

**THE BILL BLACKWOOD  
LAW ENFORCEMENT MANAGEMENT INSTITUTE OF TEXAS**

**Use of Oleoresin Capsicum (Pepper) Spray  
by the Calhoun County Sheriff's Office**

**A Policy Research Project  
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**by  
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## TABLE OF CONTENTS

Section	Page
Abstract	
Introduction	1
Historical, Legal and Theoretical	2
Review of Literature or Practice	5
Discussion of Relevant Issues	9
Conclusion/Recommendation	13
Bibliography	15

## **ABSTRACT**

The Calhoun County Sheriff's Department does not have a policy on the use of oleoresin capsicum (OC spray) , or as it is sometimes called "pepper spray". The Sheriff of Calhoun County has expressed an interest in OC spray and requested that I do some research on it. The Sheriff is wanting to know what effect OC spray would have on violent suspects and if there are long term health hazards.

The purpose of this research paper is to determine if OC spray can be used as a safe, effective intermediate use of force option for the deputies of Calhoun County. Calhoun County encompasses a large area, and many times deputies are alone to confront violent or possibly violent suspects. If OC spray is adopted by the Calhoun County Sheriff's Department, a decision will need to be made as to where on the use of force continuum it would need to be added.

A review of material available on OC spray will be done to see what information is available. A survey from different police agencies in the state will be conducted to see how other departments are using OC spray.

The conclusion of this research paper indicates that OC spray can and is being used as a safe and effective tool by other police agencies around the state and that it should be adopted by the Calhoun County Sheriff's Department. I would also recommend that the use of force continuum be expanded and that OC spray be added before any physical contact. In the future, once OC spray is added, it could possibly save the deputy or the suspect from injuries. The training for the use of OC spray is a very important

factory of OC spray and all deputies should be required to attend such training before carrying OC spray.

## **Introduction**

The purpose of this research paper is to determine if oleoresin capsicum "OC" spray, sometimes referred to as "Pepper Spray", could feasibly be used as a safe, effective intermediate use of force for the Calhoun County Sheriff's Department. There currently exist a large area on the use of force continuum, between verbal command and physical contact. In the past, the Calhoun County Sheriff's Department had to go from a verbal command situation, right into a physical contact situation.

In the event that a recommendation OC spray is adopted as a use of force, it would then be necessary research and implement a new policy and/ or a change in current policy and procedure. A further step would be needed to address training requirements so that policy and/or changes to policy could be made.

Currently, Calhoun County Deputies are authorized to use the ASP tactical baton as a non-lethal weapon option. In the past the deputies had to choose empty hand control technique or the impact weapon to control violent or possibly violent suspects. The end results in a situation like this could result in unnecessary injury to the deputy or the suspect, depending on the choice.

This research paper will look at the history of oleoresin capsicum. This research paper will examine what effects oleoresin capsicum spray had on suspects who were violent or emotionally unstable. The paper will look at the health hazards of the people

who have been sprayed by oleoresin capsicum and where on the use of force continuum oleoresin capsicum needs to be added.

The intended audience of the research paper will be the Sheriff of Calhoun County. The Sheriff will then use the research paper to assist him in making an intelligent and tactical decision on the use of oleoresin capsicum spray and where to add it on the use of force continuum.

The source of information for the research of this paper could include, but not be limited to: law enforcement journals such as International Chiefs of Police, Crime Control Digest, other sources include the FBI Law Enforcement Bulletin, Department of Justice National Institute of Corrections, R.E.B. Security Training, Inc., manufactures literature and model policies.

The intended outcome of this research paper is to assist the Sheriff of Calhoun County in implementing a viable policy for the use of oleoresin capsicum spray by the deputies of Calhoun County as an alternative to the ASP tactical baton. This policy would also outline any and all training questions.

### **Historical, Legal and Theoretical Context**

The use of chemical/inflammatory agents has been going on for hundreds of years. This ancient concept was first used by the Chinese Armies in 2300 BC They burned red pepper in hot oil producing an irritating and suffocating smoke. After opposing armies were affected and started to disperse, Chinese Armies would attack. Wind direction and velocity had to be favorable.

