

## **DISCLAIMER AND GENERAL INFORMATION - Salvia Divinorum**

This is a FAQ (answers to Frequently Asksed Questions) document about Salvia divinorum and its use. It is NOT intended to either encourage or discourage use of this plant or any pharmacologically active compound (e.g. salvinorin A) that it contains. IT IS INTENDED TO DISCOURAGE IRRESPONSIBLE USE. It is intended to make readers more knowledgeable about this interesting plant, its effects, and how it may best be used safely and responsibly by those who choose to do so. Choosing to work with it is a decision that only you can make. One should learn as much as possible about it before going forward with that decision.

The pharmacology of Salvia divinorum and its active principal, salvinorin A, remain poorly understood. Although Salvia divinorum appears to be quite safe in terms of physiological effects, one must bear in mind that virtually no toxicological studies have been done. No toxicity is associated with traditional Mazatec methods of oral ingestion; however, nothing is known regarding any possible high-dose toxicity. Like tobacco, smoking Salvia divinorum may involve health risks associated with the inhalation of various products of combustion, such tar, carbon monoxide, etc.

At the time of this writing, Salvia divinorum is a completely legal herb throughout the entire world. However, since many consciousness-altering herbs have been pronounced illegal by various governments in the past, it is certainly possible that a similar fate may be in store for this herb in the future. Don't use Salvia divinorum (or salvinorin A) anywhere its use or possession is subject to legal penalty. This FAQ material is for informational use only; I explicitly am telling you not to take any action based on this document which would break any law.

Used irresponsibly, Salvia divinorum and salvinorin A can be dangerous. If you decide to try this herb, or any preparation containing salvinorin A, it is your responsibility to take proper precautions so that you do not harm yourself or others while under its influence. Neither the author of this FAQ, nor any individual who contributed to its creation or posting, or who submitted material contained herein, nor the web site host, nor anyone but you yourself is responsible for your actions or their consequences.

This FAQ is intended to present the facts that are known about Salvia divinorum at this time (early 2000). While care has been taken to be as objective as possible, many issues discussed will be controversial and complete objectivity is impossible. Although fairly extensive in its coverage, this FAQ is not comprehensive.

This FAQ is intended for mature, legally-competent adults, willing and able to make their own decisions without blaming others for what they do, or don't do. It is not written for minors, incompetents, or for any individual who is unable, or unwilling, to take complete legal and moral responsibility for his or her actions. By the act of continuing to read this FAQ you are agreeing that you are a legally competent responsible adult, and that you are willing to take sole responsibility for the consequences of your actions. If you do not agree with this statement, please stop reading now.

### III. SALVIA DIVINORUM BASICS

Q. What is Salvia divinorum?

A. Salvia divinorum is a plant used for its psychoactive effects. Given the right dose, individual, set and setting, it produces a unique state of 'divine inebriation' which has been traditionally used by Mazatec healers. This inebriation is quite different from that of alcohol. S. divinorum is both similar to, and different from, other drugs that affect the brain and behavior. In many ways Salvia divinorum is a unique 'magical' herb. Salvia (and the salvinorin it contains) is very difficult to categorize pharmacologically. It does not fit well into any existing pharmacological class. Louis Lewin, the father of psychopharmacology called vision inducing drugs 'phantastica'. Let us dust off this venerable term and recycle it by calling Salvia divinorum a 'phantasticant'.

Q. Does Salvia divinorum have a history of traditional use?

A. Salvia divinorum is used as a sacred medicine by indigenous shamanic healers living in the mountainous Sierra Madre Oriental in the northeastern corner of the Mexican State of Oaxaca. In Spanish, these specialized healers are referred to as curanderos; in Mazatec these people are called cho-ta-ci-ne ("one who knows"). Salvia divinorum is primarily used in situations where the curanderos feels it is necessary to travel into the supernatural world in order to discover the true cause of the patient's trouble. It is used in a ceremonial manner to induce a visionary trance state, within which it is possible determine the underlying cause of disease and to learn what steps should be taken to remedy such disease. It is also used in cases of theft or loss to determine the circumstances and whereabouts of missing objects. The leaves are always used fresh and are consumed orally; either by chewing the leaves or drinking an aqueous infusion of the crushed-leaf juices. Sometimes it is given to the patient, sometimes it is taken by the curandero and sometimes both take it together.

Most reports describe the use of this plant by Mazatec shamans, and although it is just barely touched upon in the anthropological literature, it is also reportedly used by their immediately contiguous neighbors, the Cuicatecs and Chinatecs. Given that the plant is quite easily propagated, it is surprising that such an extraordinary herb is only known of in such a geographically limited area. It seems quite probable that it would have found its way to other neighboring tribes through sharing and trade. Perhaps its use is still concealed from the outside world by other groups of indigenous Mexican Indians who still prefer to keep such a sacred plant secret.

Q. Salvia divinorum is often sold by the ounce. How many dried leaves are in an ounce?

A. This can vary quite a lot. An average, large, mature leaf weighs about 1/3 gram dry. However, a typical harvest of leaves will include leaves of all sizes. A typical ounce usually contains 100 - 200 leaves. It is generally best not to estimate dose by leaf count, but rather by weight.

Q. How many smoked doses are in an ounce of leaf?

A. It varies, depending on the potency of the leaf and the sensitivity of the individual. A person of average sensitivity should be able to achieve moderately strong effects from 1/2 gram of average potency leaf, or 1/4 gram of stronger material, such as "Sierra Mazateca Prime Harvest". To achieve the full effects from a given quantity of leaf, it is very important to use the proper smoking technique.

Q. How many doses are in one ounce of dried Salvia divinorum when using the quid method of ingestion?

A: One ounce should be enough for 4-12 doses, depending on the strength of

effects you are after. It is best to rehydrate the leaves with a little water before ingesting them.

Q. Salvinorin A fortified leaf is often sold by the gram. How many doses are in a gram?

A. This depends on potency of the particular product and the individual's sensitivity. The 5x extracts which are available, (including the "regular-strength" fortified leaves offered by some vendors) contains between 10-15 mg of salvinorin A per gram. If you are working with this product, a starting dose is about 1/20 gram (40-50 mg) of the extract. If you find that the effects are too mild for you at this level, then gradually increase the dose until you find the level that works best for you.

Q. How can I measure 1/20 gram (50 mg)?

A. If you do not have a scale that can measure this quantity, you can simply divide one gram into 20 even parts. First divide the gram into four even piles, then divide each of those into five. It is important that you divide it up as evenly as possible. Either package and store all 20 parts separately (gelatin capsules work great for this), or just keep one part separate to use as a visual reference to estimate the correct amount to use in the future.

Q. How long can I store Salvia divinorum leaves or salvinorin A fortified leaf without them losing potency?

A. Probably for decades. The active principal, salvinorin A, is quite stable and can be stored at room-temperature. It is probably a good idea to store it in a dark location, such as a drawer or cupboard, so that it is not exposed to the potentially harmful effects of UV light.

Q. Where can I obtain seeds for Salvia divinorum?

A: Salvia divinorum seeds are extremely rare. For reasons not well understood, the plant almost never produces them (even when carefully hand pollinated). You are unlikely to find them offered for sale anywhere. Salvia divinorum seeds have a very low rate of germination and often the seedlings do not survive. Typically, one can only expect about 10% of a batch of the seeds to develop into healthy plants.

## V. SALVIA TRIPS AND HOW TO RATE THEM

Q. What is a Salvia divinorum trip like?

A. It's probably not like what you expect. Even if you have considerable experience with various drugs, Salvia is not much like what you have encountered. Salvia is unique, and it is best understood on its own terms, and not by analogy with other substances. Salvia is not a recreational drug, rather, it is best used by those wishing to explore deep meditative states, spiritual realms, mysticism, the nature of consciousness and reality, or the possibilities of shamanistic healing. Experiences vary with the individual, set, and setting as well as with dose and route of administration. It produces a short-lived inebriation that is very different from that of alcohol. However, like alcohol it interferes with the ability to drive, produces incoordination (ataxia), and may produce slurred speech.

The inebriation—at low doses—can facilitate aesthetic and sensual appreciation. However, the experience is not marijuana like, and Salvia is not a marijuana substitute. At somewhat higher doses visionary trances occur. The lowest level visions consist mainly of closed eye imagery somewhat similar to the hypnagogic phenomena that many people experience when falling asleep. These tend to be two dimensional faint images. The term 'eye candy' is an appropriate description

of the interesting closed eye visuals that are not confused with reality. At this level communication with others is still easy and one can move about although clumsiness will occur. With a higher dose vivid visual images occur even with eyes open, and with eyes closed one may completely enter the visionary world, and it will seem quite real, but upon opening ones eyes one will reestablish contact with ones surroundings. Speech patterns may be interfered with and communication is difficult. At still higher doses, one remains conscious but completely enters an inner realm and loses all contact with ones actual surroundings. Some people may move around in this deep trance state and for this reason a sitter is required for anyone seeking to explore such deep levels. With very high dosage a brief period of unconsciousness or at least the inability to subsequently remember the experience will occur. It is useful to have a scale to describe Salvia trips. One such rating scale is based on the mnemonic S-A-L-V-I-A.

Q. Maybe the scale can help me know what to expect. What's the scale?

A. The scale describes six different levels of intoxication, each one more intense than the previous. The overall intensity of Salvia trips is scored according to the highest scale level attained during the course of the trip.

#### S-A-L-V-I-A Trip Rating Scale

Level -1 "S stands for SUBTLE effects." A feeling that 'something' is happening, although it is difficult to say just what. Relaxation and increased sensual appreciation may be noted. This mild level is useful for meditation and may facilitate sexual pleasure.

Level - 2 "A stands for ALTERED perception." Colors and textures are paid attention to. Appreciation of music may be enhanced. Space may appear of greater or lesser depth than is usual. But visions do not occur at this level. Thinking becomes less logical, and more playful; short term memory difficulties are may be noted.

Level - 3 "L" stands for LIGHT visionary state." Closed eye visuals (clear imagery with eyes closed: fractal patterns, vinelike and geometric patterns, visions of objects and designs). The imagery is often two dimensional. If open eyed visual effects occur these are usually vague and fleeting. At this level phenomena similar to the hypnagogic phenomena that some people experience at sleep onset occur. At this level visions are experienced as 'eye candy' but are not confused with reality.

