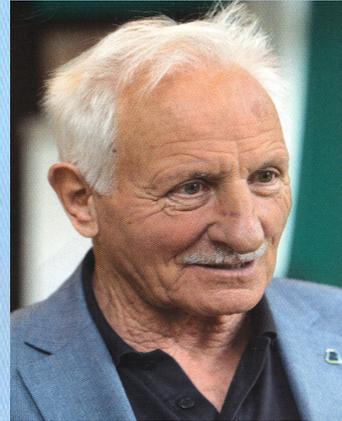


SV REVIJA



PROFESOR DOKTOR WOLF A. KAFKA JE PAVEDAL, DA JE MOGOČE ZAČETI PSA TRENIRATI V ISKANJU KONTAMINIRANIH VZORCEV Z METODO UČENJA S SOKSOM ŽE PO TREH DNEH.

SOKKS training aids now also in the Slovenian Army
pp 22 ff



IZURJENI ZA ZAHTEVNE NALOGE



PRESENTING AID FOR TRAINING

First training?
APPLY SOKKS-Original

On April 11, the veterinarian unit of the Slovene Army organized a presentation of a reputable German expert, Prof Dr. Wolf A. Kafka, on the detection of explosives and illicit drugs and the training of official dogs in Kočevska Reka. The lecture emphasized the presentation of an anatomy of the dog's nose and the perception of smells and processes that take place in the dog's brain. Twenty years ago, the aforementioned knowledge contributed to the development of innovative training aids for the training of dogs, called SOKKS, which Professor Kafka rode with his colleagues. In addition to members of the Slovene Army lectures and practical demonstration of the use of SOKKS were also attended by customs officers, police officers, police officers, representatives of the Protection and Rescue Department of the Republic of Slovenia and other participants in the profession involved in the training of official dogs.

Text: Jerneja Grmadnik Photo: Bruno Toič



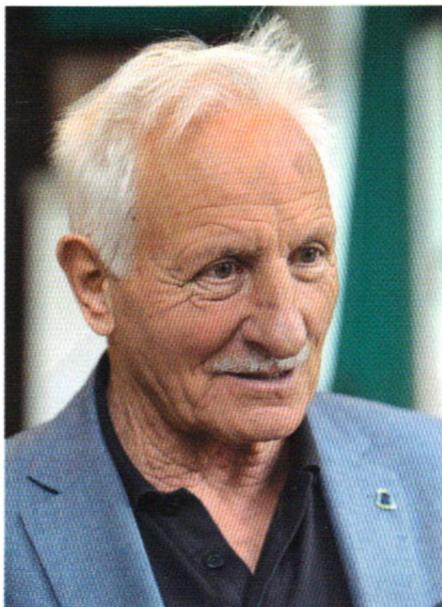
PROFESSOR DOKTOR
WOLF A. KAFKA DR WITH
PINCETO SOKKS TUBE
FROM ORIGINAL BOTTLES

Professor Dr. Kafka was already excited about scent research early, because from his molecular axis, he completed his doctorate at Ludwig-Maximilian-University in Munich, and since 1989 he has published numerous international publications on measurement, recognition and use of odors and Neurophysics. Being a member of the New York Academy of Sciences, the Beijing University and the American Association for the Advancement of Knowledge, he used his physical knowledge of the smell for the development of dog training tools after witnessing a tragic event. At the end of the 1990s the previous century

one of his colleagues of the Max Planck's company was lost during his research in the alps. Despite of the extensive campaign of the Bavarian police cooperated with tracer dogs they did not find his friend. Professor Kafka began to think about how to better train dogs for searching people, objects and substances. Various methods for the effective detection of substances were studied with colleagues, and on the basis of in-depth investigations, the aforementioned SOKKS were created. These are externally seen as small white filters, and in their special system, the management of different types of explosives, prohibited drugs or other

substances is covered.