The Japanese adopted stinkpots from the Chinese for massive frontal assaults. Samurai warriors carried finely ground pepper wrapped in rice paper containers. The Samurai warriors then threw the containers into the face of his opponent, temporarily blinding him (Gasaway p.2).

The use of some type of pepper to be used as a weapon is not a new idea. Oleoresin capsicum resin (derived from peppers) is believed to have been first developed for use as an irritant gas by the US military in the 1930's. Cayenne pepper has been used for years in many foodstuff, pharmaceutical products, and ointments, such as "HEET"> Oleoresin capsicum was first introduced in an aerosol form to law enforcement in approximately 1973. During this time, a company marketed a flashlight named the "Nebulizer", which contained a built-in oleoresin capsicum aerosol. In 1976, Luckey Police Products purchased the right to the "Nebulizer", and began distributing a 1% oleoresin capsicum aerosol named "CAPSTUN". This type of product received minimal acceptance in law enforcement community, and did not become popular until the late 1980's The increased use was prompted by the release of a three-year FBI study in 1989, which recommended oleoresin capsicum as an intermediate weapon (Gasaway p 3-4).

During the period, July 1987 to May 1989, the Firearms training Unit of the FBI Academy (FTU), conducted numerous testing using oleoresin capsicum. 828 individuals were sprayed with individual protective devices (IPD), containing 1 % to 5% solution of oleoresin capsicum. Several different positions and duration of sprays were used. None of the individuals tested experienced any long-term effects from the oleoresin capsicum. Two research chemists assigned to the FBI Forensic Science Research and Training Center and an analytical chemist who was a member of the Humane Investigation

Committee were consulted regarding possible long-term health risks, which might be associated with the use of oleoresin capsicum. These chemists advised that since oleoresin capsicum was deprived from the cayenne pepper plant, which is used in foodstuffs and pharmaceutical products, they could not foresee any long-term health risks associated with the use of oleoresin capsicum as a chemical agent.

The use of oleoresin capsicum would fall outside of many governmental regulatory guidelines that would be applicable to man-made chemicals (FBI, Chemical Agent Research: Oleoresin Capsicum).

Oleoresin capsicum or pepper spray has been used in the past by campers to ward off bear attacks in the woods. The product was tested for six years by the Border Grizzly Project, a former research group that was affiliated with the University of Montana. The effects proved to be temporary and didn't cause any damage to the bears. Dr. Charles Jonkel, a project zoologist, stated, "We never had a single case where it failed", meaning the oleoresin capsicum (Lawing, p.3).

What is oleoresin capsicum? Oleoresin capsicum is a powerful inflammatory agent that occurs naturally in cayenne peppers. A variation of it has been used in pharmacology and for food spicing for years. It conforms to requirements of the Federal Food, Drug and Cosmetic Act, as well as state laws. Oleoresin is a naturally occurring mixture of oil and resin extracted from plants. Capsicum can be any of the various tropical plants in the genus *Capsicum*, the common pepper of the garden, ranging from mild to hot and having pungent (having a sharp or stinging odor or taste) seeds. These seeds are enclosed in a podded or bell-shaped pericarp (wall of a ripened ovary, sometimes consisting of three distinct layers, endocarp, mesocarp and exocarp) (Morgan p.22).

## **Review of Literature or Practice**

In 1991, the Portland Police Department began to look at oleoresin capsicum spray (OC spray) as a possible non-lethal force alternative for its officers. By the fall of 1992, after extensive research, comparative test, and a hands-on assessment of the various products available, the decision was made to issue OC spray to Portland Police officers. The decision to issue OC spray was not made lightly by this department. The Portland Police Department had not issued any chemical agents for the use by patrol officers since an officer was partially blinded by a tear gas product almost thirty years prior.