Level - 4 "V stands for VIVID visionary state." Complex three dimensional realistic appearing scenes occur. Sometimes voices may be heard. With eyes open contact with consensual reality will not be entirely lost, but when you close your eyes you may forget about consensus reality and enter completely into a dreamlike scene. Shamanistic journeying to other lands, foreign or imaginary; encounters with beings, entities, spirits; or travels to other ages may occur. You may even live the life of another person. At this level you have entered the shaman's world. Or if you prefer you are in "dream time". With eyes closed you experience fantasies (dream like happenings, with a story line to them). So long as your eyes are closed you may believe they are really occurring. This differs from the 'eye candy' closed eye imagery, of level 3.

Level - 5 "I" stands for IMMATERIAL existence." At this level consciousness remains and some thought processes are still lucid, but one becomes completely involved in inner experience and loses all contact with consensual reality. Individuality may be lost; one experiences merging with God/dess, mind, universal consciousness, or bizarre fusions with other objects real or imagined,

e.g. merging with a wall may be experienced. At this level it is impossible to function in consensual reality, but unfortunately some people do not remain still but move around in this befuddled state. For this reason a sitter is essential to ensure the safety of someone voyaging to the inner levels. To the person experiencing this, the phenomenon may be terrifying or exceedingly pleasant; but to an outside observer the individual may appear confused or disoriented.

Level 6 - "A stands for AMNESIC effects " At this stage either consciousness is lost; or at least one is unable to later recall what one is experiencing. The individual may fall, or remain immobile or thrash around; somnambulistic behavior may occur; injuries can be sustained without pain being felt; on awakening the individual will have no recollection of what he/she did, experienced or said in level 6. People cannot ever recall what they experience in this very deep trance state. This is not a sought after level as later nothing can be recalled of the experience.

Q. Do Salvia users use any special words to describe the experience?

A. Yes. Members of the Salvia e-mail list have contributed numerous Salvia vocabulary suggestions. A few of the more accessible words and phrases submitted were: accepting, afterglow, besaged, dissociadelic, dream people, endoreality, fantasia, floating, goofy, healing, magic casements, mind tunnels, sound of silence, strange attractor, teacher, transdimensional, visions, weird, and wisdom.

The following is one persons report of a first meeting with Lady Salvia. It comes from Greendrag (dextro50@lycaenum.org) who has given permission for its inclusion in this FAQ.

#### A New Awareness Through Salvia

The Setting: A deserted beach in southern Mississippi on a bright, windy day. I was with my friend (lets call him M). He would be the trip sitter.

The Experience: I sat down in a comfortable position with my head propped up and my hands folded. M filled the pipe (a cheap cannabis pipe) to the brim with Salvia. I found myself a bit nervous...the same feeling one would feel before a carnival ride he/she has never been on. M then lit the pipe and administered the first hit to me. I held it in for a good 20 seconds. Nothing much of a cannabis buzz happened for the first three hits. I signaled for a 4th hit. I held that in for a while, and then laid my head back. All of a sudden I fell into an amnesic dream. I was thinking to myself...that's weird nothing happened. That's it? That's what Salvia is like? I don't feel a thing! Wait a minute. I'm dreaming, but I'm not asleep! Here's how I described it to a friend:

"Imagine you are on this futuristic roller coaster right before it takes off. You hear a voice that says "Get Ready...you are about to be catapulted off into the ride of your life" and then BANG...you have no idea what just happened. You seemed to have dozed off right after the bang, but you're not sleeping. You then think to yourself am I in an amusement park? Wait, I went on the roller coaster and I heard this voice tell me I am about to be catapulted into the ride of my life, or something. I don't remember anything after hearing that voice. Is THIS it??? It can't be...it seems so...familiar. Normal. I've done this a thousand times before I was old enough to retain memories. Wait...is that...I'm sleeping...who is that...this is so simple...I understand perfectly...things are always the same...".

After smoking Salvia, I felt some sort of amnesia. I was not quite sure what happened after the 3rd or 4th hit. I then realized something...this WAS the trip. It was like I fell asleep for 10 years after the 3rd hit, then right before I woke up,

time traveled back 10 years and I woke up immediately after taking that hit.

During the moments after I felt like I had done this a hundred times before. I felt like I was in a scene from my childhood...almost as if I had smoked Salvia as a child and was feeling something in the present. I felt (note, I didn't see any of this, it was purely a feeling) like I was 8 years old, in a park around my house in a swing during the middle of a summer day. After I got this feeling, the feeling of the park transformed into where I was -- the beach at present age. I then began to see (through closed eyelids) what looked like a ranch in Mexico. I then \*felt\* that I was in the desert southwest, looking into this ranch. Through closed eyelids, I saw the beach I was on, but then a few yards away, the beach sand ended and the ranch/desert began. In the ranch, I thought I saw a beautiful Mexican lady, but I could be wrong. I then felt I was on an Indian reservation, with some Indians. I felt the feeling of the "peyoteros". I then felt the ranch/desert/reservation drift away, not in a normal fashion, but around my body in a 360 degree turn around my body. I then felt a closeness with the aura of it all. I got the feeling that Salvia was just one of a whole library of psychedelics just waiting to be used. I then felt "normal" again and lied there still for a few moments, with my eyes closed. M had wondered off and I heard him in the distance. I then heard footsteps come behind the umbrellas, and then around them. I felt the presence of some old, yet beautiful man (could have been a woman) sprinkle some dust on me. I didn't feel the dust, but I felt something mentally. I then opened my eyes. If you have seen the movie "Contact", I felt exactly like what happened to Jodie Foster as she crashed onto the beach after being transported in that machine. Also, the scene afterward where she comes back to earth, yet still feeling she was on that beach. BTW, this was about 5-10 minutes after I had smoked that last hit.

I sat up and walked off to the edge of the beach. I was left with a sort of knowingness. I realized many things at this point after the experience. I would call THIS the best part of the trip. The theories I had come up with the days before seemed to make sense. EVERYTHING seemed to make total sense. I thought about the world I live in. That didn't make sense. Commercialism, money, business, finance, government...that made no sense. I realized that things such as fear (such of that of ghosts), jealousy, anxiety, stress, fright...these were things that are human. These things are built into the human mind to act as hurdles that we must jump. She said that things such as fundamentalist religion and science were parts of this "human" quality. None of these "human" things made sense. I realized that in the afterworld (or whatever), these things are no longer present. The human brain acts as a filter for our soul. We can not directly experience the things our soul feels, so it gets filtered through our brain. This filter adds things such as fear and hate to the things that our soul feels. I felt like that filter had been removed for a while. This could technically be called losing your mind, though it had nothing to do with sanity. I repeated to myself "If only they knew". I had the feeling of having gone to heaven. I was also shown the goodness of psychedelic drugs. She told me that she had many, many "friends"...many of them haven't been discovered yet. I walked back to the umbrellas to M. He asked me how it was. I just sat there silent, meditative. I told him "I can't tell you what this is". I had no sense of shock. I had no sense of WOW, no sense of surprise. It was just a sense of knowingness, understanding, calmness, peace. I remained silent for the whole "afterglow" period. Now, I look at things a different way. Salvia is definitely a "teacher" plant. I now look upon her (and her friends) very seriously and in the utmost respect. -Greendrag  
(dextro50@lycaeam.org)

## VI. METHODS OF USE

Q. How is Salvia used? What are the methods and how do they differ?

A. There are several different methods of using Salvia: These are discussed below under the questions about smoking, oral, and other methods.

Q. Okay, tell me about smoking.

A. Smoking is probably the most common method for 'Western' users. Dried Salvia leaf is readily available from commercial sources and can be smoked without further preparation in tobacco pipes, joints, or water-pipes or bongos. Salvia must be smoked hot (hotter than tobacco is) in order for salvinorin to be vaporized. The smoke is inhaled fast and hot, deeply into the lungs. Several hits in quick succession are usually required. The smoke is irritating and probably has the same sort of health risks as tobacco smoke - cancer, bronchitis, emphysema, and heart and blood vessel disease. When smoking it is a good idea to have a sitter present although many smokers do not take this advice.

Q. What is the usual dose?

A. One or two large crushed leaves ( $\frac{1}{4}$ – $\frac{1}{2}$  gram). Individual requirements will vary.

Q. How strong is smoking?

A. It varies greatly depending on the dose.

Q. How long does the trip last?

A. When smoked, the first effects are noticed within 1 minute, rapidly developing to a peak which lasts 5 - 10 minutes, then gradually diminishing over the next 20 - 30 minutes. From beginning to end, the entire experience lasts 30 minutes to one hour. Best not to drive for at least several more hours - just in case your reflexes or judgement are impaired longer than you think they might be.

Q. Is there any special trick to smoking Salvia divinorum?

A. It is best to smoke the leaf material in a pipe (not a cigarette). Salvinorin A has a relatively high vaporization temperature, and with a pipe you can draw a flame directly onto the leaf material so that it burns quite hot. It is very important to hold the smoke deeply in the lungs for a good 20 - 30 seconds before exhaling. This allows time for salvinorin A to be absorbed from the smoke. If one exhales too quickly, much of the material will be wasted. The level of effects you achieve depends on the amount of smoke inhaled and absorbed within about a 2 minute period. Within 2 minutes, you should be able to take 3 big hits (holding each one in for 20 - 30 seconds). The body metabolizes salvinorin A quite rapidly, so if you want to increase the effect by smoking several hits, you need to ingest the smoke faster than it is metabolized. If you pause too long between hits, the duration will be extended, but the intensity of effects won't increase.

Q. How do I smoke salvinorin A fortified leaf?

A. The standardized salvinorin A enhanced leaf is very easy to use. Place the amount that you intend to use in the bowl of a small pipe. Since the leaf may be very finely crumbled, the pipe should be fitted with a fine-mesh screen in the bottom of the bowl to prevent small particles from getting into the pipe-stem and being inhaled. When you are ready, first take a deep breath of fresh air, then exhale to empty your lungs, then immediately apply a flame to the leaf material and inhale the whole dose of smoke in one lungfull. It is important to hold the lighter flame immediately above the material and to draw it down into the leaves as you inhale. The leaf must be heated to a relatively high temperature in order to vaporize the active principal. As long as the flame is drawn down into the leaf, it will burn the leaves at a high enough temperature. It is very important to hold the smoke deeply in your lungs for a good 20–30 seconds before exhaling. It

takes time for salvinorin-A to condense out of the smoke and be absorbed by the lungs. If you exhale too soon much of it will be wasted.

