, вид и др.)

2 Заявител на изпитването: "Българско дружество за защита на птиците" – София, ж.к. "Яворов",

Protocol of the laboratory analysis.

ILLEGAL USE OF CHEMICALS

The local agro experts mentioned the use in the agricultural practices of illegal insecticide for pretreating the seeds before sowing.

These are chemicals that are on the basis of ”Gaucho”. The “Gaucho” is a Bayer active substance imidacloprid which is insecticide against different types of weevils, including the Gray corn weevil. But the “Gaucho” is no longer used as the imidacloprid substance acts as an in-

sect neurotoxin and belongs to a class of chemicals called the neonicotinoids: ***Any use of the product for the treatment of seed corn and sunflower is forbidden after November 30, 2013 (Art. 2 of Regulation (EC) № 485/2013 of 24 May 2013).*** Currently "Gaucho" is imported illegally from Macedonia and Turkey and continues to be used in agriculture. The color of this product is also a cyclamate very similar in color and effect to carbofuran. The carbofuran is not included in the list of permitted pesticides also under order № 12-18 / 10.08.2007g of BFSA in toxicity category 1; it was used in the near past against weevil and wire worms.

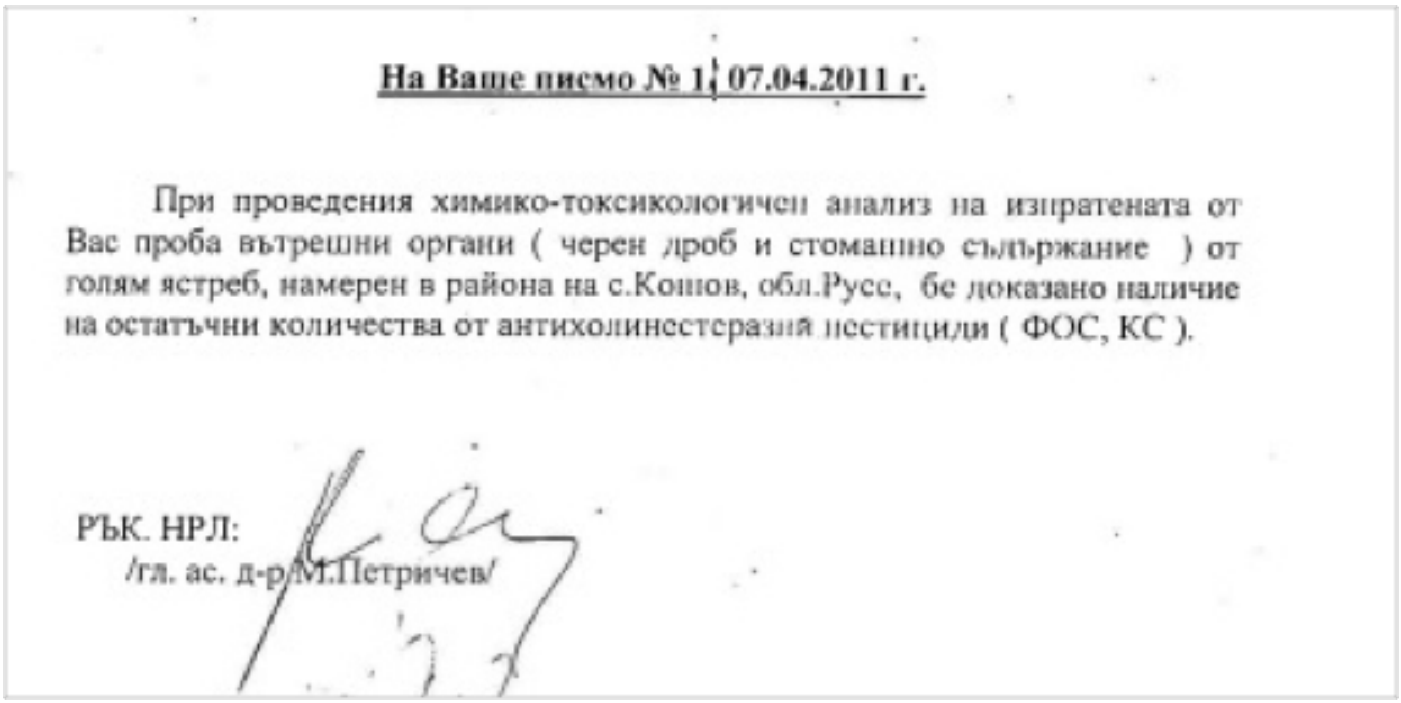
POISONING

We confirmed our concerns about the scale of the illegal poisoning of stray dogs, jackals, foxes and other small predators (martens and polecats) from various local people (shepherds, breeders and possibly other local farmers). These poisoning incidents are sporadic and occasional, but very dangerous because they can affect many species of non-targeted wildlife.

The poisoned wild animals are likely to die in the nature, they are not gathered and become a source of secondary poisoning as well. Poisons used by prior information (from various sources G. Georgiev, Rusenski Lom Nature Park, the municipal veterinarian from Ivanovo municipality) are **carbofuran** (red corn seeds), **lanat** and **antifreeze**.