The SOKKS training aids are stored in special bottles. They contain very small quantities, in nanogram range, the right substance, for example narcotics or explosives, which does not pose a risk for humans, animals and the environment in their use. Since operative detector dogs are commonly trained with real substances, such as explosives, tobacco, blood, arsons, drugs, and the like, whose use is risky and therefore regulated by strict legal constraints, the application of SOKKS training aids thus releases from such barriers.



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An additional advantage of juices is that they contain a kind of mixture of all possible types of explosives or drugs, which reduces learning time, as dogs are only studying for a particular substance at a time.

EXCELLENT VOHAL FEATURES OF SOKKS

It's no coincidence that dogs are used to identify different substances, objects or missing persons, Professor Kafka explained. They have exceptional scavenging abilities, which are still difficult to understand and analyze, but for a long time it will not be possible to replace them with any machine or automated way of recognizing odor. Dr. Kafka mentioned as an interesting fact that a liter of pheromones could be melted and mixed in the Lake of Lake Garda, and then only a liter of water was captured, while the dogs would recognize the smell. Such remarkable perfunctory skills allow them to reach the olfactory mucosa, where



there are scent receptors. The surface of the mucosa is about 40 times greater than that of a human. In addition, dogs can also distinguish greatly from the scents, perceive them extremely quickly, per minute, and create the smell a kind of three-dimensional image to make it easier to distinguish it. Professor Kafka emphasized, and in the continuation of the prospect, explained some of the fascinating properties of scents. He explained that the substance is emitting a scent due to volatile particles in its composition. Their evaporation depends on the air pressure, on the surface of the substance, etc. Despite the example of evaporation evaporation, however, it can not be said that the scent is doubled or consumed, therefore it does not depend on the amount of substance. He explained that the scent is not evenly distributed, as it takes a stream in the air. The source of the smell is where the time - variation of concentration of the particles is the smallest and the advantage of the dogs is the ability to trace the odor trail. With various anatomical images, the professor showed how the nerve impulses from the dog's nose to the brain are being transmitted and how they are formed before the settings of a certain odor. "The smell can not be interpreted by its chemical composition, but we can say that it can only be created in the brain and not at all earlier" explained the professor. The dog has thus to be trained with real materials rather than imitations. First, the dog recognizes the smell, then searches for the source of its origin. Juice must first be offered from the original bottle. Once the device is removed from the bottle, it is contaminated with other leads, so it should be placed in the "used" typed bottle where the sophoses are already used. The dog learns to trace the smell for which it has been

INSTRUTOR ŠTÁBNÍ VODNÍKANTOON KRKOVIČ EXPRESSED THAT THE SOKKS TUBI ARE NOT DANGEROUS FOR USE, WHICH MAY BE POWERFUL IN THE APPLICATION OF SPECIFIC EXPLOSIVES WHICH HAVE BEEN ENHANCED.

practiced, even when it is already interrupted by other smells. The dog has to be rewarded as soon as the original smell enters, and later, when it is already trained, it can also wait. Professor also warned that the waste SOKKS tubes should be properly disposed of in the waste bottle and discarded. Some smells can be trapped in individual types of toxins, from mobile phones, which comes to law-abiding policemen who, with detector dogs, check shipments in prisons, to the smell of stenas searched by dogs in otels. "We can produce SOKKS with all the materials that have volatile particles," Wolf Kafka stressed, adding that they had to reject strings that wanted to squeeze with asbestos-guiding, since this is not a suitable composition. SOKKS tubes for the training are applied throughout Europe and elsewhere around the world. They are used in the Austrian army and the police, as well as the French, Italians, Swiss customs officers, the air services in Paraguay, Ecuador and many more.