Q. Do I need a special kind of lighter to smoke salvinorin A fortified leaf or *Salvia divinorum* leaves?

A. An ordinary lighter or match is quite hot enough to vaporize salvinorin A and should be quite adequate for smoking salvinorin A fortified leaf products. An extra hot flame, such as that produced by a micro-torch, will simply cause more rapid vaporization and combustion. This can be an advantage when smoking plain *Salvia divinorum* leaves, because it is usually necessary to smoke a relatively large amount of leaf in a short amount time to achieve strong effects.

Q. Can the standardized salvinorin A fortified leaf products be taken orally/sublingually?

A: In theory, yes, but since sublingual absorption is not very efficient in this form, you would need to use a dose about 30–40 times larger than the smoking dose. From an economic point of view, it makes far more sense to use Sage Goddess Emerald Essence for sublingual use. Save the standardized salvinorin A fortified leaf for smoking, since the primary benefit of the standardized extracts is that they substantially reduce the amount of smoke one needs to ingest.

Q. Is it true that it requires several attempts, before one begins to experience the full effects of *Salvia*?

A: Many people report that they became more sensitive to the effects of *Salvia* after they had tried it several times. Apparently it may take a few exposures before one becomes fully sensitized to *Salvia*'s effects. I don't know why this should be the case, but I've heard it from so many people that am convinced this is a real phenomenon.

Q. I've followed all the advice, but I don't seem to be able to achieve strong effects, why is this?

A. Approximately 10% of people are unusually insensitive to salvinorin A. Most of these people can achieve a satisfactory level of effects by using a higher than average dose. Some people require a dose several times higher than average. Be very cautious when experimenting with higher than average doses. Doses should be increased in gradual increments until one find the level of effects that interests you.

Q. Is there any way to extend the duration of the effects of smoked *Salvia divinorum*?

A: salvinorin A does not produce a tolerance effect, so you can extend the experience by simply smoking more as soon as the effects begin to fade. You can also ease into the experience by starting with a small dose and following it immediately with a "booster" dose.

Q. What is vaporization and how does it differ from smoking?

A. Vaporization consists of heating pure salvinorin A, extract, or powdered leaf to a high temperature without igniting it. The temperature must be high enough for at least some of the salvinorin to temporarily become a gas (vapor). These vapors, mixed with the aerosol the vapors condense to and air, are inhaled. Like the smoke from burning *Salvia* leaves, the products of vaporization contain salvinorin and other volatile products, either as gases, or as an aerosol of small condensed droplets. Unlike smoking, vaporization does not produce ash particulates, or oxidation products such as carbon monoxide. Inhaling vapors is probably somewhat less damaging to one's lungs than is inhaling smoke; but it cannot be considered free of all health risks. Your lungs evolved to inhale clean air, not hot vapors.

Q. How is vaporization done?

A. There are not yet commercial vaporizers optimized for smoking Salvia. Salvia leaf, extract, or salvinorin can be vaporized on heated aluminum foil and inhaled with a straw. Alternatively, homemade vaporizer units can be constructed, or units designed for consumption of cannabis or tobacco can be used. Many commercial units are either not hot enough (won't vaporize) or too hot (will carbonize) for optimum vaporization of salvinorin.

Q. Is vaporization strong?

A. Of course it depends on the dose, but it can be unbelievably strong! Dangerously so!. Since very little smoke is produced with this technique, it is possible to inhale a very large dose with very little effort. At large doses, one may temporarily lose all awareness of who one is, where one is or what one is doing. Falls, fires, injuries etc. can easily occur. If you will be vaporizing it is ABSOLUTELY ESSENTIAL that a sitter be present to protect you from injury.

Q. How far can one go on vaporization?

A. Level 6. You can pass out.

Q. So vaporized crude leaf powder can take you as far as pure salvinorin can?

A. Yes. To the point of general anesthesia.

Q. How long do vaporizer trips last?

A. Usually less than 1/2 hour.

Q. How quickly do they take effect?

A. Within seconds of inhaling a lung full of vapor. The first few inhalations often contain no salvinorin as the unit is not yet hot enough. Once salvinorin is inhaled you have only seconds to lie down in a safe place before you become incapacitated!

Q. Is vaporization a good way to go?

A. NO! Definitely not with present day vaporizer designs. Perhaps in the future a vaporizer will be designed specifically for Salvia use which consistently delivers just the dose one is seeking. But using present day designs one goes too far, too fast. Injuries and fires can easily occur. There's nothing desirable about passing out. Instead of being able to linger at the interesting moderate trip levels of 3 and 4, you are blasted into a maximum intensity trip for which you will have little subsequent memory, and then it's all over. If you want to get completely smashed instantly vaporization will achieve that, but if you want a dialog with a 'teacher plant', just smoke leaves, or better yet take Salvia orally.

Q. How about oral use?

A. Oral use by means of chewed and swallowed leaves, or by means of a water-based Salvia drink are the traditional methods of use by the Mazatec healers. These methods have much to recommend them including safety and suitability for learning from the 'teacher plant'. When Salvia leaves are chewed and held in one's mouth a long time, salvinorin is absorbed directly by the tissues lining the mouth. Swallowed Salvia is much less effective, although the traditional Mazatec water-based drink, which is swallowed, is effective if enough leaves are used in its preparation.

Q. Does oral Salvia work as fast as smoking?

A. Definitely not. When ingested orally, the first effects begin in 10 -20 minutes. The effects build to a peak fairly quickly, reaching a plateau which can last anywhere from 30 minutes to one and a half hours. The effects then gradually

subside over an additional 30 minutes to one and a half hours. From beginning to end, the entire experience can last anywhere from one to three hours. Best not to drive for at least several more hours - just in case your reflexes or judgement are impaired longer than you think they might be.

Q. What method of ingestion produces the best effects: Smoked or oral?

A: Different people have different preferences. You should experiment with both methods and find your own preference. Smoking provides a relatively short, but potentially very intense experience, whereas sublingual absorption provides a substantially longer lasting and somewhat more gentle experience.

Q. What is the quid method?

A. A quid is a rolled up cylinder of fresh leaves. The quid method traditionally uses fresh *Salvia* leaves, large ones if available. Rehydrated previously dried leaves can be used if fresh ones are unavailable; there seems to be little loss of strength due to drying and rehydration. The quid method brings about a fine trip that lasts somewhat longer than a smoking trip does. Unlike smoking, the quid method does not damage lungs. Unfortunately the quid method does not work for everyone. And some find the quid method to be unpleasant.

The following is a recipe for using a large dose of leaves by the quid method. It can produce a very strong trip.

Note: This recipe calls for 16 leaves which is a large dose. A smaller dose would be safer for novices, using fewer leaves is especially important if exceptionally strong leaves (e.g. commercially available Hawaiian leaves) are being used.

Method: Make two quids of about 8 leaves each. Chew the first quid for 15 minutes, chewing once every 5 to 10 seconds. Keep the quid under your tongue between chews as this maximizes sublingual absorption. Swish the saliva around your mouth from time to time. Do not swallow or spit unless necessary. After 15 minutes of chewing, spit out the remains of the first quid. Now, if you are not already as high as you want to get, begin the second quid. Chew this exactly like the first for 15 minutes. When that 15 minutes have gone, spit out the quid. Of course if you feel you have reached the level you want, just spit out the quid before you get higher than you want to. A few minutes after you spit out the quid you will start coming down. During quid chewing, have a bowl handy for spitting into. Make sure it is a bowl that won't tip over, as you will get pretty uncoordinated! Keep a towel handy in case you drool. The taste of chewed leaves is unpleasantly bitter but most people won't vomit. However, keep that bowl handy!

Q. Is there a safe way of increasing the effect of chewed quid?

A. The effect of chewed quid can apparently be potentiated just by using mouthwash! Do not add the mouthwash to the leaves. Instead, just before putting the quid in your mouth, rinse your entire mouth out thoroughly (for at least 30 seconds) with a mouthwash that contains both menthol and alcohol. Cool Mint Listerine® works well. This will noticeably increase the effect of chewed leaves. This effect makes pharmacological sense, as it is known that a mixture of alcohol, water, and menthol increases the permeability of mucous membranes to various drugs. Presumably it is increasing the rate of salvinorin absorption. It is possible that other ingredients in the mouthwash, such as eucalyptol may also be contributing to this effect. Another technique, which may be helpful, is to lightly brush the interior surfaces of the mouth with a toothbrush. This removes a layer of dead cells and consequently seems to improve absorption. If you will also be using the mouthwash technique, it is probably best to do the brushing first.

Q. What's Salvia honey slurry?

A. Recipe for Salvia honey slurry: Ingredients: 5 grams of finely powdered dried Salvia leaf; 1 tsp. McCormick Peppermint extract (80% alcohol); 4 tsp. honey that was first warmed in a microwave oven. Preparation: the leaf powder is put into a teacup, add the peppermint extract, then the honey. Mix until a uniform slurry is formed. Use: lie down on a couch or on the floor on pillows, dim the lights, and slowly spoon the mixture into your mouth, one spoonful at a time; get it under your tongue and in contact with the entire lining of your mouth. When your mouth becomes full of saliva swallow and spoon in the next spoonful of honey slurry. Over a 30 minute period slowly consume all the honey, keeping it in contact with your oral mucosa as long as possible. Expect a mild gentle trip, not a very strong one.

Q. What's a sublingual extract?

A. These are extracts designed for sublingual absorption. They are held beneath the tongue so that the active principal is absorbed into the sublingual mucosa and from there into the bloodstream. The duration and quality of the experience produced is equivalent to chewing fresh leaves using the quid method. One type of extract that may be used in this manner is called a "soft extract". Soft extracts are tar-like in texture; they are effective for sublingual use, but very large amounts must be used because they are not absorbed very efficiently. More information about soft extracts is available in section XIII Processing plant material. Various liquid extracts are also effective for sublingual use.