They decided to look into OC spray in an effort to reduce the increasing number of officer and citizen injuries during forceful situations, and to reduce the rising number of excessive force complaints. The department wanted an effective, less graphic and less harmful force option that could be used, if possible, before the use of impact weapons. The department developed an OC spray user lesson plan, conducted mandatory training for all officers, and began to issue OC spray to those officers who successfully completed the training.

In the study performed by the Portland Police Department in 1990-92, they found that subjects in reported force incidents were injured in 69% of the incidents, and officers



were injured in 31% of the incidents. Since OC spray's inception in Portland, there have been 226 incidents where officers used OC spray. There have been only twenty-six subjects (12%) and twenty-eight officers (12%) injured during these force incidents. Interestingly, of those fifty-four injured subjects and officers, thirty-three (61%) were injured before the officer's decision to use OC spray. Six subjects injured themselves by thrashing around after being restrained, and seven were injured by officers when the OC spray did not sufficiently incapacitate the subject and the officers had to strike with their fists or impact tools. Only four officers have been injured after OC spray was utilized. If the 1990-92 study percentages held true and OC spray had not been available, the 226 OC spray incidents up to this time would have resulted in an additional 130 subject injury and an additional forty-two officer injuries. This represents a decrease in subject injuries of 83% and a decrease in officer injuries of 61 % when OC spray is used and a decrease in subject injuries of 62% and a decrease in officer injuries of 49% overall(Gauvin, p.29-30).

OC spray is an effective weapon that doesn't kill, the International Association of Chiefs of Police (IACP) says--even though at least 30 suspects have died after being sprayed. The IACP examined 22 of the deaths and found that OC spray wasn't a factor in any of them, said John Granfield, who supervised the project. "I think it's definitely a good tool in law enforcement," said Granfield, a former police chief in Fairfax County, Va. "There's a lot less need with OC spray to have the physical kind of confrontation that causes injuries."

Some police groups question OC spray's effectiveness. Others, including the American Civil Liberties Union (ACLU), call it a deadly weapon. In March 1994, the ACLU in Los Angeles documented 14 California fatalities involving people who had been

sprayed with OC spray. Even if OC spray wasn't the cause of death, autopsy results shows it was a factor, said Allan Parachini, director of public affairs for the ACLU in southern California. But, Granfield's study, which came out in April 1994, concluded that OC spray is an effective way to subdue violent criminals, and insisted it is more humane than wielding a nightstick. The study, part of a larger examination paid for with a \$240,000.00 Justice Department grant, covered 1990 to 1993. Granfield said that 30 cases were found through news reports, information from the Association's 13,000 members, and other sources. Researchers were able to obtain autopsy or police reports in 22 of the cases, including 13 in California. They submitted their findings to Dr. Charles Petty, Professor of forensic science at the University of Texas Southwest Medical Center in Dallas and a former Dallas County medical examiner. "He looked at everything," Granfield said, "His determination was that the OC spray was not a factor in any of the 22 deaths." Most deaths occurred instead from positional asphyxia," meaning that the police restrained the suspects in such a way that restricted their breathing. This is also a common cause of death in cases not involving OC spray, he said. For example, suspects who are hog-tied--lying face down with handcuffs and leg shackles linked--sometimes suffocate if their bellies are pushed into their chest cavity(Granfield).

Although OC spray was not implicated as a lethal factor in the reported deaths, further discussion of sudden death in custody is warranted because of the potential for certain individuals to die in police custody. Research reveals that two conditions may account for some custody-related deaths: positional asphyxia and cocaine intoxication.

*Postional Asphyxia:* it occurs when body position interferes with respiration, resulting in asphyxia(Reay et al, 1992). It tends to occur in a similar manner, maximally restrained subjects, unless seated upright in police vehicle, may become quiet and

inactive after several minutes of transport. Respiratory difficulty is exhibited, and subjects subsequently stop breathing.

*Cocaine Abuse and Toxicity:* Cocaine is an agent that stimulates both the central nervous and the cardiovascular systems. Pharmacological, cocaine constricts blood vessels, elevates heart rate, raises blood pressure and increases body temperature. Such effects have produced lethal anatomic catastrophes in individuals without underlying preexisting anatomic diseases.