EFFICIENCY RECOGNIZED ALSO IN SLOVENSKÍ VOJSKI

In the Slovenian Armed Forces, some special tasks, including the detection of explosives and preventive drugs, are used by military dogs trained in the Breeding Center and the training of military dogs. "We met with the method of soksov in the Austrian army, but now we are also experiencing it. We find that it is effective," said Anton Krkovič, the instructor for breeding and training of dogs Štábní vodník, adding that SOKKS were tested on a Belgian shepherd and a mixture with a terrier that is not a military official dog. "The advantage of using socks is that you do not work with the right eccentricity. Namely, when it is created once, the dog contaminates the space, and the dog returns to the source of the smell even longer, even though there is no longer an exfoliant. In addition, their use is safer and learning faster, as the dog is training at one time for the detection of several explosives at one time, which are in several types of SOKKS. Later, it is necessary to work with individual explosives," explained the instructor, who showed how learning is taking place. When a dog approaches a snack of soksu, it is necessary to confirm his behavior. This should be done with praise bravo or with a specific device, and then reward it with a treat. This is a sign for a dog that he did something right. "At this initial stage I use a device or a clicker. It is important to confirm the behavior, as soon as the dog catches the SOKKS, because I am too slow in word. The dog learns through the game. When you remember the smell of the saxophone, you can deal with real punishment as well as reminder. We use the Slovenské Army to indicate the SOKKS training aids explained the štábní KRKOVIČ. In the Slo vensk military, the first results of the use of the soks are satisfied and we are also planning to continue using this learning method.

Veterinarska enota Slovenske vojske je 11. aprila v Kočevski Reki organizirala predavanje uglednega nemškega strokovnjaka profesorja doktorja Wolfa A. Kafke o detekciji eksplozivov in prepovednih drog ter usposabljanju službenih psov. Na predavanju so bili poudarjeni predstavitelji anatomije pasjega nosu in zaznavanje vonjav ter procesov, ki potekajo v pasjih možgani. Omenjeno znanje je pred dvajsetimi leti prispevalo k razvoju inovativnih učnih pripomočkov za šolanje psov, imenovanih soksi, ki jih je skupaj s sodelavci razvil profesor Kafka. Predavanja in praktičnega prikaza uporabe soksov so se poleg pripadnikov Slovenske vojske udeležili še cariniki, policisti, pravosodni policisti, predstavniki Uprave Republike Slovenije za zaščito in reševanje ter drugi udeleženci iz stroke, ki se ukvarjajo s šolanjem službenih psov.

Besedilo: Jerneja Grmadnik
Foto: Bruno Toič

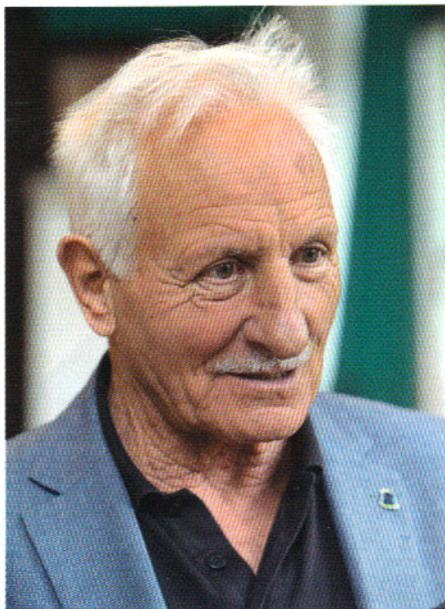


PROFESOR DOKTOR
WOLF A. KAFKA DRŽI
S PINCETO SOKS,
KI GA JE POTEGNIL
IZ ORIGINALNE
STEKLENICE.

Profesor dr. Kafka se je že zgodaj navdušil nad raziskovanjem vonja, saj je iz njegove molekularne osnove opravil doktorat na univerzi Ludwiga Maximiliana v Münchnu in od leta 1989 objavil številne mednarodne publikacije o merjenju, prepoznavanju ter uporabi vonjav. Nevrofizik, ki je član newyorške akademije znanosti, pekinške univerze in ameriškega združenja za napredek znanosti, je svoje fizikalno znanje o vonju za razvoj pripomočkov za šolanje psov uporabil potem, ko je bil priča tragičnemu dogodku. Konec 90. let prejšnjega stoletja se je v nemških Alpah med terenskim