Q. What is Salvia elixir?"

A. A sweetened aromatic alcohol water extraction of Salvia leaf. It is held in the mouth for 1/2 hour to allow salvinorin to be absorbed

Q. How is it made and used?

A. Recipe for Salvia peppermint elixir: Note: this extraction uses whiskey, rum, or vodka. DO NOT USE POISONOUS DENATURED ALCOHOL. Ingredients and method: powdered Salvia leaf (all you can spare) in a quart Mason jar. Barely cover the powder with whisky, vodka, or rum, the higher the proof the better. Close the jar. Shake every 15 minutes for 2 hours minimum. (For stronger elixir let it sit in contact with the leaf powder for days.) Pour off the Salvia / whiskey mixture, filtering it through a fine mesh spice bag (the type chefs use for Bouquet garni). Squeeze the wet powder through the bag, saving as much of the Salvia saturated whiskey as possible. The whiskey (which is chemically a mixture of ethanol and water) has extracted the salvinorin A, so you now have an extract containing salvinorin. Add 1 capful of McCormick's Peppermint Extract (to make the brew both more palatable and more potent) to 1 oz. of the Salvia extract. What you now have is an ethanol/water/menthol/salvinorin delivery system. The menthol in the peppermint extract probably helps transport salvinorin across the oral mucosa, thereby maximizing the amount of Salvinorin that enters your blood stream. Sweeten with a little honey or sugar. You will need to dilute the elixir with an equal volume of water just prior to use in order to avoid mouth irritation. To use, hold in your mouth and swish it around for 30 minutes. Hold as much in your mouth as you comfortably can (about 2 oz.)

Q. Will cooked Salvia have any effect?

A. Yes. For some people, but usually the effect will be quite mild, only just above threshold level. Here is a report of an experiment and recipe that provided a pleasant mild trip (level 2 to level 3 on the S-A-L-V-I-A scale Materials:

- 4 freshly picked very large leaves from good plants were cut into strips. The leaf material weighted 9.92 G.
- 4 tsp Extra Virgin Olive Oil

- 1 large clove of garlic , coarsely sliced
- 1 tsp. soy sauce
- a small piece of frozen ginger root (about 2 cm. wide and 1/2 cm. long)
- a pinch of ground chili pepper

Preparation: The cut up leaves were mixed with the sliced clove of garlic and the extra virgin olive oil and this mixture was stir fried in a wok-style fry pan. The pan had a Teflon lining and stir frying was done with wooden spoons (thus the leaves were not in contact with metal while being fried (it is not known if this makes a difference). The mixture was stir fried until the garlic slices turned medium brown darker than golden brown but definitely not charred). Once the garlic had turned brown the leaves, garlic and the oil in which the mixture had been fried were all transferred to the refrigerator for later consumption. Note: the time the leaves spent sitting in the oil in the refrigerator may have aided salvinorin extraction into the oil phase. Several hours later the bowl was taken out of the refrigerator, the frozen ginger root was grated onto it and a pinch of chili powder and 1 tsp. of soy sauce were added for flavoring. These were mixed and the entire contents of the bowl, including all the oil was eaten (not kept under the tongue like a chewed Salvia quid but rather eaten like any food would be). The sauté was consumed on an empty stomach (which may have been necessary for its rapid absorption). A repeat of this experiment during which the fried leaves were not refrigerated prior to consumption yielded only a minimal trip (level 1 to 2) for one individual and no trip for a second person. There have been other reports of both success and failure from sauteed Salvia. It is possible that one reason not everyone is successful in obtaining a Salvia effect from the sauté may be differences in leaf potency. With weaker leaves a higher dose would be required. If you try this, eat all the oil the leaves were fried in along with the leaves, as the oil probably contains much of the salvinorin. Probably the best results (assuming average quality leaves eaten by an individual with average sensitivity to Salvia) would be obtained with a dose of about 15 to 20 grams of fresh leaves sautéed as described. Comments: The trip I experienced the first time was level 2 to 3 and the second time level 1 to 2. The recommendation to increase the leaf dosage was made in the interest of being able to achieve a somewhat higher level for myself and a discernible level for someone less sensitive to Salvia than I am. I believe I am more sensitive to Salvia than about 2/3 of people.

## VII. THE PLANT AND ITS CARE

Q. What type of plant is *Salvia divinorum*?

A. *Salvia divinorum* is a type of sage. Generally, sages belong to the genus *Salvia*. There are about 900 different *Salvia* species, including many ornamental garden sages and *Salvia officinalis*, the common cooking sage. *Salvia* is a genus in the mint family (Lamiaceae) *Salvia divinorum* is literally the sage (*Salvia*) of the diviners (*divinorum*). The plant has a characteristic weak 'mousy-but-minty' aroma. It is a native of a small area in Oaxaca, Mexico, growing in mountainous lands where the Mazatec Indian people dwell.

Q. How does the plant grow?

A. *Salvia divinorum* is a semi-tropical perennial. That means that it can grow back year after year but only if it is not exposed to frost. It is a green plant with large leaves and a distinctive thick hollow square green stem. It can grow several meters high if conditions are favorable. When it grows high enough the branches will bend or break and may root if they come in contact with moist earth. Although *S. divinorum* can flower under natural lighting conditions (it has white flowers with purplish calyces), it only rarely sets seed, even when carefully hand-pollinated, and when it does the seeds are not very fertile. Experience has shown

that plants grown from seed are often lacking in vigor. The plant is typically propagated by cuttings. The leaves are oval, weakly serrated and can be quite large (up to 9 inches length). The leaves are often emerald green and are covered with a fine coating of very short hairs giving the leaves a satin-like velvety appearance in certain lights. The plants are water loving but grow best in partial shade in well-watered but well-drained soil.

Q. Is it easy to grow Salvia?

A. Yes. Salvia can be grown indoors in any climate. It makes a beautiful house plant.

Q. Can I grow it outdoors?

A. That depends on where you live. If you live in a humid semi-tropical climate, with well-drained but well-watered somewhat acidic soil with a high humus content, Salvia will thrive. If you live in a more northern (or arid) climate you can still grow Salvia outdoors, weather permitting, but you may have to do it with some care, making sure it is protected from frost, watered frequently, and misted as needed when low humidity conditions prevail. Salvia will not tolerate frost or drought. It can be grown outdoors in pots which can be brought indoors when it is cold (below 40 degrees Fahrenheit).

Q. How often should it be watered?

A. Often. Salvia will tell you when it is getting too dry - its leaves will droop. Be sure to water it at the first sign of mild drooping, do not let the plant become flaccid. The soil should drain but should be kept moist.

Q. What soil mixture should I use?

A. Commercial potting soil will do. Make sure the pot is large. It should have a drain hole. Placing gravel (or broken up chunks of styrofoam) in the bottom of the pot will help promote drainage and thus discourage root rot.

Q. Does it need fertilizer?

A. Yes it will. There is no one fertilizer that is clearly best. Satisfactory results can be achieved with different products. Some of them are: Scotts All-Purpose Plant Food 18-13-13 lightly sprinkled on the soil about once every six weeks; fish emulsion (but this is not for indoor use as it stinks); Miracid added to the water once a week (1/4 tsp. per gallon); Peters Professional Soluble Plant Food (15-30-15) 1/4 tsp. to gallon of water once per week.

Q. How much sunlight is needed?

A. Salvia divinorum can do well in a variety of different lighting conditions. It does best with a few hours of partial sunlight a day. It can do well grown indoors near a window. It can survive full sun if kept well watered and misted frequently. It can also handle moderately deep shade.

Q. What pests are a problem?

A. Too many! Whitefly is a big problem for greenhouse grown plants. Aphids, slugs, caterpillars, thrips, spider mites, and scale insects can also damage your plants. Root rot and stem rot can be problems. Fungal spots can appear in leaves. It is not known which plant viruses attack Salvia divinorum but many attack other sages.

Q. What is the best way to deal with pests?

A. Your garden hose is your best friend in fighting pests. Spray the leaves hard enough to blow the pests away but not hard enough to damage the leaves. Don't forget to spray the undersides of the leaves too. If the hose method does not do the trick then more specific methods will be needed. Aphids and scale insects can

be removed with a cotton swab dipped in isopropyl (rubbing) alcohol. Slugs can be kept away by growing in pots on a raised deck or palette. Beer can also be used to attract and drown slugs. Set a saucer of beer in a slight depression in the ground; the surface of the saucer should be flush with the soil so slugs can get in. Slugs and snail are said to be repelled by copper surfaces. Copper foil strips can be placed as a protective barrier on the soil surface around plants. Keep them a distance away from the plants. Do not let the copper touch the plants as it may kill them. Snail pellets (effective against both snails and slugs) are available from garden stores. They are poisonous. Spider mites can be controlled by dissolving Castile soap in water and spraying the leaves, including the underside. Repeat at two week intervals for three applications. Caution: there have been reports of soap damaging leaves. Using a garden hose outdoors, or a mister indoors, to spray both tops and bottoms of the leaves may be able to control spider mites without using soap.

Q. How can I propagate Salvia?

A. Salvia divinorum is propagated by cuttings, not by seed (except very rarely). Cuttings must be rooted either in water or directly in soil. Here's how:

1. Rooting in water: Salvia can be rooted simply much like the common ornamental Coleus (they are closely related). Cut off a branch (4 to 8 inches long) bearing some leaves. Immediately place it in about 1.5 inches of water in a small water glass. Only one cutting is to be put in each glass, so if rot develops in one cutting it cannot spread to another.

It is best if the branch is cut back to just below a node since nodes are the places from which new roots are most likely to develop. While it is not necessary to cut make the cut here, doing so has the advantage that there will be no stem material dangling in the water below the node. This is important as the cut stem end is more likely to start to rot than is a node.

Make sure the cutting is made with clean shears or knife so the cut stem does not get attacked by microorganisms that cause stem rot. Cut off all the large leaves, but leave a few small leaves. Place a clear glass jar (or clear plastic bag) upside down over the plant to serve as a humidity tent. Place where it will get some sunlight. Change the water daily. It may be a good idea to use cooled boiled water. If your water is chlorinated boiling will drive off chlorine. Non-chlorinated water may be contaminated with plant pathogens, but boiling should kill these. Rooting in water this way is successful about 3/4 of the time (the rest of the time stem rot occurs and kills the cutting).

In two weeks roots will start to develop. When they are about 1/2 to 1 inch long transplant to potting soil in a well-drained pot. Continue to cover with a clear glass jar or clear plastic bag to serve as a humidity tent until the plant appears vigorous.