Poisoning incidents in the area (during the near past):

- Poisoned red corn seed with carbofuran: 10 goats in 2013 near village of Pisanets
- 6-7 sheep poisoned near Koshov 5-6 years ago
- Also several sheep in near village Vyatovo 2 years ago
- Near village Pirgovo 7-8 years ago;
- In conversation with a shepherd in a pasture near village of Shtruklevo, he also confirmed that he had seen 10 bags of red seeds thrown away in the field.
- The municipality veterinarian in Ivanovo village confirmed that Ketofen 10% and Ketofen 0,2% are not used for veterinary practices in the area of Rusenski Lom.
- In a poisoning accident in 2011 in the region of Koshov shepherd dogs, jackals, Goshawk and few magpies were poisoned with a cocktail of pesticides. The poison was set by local pigeon keeper who had accidents with small wild predators attacking his pigeons (Application Protocol of Bulgarian Food Safety Agency from 2011).



На Ваше писмо № 1 07.04.2011 г.

При проведения химико-токсикологичен анализ на изпратената от Вас проба вътрешни органи (черен дроб и стомашно съдържание) от голям ястреб, намерен в района на с.Конов, обл.Русе, бе доказано наличие на остатъчни количества от антихолинестеразни пестициди (ФОС, КС).

РЪК. НРЛ:
/гл. ас. д-р М.Петричев/

Protocol of Bulgarian Food Safety Agency

One of the most dangerous incidents is related to the disposal of seeds treated with pesticides near settlements and rural dumps when no longer germination of the used seeds is optimal or their amount is much more than needed. There are at least few cases of poisoning of goats and sheeps in such places. In most of the cases these animals are disposed at the dump and are not buried although the veterinarians claim that this practice does not occur with livestock animals and pets because the specialized rendering unit of Shumen comes with a car twice a week or animals are buried. There are many wild animals likely to become victims of these unauthorized discarded seeds treated with poisons or pesticides that are dying in remote and inaccessible areas and become a source of secondary poisoning of birds and wild mammals.

Bad agro-environmental practices

The most serious and obvious systemic disorder that we found in the area is the misuses of different legal (and possibly illegal products) from farmers in the area. There are serious problems with the disposal of residues of poisonous treated seeds with preparations against mildew and soil pathogens (sunflower, corn) and possibly insecticides. After sowing or when the seeds become with reduced germination potential they are thrown away in to the fields or in illegal dumps along the roads or directly into the fields in a very inappropriate and dangerous way. The legal and illegal chemicals that might be used (for example carbofuran) has a very long life, and can be very dangerous for the animals that can eat the treated seeds. This is done in their original packaging (big bags, envelopes and bags) or directly to the various sites. In some of the fields and the adjacent roads we found scattered seeds and at some places dead insects (grasshoppers and crickets). We have pictures of good amount of crickets and beetles dead or dying among the treated seed. On some of the original packages and containers that we found it is clearly written that they are very dangerous for the environment and

can be e serious threat to animals. Their disposal in the field is absolutely forbidden: toxic to birds, mammals and insects! We found huge amount of these packages of substances and residues (other envelopes, bags and plastic packaging of fertilizers, herbicides and possibly other substances) disposed at different places along the fields and small forests, bushes or even directly into the fields. In some places (near Nisovo) we found an illegal dumps next to the main road near the fields where literally industrial quantities of plastic bags, nylon bags, bags, plastic bottles of various sizes and dedicated sacks with a capacity up to 500 kg. All these packages belong to different types of chemicals used in various agricultural practices, most of which fall into the category of toxic waste. There are remnants of seeds or active substances in most of the bags that we found and saw. In some of the places we found huge amount of spilled fertilizer (ammonium nitrate) and this probably happens with other substances. All this is completely at odds with the law and proper use of these substances.

Status of local birds

It is worth mentioning the decline in other bird species in the area, which according to the experts working in the Park were in a much higher numbers before year 2007 (e.g. Common Kestrel, Common Buzzard, Long-legged Buzzard, Lesser Spotted Eagle, etc.), or completely disappeared (e.g. Golden Eagle and Saker Falcon), or become endangered and locally extinct as breeders (Egyptian Vulture).

CONCLUSIONS

We can finally conclude that the widespread improper use of treated seeds with plant protection, insecticides and unauthorized disposal of packaging of products for plant protection (contrary to the requirements of safety) on one hand, and the illegal poisoning on the other hand represents a very serious problem at local (and probably at national) level. This should be adequately assessed with appropriate conservation measures and better control from the relevant authorities: Bulgarian food safety agency (BFSA), Ministry of Agriculture and Food (MAF) and Ministry of environment and water (MOEW). These practices are likely to be widespread throughout the country, and seem to be a significant treat to many species with declining populations, both common species (Hristov & Petkov 2013) and endangered species (Iankov 2007).

FUTURE WORK

(1) Planning of strategic work for the reduction and mitigation of the problems and (2) discussion of more possibilities such as:

- Collect additional evidences about the problem
- Enforce the communication and cooperation with various experts, NGOs and authorities regarding this agro-environmental problem.
- Development of practical guide for anti-poisoning
- To discuss the possibilities to establish some form of partnership with all the relevant authorities and NGO`s
- Planning of workshops and seminars
- Find effective ways of communicating the problems, particularly among users of plant protection products-farmers.
- Improve the national policy in the aspect of better and effective control of the use of chemicals in agricultural practices among the farmers.

European souslik (Spermophilus citellus)

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