Oleoresin capsicum sprays are available in a wide variety of different concentrations. Oleoresin Capsicum is loaded in a 5% mixture known as OC spray. The formula is then loaded into its carrier, this is called a unit. This mixture is, in some name brands, non-flammable, non-toxic and non-lethal. OC spray can also dye your attacker orange for immediate suspect identification. These dyes are a natural by-product of the mixture. It will stain clothing and dye the skin for several hours. OC spray is believed to be the most advanced chemical defense tool available(Jim- Tex, p.18-19).

Effects of OC spray vary from person to person in the way the OC spray has been produced by the manufacturer, the concentration, the type of delivery system used, the sensitivity of the individual and how the product is used. Types of delivery systems can be as follows:

**Cone sprays-** these are designed to engulf the subject, effecting the eyes, respiratory system and mucous membranes of the face such as the nose, lips and mouth.

**Stream sprays-** these are designed to effect the eyes and mucous membranes of the face, such as the nose, lips and mouth.

**Bursts/fogger sprays-** these are designed to deliver a large quantity of OC in a "fog" manner while under high pressure.

**Splatter streams-** these are designed to deliver the OC in a spray pattern that is a combination of a cone spray and a stream spray(R.E.B., p.6)

Some of the effects of OC spray can be tearing of the eyes, as well as temporary paralysis of the larynx, which causes subjects to lose their breath. Contact with the face causes a strong burning sensation(Hunter, p.25).

Some marketers try to get you to buy their product over another by increasing the percentage of OC in the spray. For example, if 5% OC works good then 10% OC has to be better, right? WRONG! The same mixture is sometimes put in a canister and labeled as "Dog and Bear Repellent". Is it stronger than 5%? NO! Don't fall for marketing tricks. The S.H.V. rating is important to determine the effectiveness of the OC spray. S.H.U. is the Scoville Heat Unit rating. This is rated by gas chromatography and given a S.H.U. rating indicates how "HOT" the spray feels to your skin and the tissues of the body. The hotter the rating, the higher the effects of incapacitation. To give a familiar example, the Jalapeno pepper is rated at 6,000 S.H.U. Some OC spray formulas are rated at well over 1.5 million S.H.U.(Jim-Tex, p.18-19).

### **Discussion of Relevant Issues**

There are three major issues to be addressed in this research paper. The first is whether the Calhoun County Sheriff's Department needs to adopt OC spray for the Calhoun County deputies as a force option. The second is, if it is adopted, where on the use of force continuum does it need to be added. The third is the cost of the program, this would include the cost of training and the OC spray.

In the first issue, adding OC spray to the use of force continuum at the Calhoun County Sheriff's Department would be an asset for the deputies. This method should cut down on injuries when confronting a violent suspect. It would be good for the suspects,

as the only other option for the deputy would be to either fight the suspect or use the ASP tactical baton. Also, adding the OC spray would cut down on the liability to the Department against any excessive force complaints.

The information listed represents a fair representation of different police departments from around the state of Texas and how OC spray is used in their departments.

I interviewed the following officers and asked them whether their departments used OC spray, and where on the use of force continuum they had it. I received the following results:

Sgt. Gary Marek, Pflugerville PD	Yes/after soft physical contact
Sgt. John Baxter, San Jacinto University PD	No/currently researching OC use
Lt. T. Myrick, Mt. Pleasant PD	Yes/after soft physical contact
Sgt. T. Harm, Windcrest PD	Yes/after soft physical contact
Sgt. H. Watts, Vernon PD	Yes/after soft physical contact
Sgt. D. Waldschmidt, McKinney PD	Yes/even with impact weapon
Lt. D. Salazar, League City PD	Yes/after verbal commands fail
Sgt. K. Hogan, Houston PD	No/currently researching OC use

Now, I would like to address the question of where on the use of force continuum at the Calhoun County Sheriff's Department that OC spray would need to be added. After reviewing the research, it appears that most of the departments have OC spray use authorized after soft physical contact. I feel that once the situation escalates to any type of physical contact, you are subjecting the deputy and the suspect to possible injuries.