2. Rooting in Soil: Salvia can be rooted directly in soil. This method, a modification of the one posted to the list by Todd Pisek, works quite well. Materials needed: potting soil, two disposable plastic cups, some Rootone powder (this is a rooting hormone mixture that also contains a fungicide and is available at any nursery), a 1 gallon Baggie™ brand storage bag, and a rubber band. Have water handy. Method: Punch some small holes in one of the cups for drainage. Fill the cup 1/3 the way up with potting soil. Fill the cup another 1/3 with soil. Using a pencil or a finger make a hole in the soil about 2 inches deep. The soil is now ready for your cutting. You must now prepare the cutting. With a clean shears cut off a length of stem from a healthy plant. Leave a few leaves (small ones) on top. Harvest the larger leaves from the cut-off stem. Immediately after cutting the

stem, place it in clean water. Cut it back to just below a node, as roots will develop from the node. Keep the cut surface wet. Place the cut surface at about 1 inch above the cut into rooting powder. Shake off the excess. Rooting powder is somewhat toxic, so wash your hands after handling it. Place the powder-coated cutting in the hole in the soil. Gently push the soil around the cutting, holding it in place and filling in the hole. Water the planted cutting until some water runs out the drainage holes. Place the cup with the plant in it into the second plastic cup (which is there to catch any runoff water). You may want to put a small piece of wood or plastic in the outer cup to act as a spacer thereby allowing enough space for excess water to drain. Place a 1 gallon clear plastic bag over the rooted cutting, using a rubber band to hold it in place. The rubber band should be outside the bag and the bag outside both cups. The Rubber band holds the bag against the cups. As the plastic bag acts to conserve moisture frequent watering is not required. After several weeks you can transplant the now-rooted plant to a larger pot.

Q. Can I buy Salvia Rootings anywhere?

A. Yes - email [TheseDrugs.Com](mailto:TheseDrugs.Com) for a pricelist

#### VIII. SALVIA DIVINORUM'S INTERESTING RELATIVES

Q. Are there other psychopharmacologically active Salvia species?

A. Yes. It appears that number of different Salvia species have different forms of psychoactivity. In addition some other members of the mint family (to which genus Salvia belongs) are psychoactive ('psychoactive' means that a substance effects mood, alertness, thinking, emotion, or perception, most psychoactive substances are not hallucinogenic), for example there is a Central Asian mint known as 'intoxicating mint' (*Lagochiles inebriens*) whose leaves are reportedly toasted and then brewed into a sedative tea.

- There is an unclassified Salvia species called "Xiwit" by the Nahuatl people of Sierra de Puebla, who use it as a dream inducer. It apparently is not *S. divinorum*.
- The many strains of the common cooking sage *S. officinalis* contain thujone which (along with alcohol) is the main ingredient that gives absinthe its characteristic psychoactivity. Thujone (also found in wormwood and juniper) is believed by some to cause brain damage. Best to use cooking sage as a condiment --- but not as a drug.
- Another quite different Salvia species of great interest is *S. splendens*, frequently grown for its showy flowers. Claude Rifat and Kevin Brunelle were the first to post on its alleged psychoactivity. Other list members subsequently reported psychoactivity of a tranquilizing or sedative type if it is either smoked or taken by the chewed/sublingual route. Both leaves and flowers have been reported to exhibit this tranquilizing activity. However its purported psychoactivity has been called into question and may turn out to be an example of placebo effect. A double blind placebo controlled study of *S. splendens* was conducted by Daniel Siebert using as subjects volunteers from the Salvia e-mail list. Analysis of the results indicated there was no statistically significant difference between the mental effects of the placebo herb (*Viola odorata*) and of *S. splendens*. This held true regardless of whether the herbs were taken sublingually, or smoked. Although 'lack of evidence of difference' is NOT the same as 'evidence of lack of difference', at this point, the burden of scientific proof is on anyone claiming that *S. splendens* is more psychoactive than placebo.

## IX. SALVIA AS AN ENTHEOGEN

Q. I have seen Salvia referred to as an 'entheogen'. What's that?

A. The word comes from the Greek, loosely translated as "making possible (contact with) the divine within (oneself)". Drugs (and drug plants) which can transport their user to mystical states of consciousness are often called entheogens.. More properly entheogen refers to a type of drug usage, not a type of drug. Salvia CAN be used as an entheogen. It is used as such when taken as part of a serious spiritual quest; but most 'Western' Salvia usage would not qualify as entheogenic. The issue of the spiritual/religious use of Salvia has been a hotly debated on in the Salvia e-mail list --- to say the least! Perhaps one of the few statements that most list members can agree upon regarding entheogenic use of Salvia is "Some people take Salvia with the intent of having a spiritual or religious experience and claim to be able to achieve one from it". Beyond that the issue gets extremely controversial dealing with such questions as what are true religious beliefs, the nature of: God,/Goddess, gods, spirits, void, consciousness, the soul, proper methods of meditation, spirituality etc. These are questions about which no consensus is possible.

## X. ABOUT SALVINORIN

Q. What's in Salvia that is so strong? Is it an alkaloid?

A. Salvia contains a substance called salvinorin-A. Salvinorin-A is the most potent naturally occurring vision inducer. Only LSD is potent at a smaller dose and LSD itself is not present in nature (although related but less potent lysergic acid amides are present in plants like morning glories). Salvinorin-A is not an alkaloid as its molecule contains only carbon, hydrogen and oxygen atoms. Technically it is a neoclerodane diterpenoid.

Q. Just how strong is it?

A. When vaporized and inhaled, doses of about 250 micrograms (that is 250 millionths of a gram) can have threshold effects and doses of 1 milligram will have extreme effects. Sensitivity varies greatly from person to person. Salvinorin is most effective when inhaled as smoke or vapor and least effective on a milligram basis when swallowed.

Q. Can salvinorin-A be used safely?

A. The primary danger in using refined salvinorin-A is overdose. It can only be used safely if the dose has been measured precisely. It is active in extremely minute quantities - so small in fact that a dose could easily fit on the head of a pin. Quantities this small can only be accurately measured using an analytical balance. Such weighing equipment usually costs two or three thousand dollars. NEVER ESTIMATE A DOSE OF SALVINORIN-A VISUALLY. IT SHOULD ALWAYS BE WEIGHED. Don't experiment with this material unless you are 100% certain that the dose has been measured accurately.

Q. Is it possible to estimate salvinorin content of leaves without having an organic chemistry lab at one's disposal?

A. Yes it can be done in a crude fashion. If you have a gram scale weigh the material and assume that there is APPROXIMATELY 3 mg salvinorin per gram of ordinary (unenhanced) dried leaf. If you lack a gram scale (it would be a good idea to buy one) you could

use volume measure and assume 1.37 G of powdered leaf per level teaspoon.

Roughly (but only roughly) this gives:

1 level tsp. dried leaf powder = about 4 mg salvinorin

1/2 level tsp. dried leaf powder = about 2 mg salvinorin

1/4 level tsp. dried leaf powder = about 1 mg salvinorin

1/8 level tsp. dried leaf powder = about 1/2 mg salvinorin

These figures are based on a weighing of powdered leaves which gave a reading of 1.37 grams per tsp. and on an estimated salvinorin content of 3 mg salvinorin per gram of dried leaf. This estimate is consistent with the comment of Leander Valdes III that based on his research he "would guess the salvinorin A content in dried leaves to be at least 2.5 - 3.0 mg/g and possibly higher." These figures are not exact - they will depend on packing density. Also, leaf quality and salvinorin concentration will vary. Leaf samples analyzed by John Gruber ranged from 0.86 mg - 3.94 mg salvinorin per gram of dried leaf with an average concentration of 2.45 mg per gram.

Q. How can I make salvinorin?

A. You can't. Salvinorin has not been synthesized yet and synthesis would be an extremely difficult if not impossible undertaking for even the most skilled chemist.

Q. How can I extract it?

A. Extracting pure salvinorin is not a task to be undertaken in your home. If you are a reasonably skilled organic chemist and have access to an organic chemistry lab and fairly sophisticated equipment it is possible to extract pure salvinorin from dried leaves. If you intend to use it it will be necessary to weigh out dosage very precisely. Ordinary balances are not accurate enough for this task. The accuracy of the balances used should be to within 10 micrograms (that's micrograms not milligrams) WARNING: Attempts to extract salvinorin by amateurs are fraught with danger including solvent toxicity, fire, explosion and overdosing. This FAQ will not give recipes telling how to extract salvinorin; but if you are willing to study source material the procedures are published in the scientific literature.

If you want to learn about salvinorin, its effects and its chemistry a good place to start is: J Psychoactive Drugs 1994 Jul;26(3):277-283 Salvia divinorum and the unique diterpene hallucinogen, Salvinorin (divinorin) A. Valdes LJ 3rd.

also see these:

Siebert DJ. 1994. Salvia divinorum and salvinorin A: new pharmacologic findings. Journal of Ethnopharmacology. June;43(1):53-56.

Ortega, A. et al. 1982. Salvinorin, a new trans-neoclerodane diterpene from Salvia divinorum (Labiatae). Journal of the Chemical Society Perkins Transactions. I 1982: 2505-2508.

Valdés III, L.J. et al. 1984. Divinorin A, a psychotropic terpenoid, and divinorin B from the hallucinogenic Mexican mint Salvia divinorum. Journal of Organic Chemistry. 49: 4716-4720.

Q. How does salvinorin work in the brain?

A. Nobody knows.

Q. In what parts of the brain does it act?

A. This is not known for sure but from the subjective and behavioral effects it can be surmised that salvinorin is almost certainly affecting the limbic system, and may be affecting somatosensory (parietal lobe), cerebellar and vestibular function as well.

Q. Does it act at any receptors where other drugs act?

A. In 1993, Daniel Siebert sent a sample of salvinorin-A to Dr. Dave Nichols at Purdue University, USA. Dr. Nichols was involved in an NIMH funded research program, which enabled him to have the material exhaustively screened by the

commercial bio-receptor screening service, NovaScreen™. The screening results showed no significant competitive inhibition of reference target compounds at any of the 40 receptor sites tested and exhibited no inhibitory effect on MAO-A or MAO-B. The receptor sites tested included those effected by most other major psychoactive drugs. (Siebert, D.J. 1994. Salvia divinorum and salvinorin A: New pharmacologic findings. Journal of Ethnopharmacology. 43: 53-56.)