raziskovanjem izgubil njegov sodelavec iz Družbe Maxa Plancka. Kljub obširni iskalni akciji, v kateri je s sledilnimi psi sodelovala bavarska policija, prijatelja niso našli. Profesor Kafka je začel razmišljati, kako še bolje izšolati pse za iskanje ljudi, predmetov in snovi. S sodelavci so preučevali različne načine za učinkovito detekcijo snovi in na podlagi poglobljenih raziskav ustvarili že omenjene sokse. Ti so navzven videti kot majhni beli filtri, v njihovem posebnem sistemu pa so zajete vonjave različnih vrst eksplozivov, prepovedanih drog ali drugih snovi. Za njihovo detekcijo se šolajo službeni psi. Prednost

soksov, ki so shranjeni v posebnih neprepustnih steklenicah, je predvsem ta, da vsebujejo zelo majhne količine, le nanogram, pravih snovi, na primer narkotikov ali eksplozivov, kar ne predstavlja tveganja za ljudi, živali in okolje pri njihovi uporabi. Operativnega psa za detekcijo namreč ni mogoče izšolati, ne da bi pri tem inštruktorji uporabljali snovi, ki so predmet prepoznave, na primer eksplozive, tobak, kri, pogorišča, droge in podobno. Uporaba tveganih sredstev pa je ne samo nevarna, temveč tudi podrejena strogim varnostnim in zakonskim omejitvam. Dodatna prednost soksov je tudi, da je v njih zajeta



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nekakšna zmes vseh mogočih vrst eksplozivov ali drog, kar skrajša čas učenja, saj se sicer psi šolajo samo za posamezno snov naenkrat.

IZJEMNE VOHALNE SPOSOBNOSTI PSOV

Ni naključje, da se za prepoznavo različnih snovi, predmetov ali pogrešanih oseb uporabljajo prav psi, je pojasnil profesor Kafka. Ti imajo izjemne vohalne sposobnosti, ki jih še zmeraj težko razumemo in analiziramo, še dolgo pa jih ne bo mogoče nadomestiti s kakšnim strojnim oziroma avtomatiziranim načinom prepoznavanja vonja. Dr. Kafka je kot zanimivost omenil, da bi lahko v Gardsko jezero zlili in pomešali liter feromonov, zajeli nato le mililiter vode, psi pa bi prepoznali vonj. Tako izjemne vohalne sposobnosti jim omogoča predel v smrčku, strokovno imenovan *olfactory mucosa*, kjer so receptorji za vonj, katerih površina je 40-krat večja kot pri človeku. Psi lahko poleg tega izvrstno ločujejo vonjave, jih izjemno hitro, v milisekundi, zaznajo, o vonju pa si ustvarjajo

nekakšno tridimenzionalno sliko, da ga lažje razločujejo. Psi so tudi učljivi in vdljivi, je poudaril profesor Kafka in v nadaljevanju predavanja pojasnil še nekaj fizikalnih lastnosti vonjav. Razložil je, da snov oddaja vonj zaradi volatilnih delcev v svoji sestavi. Njihovo izhlapevanje je odvisno od zračnega pritiska, na kakšni površini je snov itn. Kljub na primer povečanju izhlapevanja pa ne moremo preprosto reči, da se vonj podvoji ali potroji, torej ni odvisen od količine snovi. Prav tako ne drži, da je vonj enakomerno razporejen, saj zavzame v zraku neki tok. Izvor vonja je tam, kjer je koncentracija volatilnih delcev v nekem trenutku najmanjša in prednost psov je prav zmožnost sledenja temu vonju. Profesor je z različnimi anatomskimi slikami pokazal, kako se prenašajo živčni impulzi iz pasjega nosu v možgane in kako se tam oblikujejo predstave določenega vonja. »Vonja ne moremo razlagati z njegovo kemično sestavo, rečemo pa lahko, da se ustvari šele v možganih in nikakor ne prej,« je pojasnil profesor. Pomembno je, da se pes pri šolanju



