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Selezione pubblica, per titoli e prova-colloquio, per l'assunzione, con contratto a tempo determinato, di n. 1 unità di personale con il profilo di Tecnologo – III livello professionale dell'Istituto Superiore di Sanità per far fronte alle esigenze previste dal progetto: "Pan European assessment, monitoring, and mitigation of chemical stressors on the health of wild pollinators - wildposh (Horizon-Cl6-2023-Biodiv-01)" nell'ambito dell'area progettuale Ambiente e Salute presso il Dipartimento Ambiente e Salute (durata del contratto: 24 mesi) – codice concorso: TD TEC DAMSA 2024 01

QUESITI RELATIVI AL COLLOQUIO DEL 3/12/2024

NUMERO SERIE 1

1. Il candidato descriva quali sistemi informativi *in silico* possono essere usati per identificazione delle sostanze potenzialmente tossiche.

2. Quali sono i principali strumenti di Microsoft Office?

3. Pollinator research is at the forefront in terms of understanding the complex interplay between biodiversity, ecosystem functioning, socioeconomic and political drivers, environmental pressures, and impacts on human society. This research has tremendous importance to safeguard both pollinators and the values they generate but can also serve to guide public and private initiatives to reverse biodiversity decline in general. Pesticides are now an integral feature of modern agriculture, controlling pests and disease in crops and domesticated animals. However, when pesticides are overused, or have adverse effects by depressing the abundance of beneficial organisms (e.g. pollinators, pest predators), their use can reduce farm profitability. The potential effect of pesticides on wild insect pollinators is a high profile, yet poorly resolved, case, as insects (including bees) provide the essential ecosystem service of pollination but are at risk around the globe.

NUMERO SERIE 2

1. Il candidato descriva le strategie principali da adattare per gestire in modo migliore i dati sperimentali raccolti, per esempio per rendere operativi i principi di European Open Research Data Pilot.

2.Quali sono i principi della sicurezza informatica da adottare durante il lavoro?

3. For example, at a population scale, correlational data associate neonicotinoid pesticides with declines in abundance and range of wild bees. Furthermore, the effects of pesticides can be modified by interactions with other pesticides. However, there is a severe lack of both real-world

exposure risk data for pesticides and wild pollinators, and insights into how such exposure translates into effects in the field. In addition, current knowledge is largely limited to the honeybees, with little understanding the degree to which solitary bee pollinators (~95% of all bee species) are affected by these hazards, and how this impact is related to pollinator traits (i.e. morphology, ecology, physiology, genetics), spatial and temporal distribution. To address these issues, based on our expertise developed in monitoring tools, analytical tools, eco-toxicokinetic, proteomics, modelling and risk assessment, we propose here a project focussing on wild pollinators.

NUMERO SERIE 3

1.Il candidato esponga le sue idee su come progettare ed organizzare un database efficace per raccolta dei dati tossicologici.

2.Quale strumento di Microsoft Office è più adatto per la gestione di un database?

3.Chemicals are spreading through entire ecosystems and travel up agricultural food chains, but we need to understand the routes of chemical exposure of wild pollinators in field realistic conditions through different matrices (i.e. soil, water and different parts of plants). New protocols need to be developed to tackle the sampling and analytical challenges. As wild insect pollinators are very diverse (> 12,000 species recorded in Europe), there is an important challenge in selecting and testing a representative set of species and their associated ecological traits. We need to describe mechanistic links between these exposure routes and the health of wild pollinators. We do not know which species have a higher risk of exposure; there is a technical challenge to monitor and assess the risk of exposure of wild animals in general and wild pollinators in particular.

NUMERO SERIE 4

1.Il candidato descriva usando 1-2 esempi come vengono raccolte e valutate informazioni sulle sostanze chimiche prima di autorizzare il loro uso sul mercato europeo.

2. Quali strumenti di Microsoft Office possono essere usati per l'analisi dei dati? 3.

3.Currently there is a moratorium in the European Community on some uses of three neonicotinoids and, in a recent call, European commission aims to reduce pesticide use in every EU country by a 50% reduction in the use and risk of chemical pesticides and a 50% reduction in the use of more hazardous pesticides. In the case of regulation modifications at EU or national levels, the project's network will be able to capture these changes as the coverage of the European biogeographical regions is sufficiently extended and complete to allow for the comparison of exposed/non exposed populations. The project will ensure an active dialogue with policy and regulatory experts to anticipate and actively respond to a changing policy environment. Therefore, any changes in analytical/test standards will become quickly known to the consortium. If new/modified standards are put in force, the partners will rapidly include them as part of the protocols tested.

NUMERO SERIE 5

1.Il candidato esponga le sue idee su potenziale uso di Intelligenza Artificiale per individuare i rischi per ambiente delle sostanze chimiche. Quali sarebbero gli ostacoli principali per usare tali tecnologie.
2.Quali sono gli strumenti per pianificare e gestire una teleconferenza?
3. The Data Management Plan will be set in place following the FAIR data principles: Findable, Accessible, Interoperable, Reusable. The project will produce a wide array of data that will be generated through in vitro, in vivo, in silico methods via laboratory, semi-field, field, and modelling approaches. We will also use existing data from published peer-reviewed publications and open-access databases. Data will be stored throughout the collecting process to permit an anticipated timeline. We will pursue the distribution of the tools for risk assessment in open-source tools under licenses that follow Open-Source Initiative criteria. Interoperability of research outputs will follow format and vocabulary standards already set by the existing EU platforms. All partners will have one reference person for data management and quality assurance. The project will produce within the first six months a detailed data management plan setting out project output requirements.

NUMERO SERIE 6

1.Il candidato esponga le sue idee su come accertare le qualità dei dati sperimentali raccolti dalla letteratura scientifica.
2.Come possono essere gestite e catalogate le referenze bibliografiche usando gli strumenti informatici?
3. The project will fill critical knowledge gaps on sensitive species demonstrated by publication of research results in the peer reviewed scientific journals. Better knowledge on the sensitive species will help to define evidence-based conservation strategy. We will evaluate the quality of our outcome based on the development of better practices of pesticide use. The project will generate novel assessment tools, maps and models to advance our understanding on the environmental fate of pesticides, including new chemicals of emerging concern. For example, we will determine at landscape level the distribution of the new chemical in different matrices (i.e. pollen, nectar, soil, water). The project will compile datasets regarding pesticides distribution at continental level and their toxicity and European maps of risks for pollinators. It will give evidence-based arguments to policy makers, associations, citizen to motivate healthier practices regarding pesticide use.

NUMERO SERIE 7

1.Il candidato esponga le sue idee sullo sviluppo dei sistemi informativi capaci di evidenziare le proprietà tossicologiche delle sostanze partendo dai dati sperimentali disponibili?

2.Quali sono gli strumenti informatici da utilizzare per la condivisione dei file e per la miglior collaborazione su un report scientifico.

3. Pesticides are one of the main threats to pollinator decline, the project will help to understand the mechanisms of population trends of wild pollinators but also the drivers behind the threats and how to respond to the driver. We believe that the generated evidence will positively influence public and farmers. People will better understand the potential negative impact of the spread of pesticides. Consequently, policy makers will adapt the current policy toward a sustainable use of pesticide: more efficient, better targeted and protection of the sensitive species. The project will therefore help to understand wider questions on drivers of biodiversity decline than the strict question on pollinator conservation. We will further demonstrate how interventions to improve pollinator health can be integrated into the management of agricultural landscapes, such as links to specific United Nations Sustainable Development Goals