Some people claim that the effects of low doses of salvinorin are similar to Cannabis and have suggested the possibility that like THC, salvinorin-A might bind to the anandamide receptor site (CB1). This site had not been looked at in the NovaScreen™ study, so in 1998, Siebert submitted a sample of salvinorin-A to Dr. Raphael Mechoulam at the Hebraic University, Israel. Dr Mechoulam is one of the world's foremost authorities on the chemistry of Cannabis. He tested the sample for activity at this site and found it to be inactive.

Recently, in April of 1998, Siebert sent a sample to Dr. Jace Callaway at Kuopio University, Finland. Dr. Callaway tested both the pure salvinorin-A and a crude methanol extract of the leaves for binding at the MK-801 site. This also came up negative.

As of now, the mechanism of action for salvinorin-A is still unknown. Discovering which receptor site(s) it binds to will be an important step toward developing an understanding of how this substance works in the brain. Once this is know, it will be possible to look for endogenous ligands for these receptors, so that we can understand in what way salvinorin-A may relate to naturally occurring human biochemistry. It is possible that salvinorin-A does not act directly on any receptor site, but rather acts to release some endogenous neurotransmitter from synaptic storage vesicles.

#### XI. DANGERS AND PRECAUTIONS

Q. Does Salvia cause a hangover? Are there any after-effects?

A. Most people do not feel unpleasantly hungover after using Salvia. A few people do report a mild headache, bronchial irritation, insomnia or irritability. These symptoms seem to be reported more often by smokers than by quid chewers, and perhaps might be due to some combustion products, such as carbon monoxide rather than to salvinorin.

Q. For how long after using Salvia is a person's ability to drive impaired?

A. Most people feel they can drive safely by 3 hours after smoking Salvia, or 4 hours after chewing it. Many believe they can safely drive even sooner than this. The duration of impairment after drinking the infusion might be up to 8 hours. But studies of the duration of impairment, after taking Salvia by any route, have never been done. Therefore it is a good idea to be extra careful when driving for a couple of days after using Salvia.

Q. Does Salvia cause brain damage?

A. Not so far as is known. However salvinorin has some phenomenological similarities to dissociatives such as PCP and ketamine, and these dissociatives can cause brain damage (Olney's Lesions) if taken in very high dose. Therefore the possibility that salvinorin might cause brain damage if taken in excessive dosage cannot be completely discounted. However, there have been no reports of any brain damage from salvinorin in man or animals. For those chewing quids of Salvia leaves there would seem to be no danger of brain damage at all. Chewing leaves is the very safe traditional mode of use. For those vaporizing pure salvinorin in high dosage who knows? Vaporizing pure salvinorin makes possible dosages far in excess of that any traditional user has encountered, so the safety of traditional usage patterns cannot guarantee the safety of using pure salvinorin.

Q. Are there psychiatric dangers?

A. Probably there are for some individuals. Acutely, Salvia and salvinorin induce what could be termed a 'toxic psychosis' in other words one may see visions, hear voices, have bizarre thought patterns etc. This is normal when tripping. The acute effects of Salvia (both desirable and undesirable) wear off very quickly. However for some people the overwhelming strangeness of the Salvia experience (or perhaps some direct effect of salvinorin in the brain) can trigger panic attacks. Some individuals with schizophrenia or other psychotic disorders (even if in remission) might experience a Salvia induced relapse, or exacerbation of their condition. People with Borderline Personality Disorder even when not on any drug often depersonalize, self mutilate, make suicide gestures or attempts, commit antisocial acts, and get into fights. Individuals with Borderline Personality Disorder might become even more unstable when under the influence of Salvia. Although some depressives have reported that Salvia has lifted their depression, for others it may make a preexisting depression acutely worse. For such an individual there may be risk of suicide. However, no Salvia related suicides have been reported.

Q. Does Salvia cause any physical damage?

A. There are no known health problems from oral Salvia use. However, it is known that smoking tobacco is damaging to your lungs and may cause cancer, emphysema, bronchitis, stroke and cardiovascular disease. These toxic side-effects of tobacco smoking are not due mainly to nicotine but rather to combustion products (tars and carbon monoxide), which are present whenever any type of plant material (e.g. Salvia) is smoked. Common sense will tell you that smoking Salvia, or any material, can be bad for your health. It is not known if Salvia can cause birth defects, but it is prudent to assume that it could.

Q. Is Salvia addicting?

A. Although Salvia is not believed to be addicting, it should be borne in mind that some very habit forming drugs including tobacco, heroin, cocaine and benzodiazepines also were initially thought not to be addicting. No physical dependence on Salvia or salvinorin has been reported. The usual usage pattern is not one of daily use. Indeed such would be quite unusual. Withdrawal symptoms have not been reported. Compulsive use is not something that SALVIA list e-mail members or others are reporting. Episodes of excessive dosage have occurred, but such abuse is likely to have very unpleasant consequences (panic, injuries, fires, falls, severe social humiliation, etc.) and is unlikely to be repeated. It is quite unlikely that anyone using Salvia in the traditional fashion (by chewing quids of leaves occasionally) will become 'addicted'. Whether this freedom from addictive risk also holds for smoking leaves, smoking extract enriched leaves, vaporizing powdered leaves or vaporizing salvinorin is something only time will tell. Prudence and general health concerns would advise not inhaling Salvia smoke (or vapor) into your lungs often.

Q. Can you take a fatal overdose?

A. No case of fatal salvinorin poisoning has been reported. The human oral lethal dose is not known but is believed to be extremely high. Leander Valdes, III provided the following information for inclusion in this FAQ regarding acute toxicity studies in mice: "I tested Salvinorin A intraperitoneally in mice at very high doses and it appeared to be not very toxic. This was long before the compound was being taken orally and it was testing about as potent as mescaline in the assay I was using. In light of the extreme potency of the compound, I think it quite possible and probably very likely that it was not being well absorbed. I had it in a mix of corn oil, tween 80 (a fancy emulsifier) and water. Dissolving the compound in solvents such as ethanol, acetone or DMSO probably delivers quite a

bit more drug to the body (I didn't use them because I wanted an inactive vehicle). "

Swallowed salvinorin is not well absorbed. The chances of inadvertently swallowing a lethal overdose of an oral preparation of leaves, slurry or elixir are extremely low.

If salvinorin is inhaled as multiple inhalations of leaf smoke or vapor one could reasonably expect to pass out before he/she could take a lethal overdose. But significantly, nothing is known about the toxic effects of smoking truly massive 'single bolus' doses of pure salvinorin, such a practice might be quite dangerous, and should certainly be avoided.

Although fatal poisoning from *Salvia divinorum* appears to be very unlikely to occur; there is another type of lethal overdose --- one that kills not by poisoning but by impairing judgment and survival instincts and causing fatal injury. If you smoked salvinorin and then walked out of a ten story window you would be very dead indeed. That's why sitters are needed when smoking or vaporizing high doses.

Q. When do you need a sitter?

A. Having a sitter present is absolutely essential if you are taking doses on which you may freak out, become confused, physically injure yourself, fall, set your house on fire, or act in any way harmful to yourself or others. A sitter is needed whenever a user is new to *Salvia*, is experimenting with a more powerful preparation than he/she has used before, or is using a more powerful delivery system than previously. Having a congenial sensible sober sitter present is an absolute must if you are trying vaporization, smoking extract enhanced leaves, or using salvinorin. Although someone who is used to *Salvia* and is chewing a quid, or using honey/slurry, may often choose to do it alone, anyone trying vaporization, or experimenting with extracts or salvinorin, must have a sitter present. Smoking leaves usually falls in-between in terms of risk. Use your judgment. Many people have done so without a sitter but a sitter is a good idea.

Q. What should a sitter know?

A. Above all remember that no matter how crazy the tripper gets, *Salvia* trips are short lived. Within an hour (usually much less) the tripper will be back in consensus reality, behaving normally. It's very reassuring to hold onto this knowledge when things seem impossibly messy. It helps to have done *Salvia* yourself before sitting another person. Experience with classical psychedelics may not be that helpful. The sitter should know that *Salvia* is different from these especially in terms of dissociative effect. Touching to 'ground the tripper' works for some trippers on drugs like LSD but may be very threatening for someone on *Salvia*. If you plan on touching, clear it with the tripper before the trip starts. The sitter should realize that he/she has a primary role, a secondary role, and a tertiary role.

Q. What is the primary role?

A. The primary role is to keep the person tripping safe. and keep those around that person safe. This must take precedence over all else. The main dangers to be guarded against are physical, not emotional. Your primary job is 'guardian' not psychotherapist. Do not use physical force unless nothing else will do. Use of physical force may result in the tripper or you getting hurt. It is likely to be misinterpreted as an assault. Never let *Salvia* be used in settings in which firearms, knives or other potentially dangerous objects are present. Keep the tripper safe from falls, head banging, sharp objects, walking through windows, wandering out into the street, open flames, hot surfaces and breakable objects.

But let the tripper move about in a safe area. Do not grab or try to physically restrain the subject. Do redirect him or her. Speak softly. Take dangerous objects away. Use the minimum touching necessary (the confused subject may perceive your touching as an assault and react to the perceived danger). It is also the sitter's responsibility to handle unexpected intrusions of strangers and other awkward social situations. This may call for considerable creativity ;-).

Q. What is the secondary role?

A. To reassure and reorient. Often simple repeated explanations may help a frightened tripper, e.g. "You're safe, I won't let anything harm you." "You're just having a bad trip, you'll feel better in a few minutes." "Your name is (subject's name), I'm (state your name) I'm your (friend, lover, spouse etc.)" . If speech is not called for, be silent. Silence is often less threatening to the tripper than trying to decipher what a sitter is saying.

Q. What is the tertiary role?

A. To help the tripper later recall the trip. There are several techniques. Use a notebook and record all the tripper's odd behavior and utterances. Later you can ask the tripper "Do you remember standing on your head and talking about a purple potato?". That may jog his/her memory about what he experienced. Another technique, if the tripper is not too far gone to communicate during the trip, is to ask repeatedly "what are you experiencing now?" A notebook, or more conveniently a tape recorder, can be used to record responses.