INŠTRUKTOR ŠTABNI VODNIK ANTON KRKOVIČ JE POJASNIL, DA SOKSI NISO NEVARNI ZA UPORABO, MEDTEM KO JE TREBA BITI PRI UPORABI DOLOČENIH EKSPLOZIVOV ZELO PAZLJIV.

za detekcijo vonja uči s pravimi snovmi, ne pa z imitacijami. Najprej pes prepozna vonj, nato išče vir njegovega izvora. Sokse je treba psu najprej ponuditi iz originalne steklenice. Ko se pripomoček vzame iz steklenice, se ta kontaminira še z drugimi vonjavami, zato ga je treba dati v drugo steklenico, kjer so že uporabljeni soksi. Pes se nauči izslediti vonj, za katerega je bil treniran, tudi kadar je ta že prepojen z drugimi vonjavami. Psa je treba nagraditi takoj, ko povoha originalen vonj, pozneje, ko je že usposobljen, pa se lahko tudi počaka. Profesor je še opozoril, da je treba uporabljene sokse pravilno odložiti v steklenico za odpadke in jih zavreči. V posamezne vrste soksov se lahko ujamejo kateri koli vonji, od mobilnih telefonov, kar pride prav pravosodnim policistom, ki s šolanimi psi pregledujejo pošiljke v zaporih, do vonja stenik, ki jih psi iščejo v hotelih. »Izdelamo lahko sokse z vsemi snovmi, ki imajo volatilne delce,« je še poudaril Wolf Kafka in kot zanimivost povedal, da so morali zavrniti stranke, ki so želele sokse z vonjem azbesta, saj ta ni primerne sestave. Sokse pri usposabljanju službenih psov sicer uporabljajo po Evropi in drugod po svetu. Uporabljajo jih v avstrijski vojski in policiji, prav tako Francozi, Italijani, švicarski cariniki, vladne službe v Paragvaju, Ekvadorju in še marsikje.

UČINKOVITOST PREPOZNALI TUDI V SLOVENSKI VOJSKI

V Slovenski vojski se za nekatere posebne naloge, tudi detekcijo eksplozivov in prepovednih drog, uporabljajo vojaški psi, ki jih šolajo v Centru za vzrejo ter šolanje vojaških psov. »Z metodo soksov smo se seznanili pri avstrijski vojski, zdaj pa jo preizkušamo tudi mi. Ugotavljamo, da je učinkovita,« je povedal inštruktor za vzrejo in šolanje psov štabni vodnik Anton Krkovič in dodal, da so sokse preizkusili na belgijskem ovčarju ter mešanču s terierjem, ki sicer ni vojaški službeni pes. »Prednost uporabe soksov je, da ne delaš s pravim eksplozivom. Ta namreč, ko ga enkrat nastavimo psu, prostor kontaminira, pes pa se še dlje časa vrača k izvoru vonja, čeprav eksploziva tam več ni. Poleg tega je njihova uporaba varnejša, učenje pa hitrejše, saj se pes naenkrat usposablja za detekcijo več eksplozivov naenkrat, ki jih je v soksih več vrst. Pozneje je treba delati še s posameznimi eksplozivi,« je pojasnil inštruktor, ki je pokazal, kako poteka učenje. Ko pes približa smrček soksu, je treba potrditi njegovo vedenje. To je treba narediti s pohvalo *bravo* ali z določeno napravo, potem pa ga nagraditi s priboljškom. To je za psa znak, da je nekaj naredil pravilno. »V tej začetni fazi uporabljam napravo oziroma *kliker*. Pomembno je, da potrdim vedenje, čim pes povoha soksa, saj sem z besedo prepočasen. Pes se uči skozi igro. Ko si zapomni vonj soksa, se lahko spoprime z resničnim iskanjem pa tudi nakazovanjem. V Slovenski vojski uporabljamo za nakazovanje ukaz *sedi*,« je še pojasnil štabni vodnik. V Slovenski vojski so s prvimi rezultati uporabe soksov zadovoljni, zato načrtujejo tudi nadaljnjo uporabo te učne metode. ■