After discussing this with the Sheriff, a decision that OC spray be added after verbal commands fail appear to be the best place to add it.

The current use of force continuum at the Calhoun County Sheriff's Department is as follows:

*Command Presence*

*Verbal Commands*

*Physical Contact*

*Hand Held Impact Weapons*

*Lethal Force*

The new use of force Calhoun County Sheriff Department should include additional levels and appear as such:

*Physical Presence*

*Verbal Command*

*Less Than Physical Force (OC Spray)*

*Physical Contact*

*Hand Held Impact Weapons*

*Lethal Force*

As reflected in this new model, OC spray can give deputies an added degree of flexibility--before they make any physical contact with suspects and at any time before the introduction of hand-held impact weapons.

Other considerations are that because individual protective devices are widely used by citizens, neutralizing agents, like OC spray appears to be viewed by the public as an acceptable means of force. OC spray is available in most areas of the country in strengths

ranging from 5% to 10%. Most personal protective versions of the spray are in the 1% strength range. Sales of the OC spray in the 5% range are generally restricted to law enforcement. Like any weapon, OC spray should not be assumed to be risk free. Still, compared to using an ASP baton, OC spray generally represents a more acceptable level of force. In fact, because OC spray forces suspects to assume a prone position without deputies resorting to physical contact, departments that properly train their personnel in the proper use of OC spray, can significantly limit their vulnerability to lawsuits. The low probability of civil liability rests with the effectiveness of deputies training procedures(Hunter, p.25-26).

A possible important element of this training includes exposing deputies to the effects of OC spray. Exposure to OC spray gives you a unique opportunity to see how you function when you are in a compromised situation. The point is not just to understand how bad it hurts or how quick you can be incapacitated. We know OC spray works, we want to know in training if the deputy can work sprayed with OC spray. Can they continue to defend themselves and fight for their life. Exposure does show deputies how OC spray works and how fast it works--and (perhaps more valuable) how fast it doesn't work. In many cases, OC spray does not take effect immediately, a suspect can stay functional for several seconds, and some may never be affected. Knowing from first hand knowledge how OC spray is likely affect the deputy, may put them in a better position legally should they later end up having to use lethal force against someone on the street who is attacking them with OC spray. The training experience would help to articulate why the deputy felt that their life was in jeopardy from the assault(Willis, p.2).

The next and last issue is cost. Affordable training and deployment makes OC spray an attractive addition to the use of force continuum. At an initial cost of \$10.00 to \$25.00 per canister and 4 to 8 hours of in service training per deputy, implementation is practical for even small departments(Hunter, p.25-26).

### **Conclusion/Recommendation**

The purpose of this research paper is to determine if OC spray should be added on the Calhoun County Sheriff's Department use of force continuum. If OC spray were allowed, it would be necessary to determine where on the use of force continuum OC spray needs to be added.

The use of OC spray is relevant, a use of force option is needed so that deputies can use it in the event they are confronted by a violent suspect. Also there is less probability of injury to deputies or suspects and a less chance of civil liabilities. In looking at these issues, the research examined how other police departments in the state are using OC spray.

The recommendations are that the Calhoun County Sheriff's Department allow deputies to use OC spray. Before these deputies are allowed to carry OC spray, they will have to first successfully complete a course of training that will be selected by the department. The department will specify the type of delivery system and formulations to be used. Some factors used to determine this would include reliability and liability coverage.

Further recommendations would be to add OC spray to the use of force continuum as follows:



*Deputy Presence*

*Verbal Commands*

*Less than Physical Force (OC Spray)*

*Physical Contact*

*Hand Held Impact Weapons*

*Lethal Force*

Finally, development of a policy that gives special attention to reporting and decontamination of suspects, or bystanders that were exposed to OC spray. This would include documentation as to why OC spray had to be used and how, if any bystanders were exposed. OC spray has a good safety record, but individuals exposed to OC spray need to be monitored and medical attention be given to any person that does not find fast relief from decontamination, or who displays any respiratory problems.

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