Q. Any safety Do's and Don'ts?

A. Common sense guidelines are:

- Choose the time and place of your trip carefully. Privacy and safety are essential.
- Choose your dose and mode of delivery carefully.
- Lie down for the duration of the trip. You're pretty darn safe in bed if you're not smoking there.
- Have a sitter (this is especially important if you are new to Salvia, taking a high dose or using an efficient delivery system such as vaporization).
- As a general rule do not mix Salvia with any other other psychoactive substances. If you are quite experienced with Salvia ,and with the other substance, you might decide to ignore this advice at some point; but if you do so you are playing guinea pig. When you play guinea pig risks increase. If you decide to play guinea pig having a sitter present would be a wise precaution.
- If you are currently having mental health problems or have a history of same, don't take Salvia without first discussing it with your mental health practitioner.
- Don't give Salvia to minors, or to violent or unstable individuals.

## XII. LEGAL STATUS

Q. What is the legal status of Salvia?

A. The author of this FAQ is not an attorney and cannot render a legal opinion. If you have a question regarding the legal status of Salvia divinorum or salvinorin, you should consult an attorney knowledgeable about drug law. Salvinorin is not a scheduled (controlled) substance. At this time (early 2000) people are not being prosecuted for growing or using Salvia. It is being grown by commercial greenhouses and is sold as "incense" and "dye" and often labeled "not for human consumption". Live plants are readily available from commercial greenhouses. Drug laws are often ambiguous and 'elastic' in scope. It is possible that some prosecutor might decide to go after Salvia users or suppliers. It is quite possible that in the future some crime or disaster will be (fairly or unfairly) blamed on Salvia and that Salvia will then be declared a scheduled drug and its use made illegal.

Q. Any thoughts on how to prevent this?

A. Practice and encourage responsible use. Do not provide Salvia to minors or unstable individuals. Never use Salvia in settings in which firearms, knives or other potentially dangerous objects are present. Do not mix with alcohol. Never drive while under the influence of Salvia. Be extra careful of flames - candles, lighters, fire etc when using Salvia. Discourage mixing Salvia with other drugs. Encourage the practice of using sitters. Discourage use of pure salvinorin (except in research settings), vaporized extracts, vaporized leaves, and smoking of powerful extract enhanced leaves. Taking oral preparations and smoking unenhanced leaves are less likely to produce out of control behavior. Be careful about granting interviews. The press and media in general is often more interested in sensationalizing than in balanced factual reporting.

Q. Does Salvia divinorum show up on drug tests?

A: No. Salvia divinorum is a legal herb that does not lend itself to abuse. Therefore, there has been no incentive to develop tests for it. The active principal, salvinorin A, is not chemically similar to any illegal drug and will not produce a false-positive on drug tests that test for illegal drugs.

### XIII. PROCESSING PLANT MATERIAL

Q. How could I dry leaves?

A. There are several methods which all give good results.

Method 1.) "Nature's Bounty"

Wait till the leaves die or are shed. Gather them. Place them on a plate in a room with low humidity. Wait until they are dry then store. It is not known if naturally shed leaves are stronger or weaker than picked leaves. Advantage you won't be depriving your plants of leaves it needs. Disadvantage you will have to wait until the plant is ready to make a donation to your cause. Leaves may not be in prime condition

Method 2) "Salvia Tobacco"

List-member Michael Steinmetz recommends the following: Take big leaves and place one atop another (like stacking sheets of paper). Then cut through the pile making 1/2 cm. (1/4 inch) strips. Pile these on a plate into a heap. Turn them twice daily until they are dry but not crispy. The resulting 'tobacco' is said to give a smoother smoke than thoroughly dried leaves; however is possible that this slow partial drying results in weaker leaves that may not keep as long as thoroughly dried (crispy) leaves.

Method 3) "Food Dehydrator"

Dry in a food dehydrator. A Mr. Coffee® brand food dehydrator works very well. Drying is very fast and thorough. Dry until the entire leaves including the leaf stem are crispy. Your fingers can tell you when they are ready. Advantages: speed, thorough drying. and convenience. Disadvantages cost of buying a dehydrator.

Method 4). "Oven Method"

Place on an oven proof dish. Oven dry in an oven set at no more than 150 degrees F. Similar to method 3) although a little less convenient; however, more people have ovens than food dehydrators.

Method 5). "Calcium chloride Drying"

List-member "cystonic" recommends: Get Damp-rid (Calcium Chloride) refills and place sufficient amount in the bottom of a Tupperware container. Place a piece of

aluminum foil atop the CaCl<sub>2</sub>, and place leaves to be dried on top of foil. Curling edges is recommended as to avoid contact with the CaCl<sub>2</sub>. Seal container, and leaves will be dry in approx. 2 days Advantage very thorough drying. Disadvantages less convenient than other methods. Slow.

Q. How should I store dried leaves and how long will they last?

A. Place them in a sealed jar away from light. A clean glass canning jar works very well (1 quart Mason jar). Storing the jar inside a kitchen cabinet or medicine chest will keep it away from light. Stored this way leaves will keep their potency for many months or even years. Storing dry leaves in a sealed jar in a freezer may give even longer shelf life.

Q. I've heard talk of Salvia extracts and I'm confused. The term seems to be used in various ways.

A. It is confusing because the term is often used to refer to various preparations derived from Salvia. Technically, in pharmacy and medicine the dictionary definition of an extract is: a solid preparation obtained by evaporating a solution of a drug. There is also such a thing as a fluid extract (or tincture), which is a concentrated liquid preparation containing a definite proportion of the active principles of a medicinal substance. The solvent usually used is ethyl alcohol or a mixture of ethyl alcohol and water. However various Salvia preparations are often referred to (loosely) as extracts.

Q. What are the advantages of using extracts?.

A. Extracts allow one to explore deeper levels than are available using plain leaf. This is particularly important for people who find that they are not very sensitive to *S. divinorum*. Another advantage to these products is that they are far easier to consume, since less material needs to be ingested or smoked.

Q. How safe are extracts?.

A. They are safe if prepared properly and used wisely. It is highly recommended that you have a sitter present when experimenting with any enhanced or concentrated form of *Salvia divinorum*. Poorly manufactured extracts, or fortified leaves may contain traces of toxic solvents or other residues. Unless standardized, the strength of these preparations may vary. Apart from possible solvent toxicity, the main danger is from fires, falls, burns and confused behavior resulting in injury. Extract can be quite powerful and must be used carefully. I generally recommend that people avoid using products containing more than 15 mg. salvinorin-A per gram of leaf (i.e. products stronger than 6X) unless the dose has been weighed precisely. Be sure that you know what you are doing before experimenting with extracts, fortified leaves, and standardized salvinorin-A enhanced leaf.

Q. What are these so called 'extracts'? And what are they used for?

A. They include:

- Crude extract fortified Salvia leaves. When you hear of '5X extract', fortified leaf material is what is being referred to. An extract of Salvia is made using a solvent such as ethanol or acetone. The solvent, which now contains dissolved extracted material, is evaporated onto Salvia leaves, where the dissolved material is deposited. This final material, whose salvinorin content has been increased by this procedure, is often termed 'extract', although technically it should be called 'extract fortified leaves'. Fortified leaves are usually smoked, although they may be active sublingually as well. The most common product currently on the market is called "5X". It is prepared by adding the crude extract obtained from 4 units of leaf back onto 1 unit of leaf. The resulting product is thus 5 times as potent as the leaves used to produce it. This type of product is somewhat variable in actual potency, because the potency of the leaves used to produce it varies. It has a

somewhat sticky feel and inferior burning characteristics due to the impure, tar-like quality of the extract. A 5X 'extract' is a final product that is 5 times as strong as the original untreated leaves. Extract fortified leaves of various strengths are available: 5X, 6X, 10X, 15X, etc.

- Standardized Salvinorin-A Enhanced Leaf. This material contains a specific concentration of pure salvinorin-A deposited on a small quantity of leaf material.
  - 1.) 'Standard strength': This has been standardized to contain exactly 15 mg salvinorin-A per gram of leaf. This is roughly six times the average natural leaf concentration. One gram is sufficient for 15 - 30 uses.
  - 2.) 'Extra strength': This is standardized to contain exactly 1 mg salvinorin-A per 25 mg of leaf (this is equivalent to 40 mg salvinorin-A per gram of leaf). Because of its strength, it should only be used if the individual doses have been accurately weighed. 25 mg. is sufficient for 1 - 2 uses for a person of average sensitivity.
- Salvia fluid extracts. These are usually in the form of various Salvia elixirs -- sweetened alcoholic fluid extracts. Instructions for making them are included in the FAQ.
- Soft extracts. This is a type of true extract. It is a semisolid material obtained by extracting Salvia divinorum leaf with a solvent and then evaporating the solvent completely. The resulting preparation is a waxy or tarry product that is not sufficiently hard to be able to be ground up into a powder. The soft extract (which may actually be fairly hard like hard wax), is not deposited on leaves. This material is quite suitable for sublingual use as a substitute for quid. The effects are similar to quid but probably will be stronger, may come on a little slower, and may last somewhat longer. The advantage over quid chewing is user comfort, as a far smaller amount of material must be put into ones mouth. Since the material is very concentrated (1/4 tsp. will produce a strong trip in many people) a large enough dose can be taken to guarantee a strong trip without the gagging that may accompany use of large quids. For example: if 1/4 tsp. is ineffective, one could take 1/2 tsp. without gagging. Basic soft extracts but can easily be prepared in a kitchen. A method of preparation is described below.
- Hard extracts. These can be prepared by a more complicated use of two solvents in a separatory funnel, one to remove the oils and waxes but leave the salvinorin and the other to dissolve the salvinorin. A hard extract could be ground and used as a powder. No Salvia divinorum hard extracts are being sold. Such a hard extract might be suitable for vaporization or use as a nasal snuff. Instructions for making a hard extract are not included in the FAQ.

Q. I'm not a first time user. Smoking regular leaves doesn't have much effect on me. Despite your warnings, I'd like to be able to make extract enhanced leaves. How can I do that?

A. If you cannot achieve sufficient effect with unenhanced leaves you may wish to try extract enhanced leaves; however you should have a sitter present when you try smoking these. Here is one way to make a 6X enhancement. Note: attempting to make enhancements much stronger than this will leave you with a sticky gummy mess.

Method: Take your dried leaf material and divide it into two portions one of which weighs 5 times as much as the other. Call the smaller portion B and the larger portion A. For this example we will assume you want to make about 5 G of 6X extract enhanced leaves. You will need to start with 30 G of leaf powder. You would divide the 30 G into a 5 G sample and a 25 G sample.

You will need a suitable solvent for dissolving salvinorin-A. The solvent should not

contain any non-volatile impurities. Several possibilities exist: ethanol, methylene chloride, 91% isopropyl alcohol, acetone, etc. If using ethanol. It is best to use either denatured ethanol or absolute alcohol. Drinking alcohol of less than 190 proof is a poor solvent for salvinorin because of its water content. Absolute alcohol is pure ethanol, containing no more than 1% water. Denatured ethanol, is ethanol that has been rendered unsuitable for human consumption by the addition of a small percentage of a poisonous substance such as methanol or isopropyl alcohol. It is usually much less expensive than absolute alcohol or high proof drinking alcohol. When obtaining denatured alcohol, look for the kind that is denatured with isopropyl alcohol rather than methanol. It is much less toxic and therefore safer to handle. Never consume an extract that has been prepared with denatured alcohol until ALL traces of alcohol have been thoroughly evaporated. The extraction below can be done using any of the above solvents. Ethanol is the least toxic choice, and acetone is considered only slightly toxic. Chloroform is a known carcinogen and should be avoided. The extraction can be done at room temperature. CAUTION: BOTH ACETONE, AND ALL THE TYPES OF ALCOHOL MENTIONED, ARE HIGHLY FLAMMABLE. If working indoors a spark proof fume hood should be used. Avoid static sparks from carpets and use of flame. To avoid toxicity and fire, this extraction is best done outdoors away from all sparks and sources of flame.

Make sure the solvent used is of high purity and will evaporate completely (hardware store solvents might contain impurities). To test for non-volatile impurities, evaporate a drop of the solvent on a very clean piece of clear glass. After the solvent is evaporated, hold the glass over a black surface and look for any white deposits on the glass, then hold it over a white surface and look for any dark deposits. Also pick up the glass and look through it to see if there is any oily residue. This is like checking ones eyeglasses to see if they are clean. Any residual deposits on the glass indicate that the solvent leaves residue i.e. that it is impure. If it leaves no residue or stain and no residual odor or taste it is unlikely that it will leave any impurities in your extract enhanced leaves, provided that it is thoroughly evaporated from them prior to use.

Powder the 25 G sample and place it into a glass mason jar that has a screw top (make sure the seal on the jar top is not soluble in the solvent). Add at least 125 ml (1/2 cup) of solvent. Screw on the top. Shake well for 2 minutes. Let sit for a minimum of 24 hours (several days might yield a more complete extraction). Shake periodically (at least 5 or 6 times over the course of the extraction period). Then pour the entire contents of the jar through a fine mesh wire strainer (a tea strainer will do). Save all the solvent. With the back of a spoon squeeze the stuff in the strainer dry. Save the solvent that you squeeze out. Re-extract the filtered leaf material in an addition 125 ml fresh solvent. As before, filter and squeeze the leaves dry, saving the solvent squeezed out. Pool all the solvent that has been in contact with the leaf material. Discard the spent leaves. Place the solvent in a broad, shallow container such as a pan or baking sheet. The container should be made of glass, stainless steel or Teflon lined steel. Cover with a wire strainer or screen and allow to evaporate out of doors. If this is impractical evaporation can be done indoors next to an exhaust fan or under a fume hood (open windows to insure good ventilation). Be careful though if the exhaust fan motor emits electrical sparks it may ignite the vapors. If doing indoor evaporation choose a solvent low in toxicity. When little solvent is left, add portion B of the leaves. Stir with a wooden utensil. Spread out thinly and allow to continue to air dry. The leaves will absorb the residual liquid. Allow to air dry thoroughly until free of all solvent odor and if possible until dry to the touch. Break up any clumps. Finally, the extract should be spread out thinly on an oven proof plate and placed in a 150 to 170 degree F oven for an hour. Exposure to this temperature will not destroy salvinorin but should remove any residual traces of solvent. The oven

door should be cracked open an inch during this final 'desolventing'. Store in a sealed jar. Test by opening the jar after a day and smelling. If a solvent odor is present there is still residual solvent in the material and further drying is required prior to use.

You now have your smoking mixture. This is a 6X enhancement i.e. theoretically the leaf material is now 6 times as strong as unenhanced leaf material, so smoke it with great care, and have a sitter present. This stuff can be very strong.

Q. I don't want to chew quid or to smoke, how can a soft extract for sublingual use be made?

A. Strong preparations have been made using ethanol and using 91% isopropyl alcohol. Please note there have been no studies of the safety of sublingual soft extract. It is theoretically possible that the material might contain some harmful substance, either extracted from the plant or produced by reaction with solvent or in the oven heating phase of the preparation. Users have not reported side-effects from sublingual soft-extract but long term dangers (if any) are unknown. Since this material is waxy, it might not be a good idea to smoke it because one might be inhaling wax vapors into ones lungs. Various solvents can be used to make a soft extract. Extracts made using both ethanol and 91% isopropyl alcohol have proven effective.

The following recipe worked to prepare an isopropyl alcohol soft extract. The final product was a greenish black waxy substance about the consistency of beeswax. It looked like tar but had a tealike aroma and slightly bitter taste. It proved highly effective sublingually in a dose of 1/4 tsp.

1. Grind up a large amount of dried Salvia leaves. Grind them finely. You need not weigh the starting material. The more leaf material you start with the more soft extract you will get. So use as much as you can spare.
2. Place the ground up leaves in a polyethylene container with a well sealing polyethylene top. Polyethylene will not dissolve in isopropyl alcohol. Neither will glass but the rubber seals on glass jar lids may, so stick to polyethylene containers.
3. Add enough 91% isopropyl alcohol to cover the leaf material twice over. 91% isopropyl alcohol is available in pharmacies over the counter. It is used by some diabetics to sterilize reusable insulin syringes, and is pharmaceutical grade (very pure).
4. Shake the alcohol leaf powder mixture twice daily for at least a couple of days. The longer you do this the more complete the extraction will be. Leaving the material sit in a closet for weeks or even months will not hurt the final product. But two days with good shaking may be all that is needed.
5. If all the leaf material has not settled to the bottom of the container you will have to filter. Filtration is possible using cheese cloth for preliminary filtration followed by filtering through a coffee filter. If you left the container sit long enough you can skip the filtration step as all the leaf material will have sedimented out. If it has just decant the alcohol which was now greenish black in color.
6. Pout the more or less particle free green black isopropyl alcohol crude fluid extract into a Pyrex baking dish.
7. If weather permits evaporate it outdoors. Just cover with a clean aluminum screen and let it evaporate at ambient temperature. If indoor evaporation is necessary set it next to an exhaust fan for 48 hours.
8. Once all the alcohol has evaporated the mixture will no longer smell like rubbing alcohol but may contain water and be slimy. Expect a wet slimy

greenish-black material to be coating the Pyrex baking dish. Once it no longer smells of alcohol place the pan in a 150 degree oven for a couple of hours. You may want to crack the oven open about an inch to let any residual alcohol vapors escape.

9. At this point the material in the pan should be a crust of film coating the pan. Open the oven and remove the pan from the oven and let it cool some but not down to room temperature.
10. With a plastic spatula scrape the black tar-like material off. There will be a lot of scraping. The scrapings are the stuff you want so don't throw them out! Place these scrapings into a plastic bag. When there is no more that can be scraped out of the pan take the scrapings in your hands (make sure they are clean first) and using your fingers roll the scrapings into a ball. Your fingers will become coated with the tarry soft extract.
11. Place the ball back into the plastic bag and let it cool to room temperature. As it does it will become stiffer.
12. The material can be stored at room temperature in a sealed plastic bag. It will probably keep a very long time.
13. To measure a dose, scoop out a tiny piece with a small measuring spoon e.g. 1./4 tsp size. Fill the measuring spoon with the extract. Since this is strong stuff and 1/4 tsp. is a large dose so you may want to use an 1/8 tsp. measure, or alternatively measure 1/4 tsp. and then cut than in half to get approximately 1/8 tsp.
14. To use, place the dose under your tongue. Lie down in a quiet place with dim lighting. Chew the waxy material occasionally, parking it under your tongue between chews. Keep the Saliva formed in your mouth so salvinorin can be absorbed from it. Swallowing the material won't harm you but swallowed salvinorin is not effective. Once you want to come down, spit out the material remaining in your mouth and brush your teeth to rid you mouth of the remaining extract. Expect a strong trip that develops slowly.

#### XIV. POSSIBLE MEDICAL USES

Q. Are there medical or psychiatric uses?

A. Traditional Mazatec healers have used *Salvia divinorum* to treat medical and psychiatric conditions conceptualized according to their traditional framework. Some of the conditions for which they use the herb are easily recognizable to Western medical practitioners (e.g colds, sore throats, constipation and diarrhea) and some are not, e.g. 'fat lambs belly' which is said to be due to a 'stone' put in the victims belly by means of evil witchcraft.

Some alternative healers and herbalists are exploring possible uses for *Salvia*. The problems in objectively evaluating such efforts and 'sorting the wheat from the chaff' are considerable.

There are no accepted uses for *Salvia divinorum* in standard medical practice at this time. A medical exploration of some possible uses suggested by Mazatec healing practice is in order in such areas as cough suppression (use to treat colds), and treatment of congestive heart failure and ascites (is 'fat lamb's belly' ascites?). Some other areas for exploration include *Salvia* aided psychotherapy (there is anecdotal material supporting its usefulness in resolving pathological grief), use of salvinorin as a brief acting general or dissociative anesthetic agent, use to provide pain relief, use in easing both the physical and mental suffering of terminal patients as part of hospice care, and a possible antidepressant effect.

If a specific salvinorin receptor were discovered this would be of great interest to psychopharmacology and neuroscience.

Q. Where can I learn about the history of *Salvia divinorum* and salvinorin?

A. Checking the sites listed above and the references cited below would be a good beginning, if you're interested in finding out even more consult a good librarian:

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Valdés III, L.J. et al. 1983. Ethnopharmacology of Ska Maria Pastora (*Salvia divinorum*, Epling and Jativa-M.). *Journal of Ethnopharmacology*. 7:287-312.

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