

A SMOKE POLE SAGA: PART I - THE RECIPE

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"The thing about black powder is the guys who do it have a bad smoking habit." - Wise words from Vern, one of my local range volunteers.



Have you considered hunting with a muzzleloader but haven't made the leap? Perhaps, you already do but wish your muzzleloader was more accurate. I have good news for you, friend. Herein is a recipe for muzzleloading success I have concocted through research and extensive testing with my own modern inline muzzleloader. That's right, we're cooking powder for accuracy!

You can think of it as poor man's handloading. With many states allowing the use of muzzleloaders during rifle season, a properly tuned smoke pole can be a wise investment for new hunters hoping to stretch their dollar and get the most "bang" for their (12 point) "buck".

There are two primary premises that serve as the foundation for the following methodology.

Premises:

- 1) Consistency is crucial [1]:
 - From how powder is measured...
 - To how the sabot and bullet are started in the barrel...
 - To how the bullet is seated against the powder charge [3]

- 2) The best we can generally hope for is 1 follow up shot if needed, so we will tune our rifles accordingly

The first premise applies for shooting any firearm. Marksmen can't isolate and correct their errors if their shooting routines aren't consistent. The second premise is derived from the slow-to-reload nature of muzzleloaders. You would be lucky to squeeze off an immediate follow up shot in a real world hunting scenario, but we will tune our rifles as if it will happen.

To begin, you'll need the proper equipment and supplies.

Ingredients:

- Muzzleloader
- Scope bases and rings
- Scope
- Primers or percussion caps specific to your rifle
- Powder (black, substitute, or smokeless)
- Sabots
- Bullets
- Stable shooting rest(s)

The instructions laid out below are the same no matter what equipment you have. However, I recommend a modern inline muzzleloader, variable magnification scope [3], black powder substitute, and sabots with modern projectiles. The makes and models of the above items are yours to choose. High dollar doesn't necessarily mean high performance, either. Put yourself together an outfit that fits your budget and feature preferences [5], and I'm confident you'll be satisfied with the end product.

Now, let's move on to the meat of this article with the directions.

Preparation:

- 1) We'll assume your scope is mounted and you're on paper at 100 yards with a light powder charge (70-80 grains for Pyrodex). How you get there is not important, though I recommend your bullets be impacting toward the bottom of the paper with the left and right adjustment set for dead center.

Increasing the powder charge will likely result in a higher point of impact (POI), and we want to fidget as little as possible with the scope adjustments from this point forward.

- 2) Super clean your barrel and breech plug/primer nipple.
- 3) Post up two targets at 100 yards. One will serve as your "clean barrel" group. The second will serve as your "dirty barrel/follow up shot" group [1].
- 4) Shoot your dirty barrel shot immediately after the clean barrel shot with a quick, but not rushed, reload. This will simulate a follow up shot with a fouled and heated barrel as closely as possible.
- 5) After each pair of shots you will super clean your barrel and breech plug/primer nipple again [1,3]. Continue until you have a 3 shot group on each target.
- 6) Repeat the above process until you have both clean and dirty barrel groups for all load combinations (primer/powder/sabot/bullet) you want to try [2].
- 7) Now, compare each load combination. What you're looking for is two things. First, we of course want to find the clean barrel groups for the two or three loads that are the tightest and most consistent. Where they hit the target is not important. We're simply identifying which loads are the most precise.

Second, we want to consider where the average POI from dirty barrel groups compares to the average POI in their respective clean barrel counterparts. What we're looking for is the combination that has minimal deviation in average POI from the clean barrel group to its dirty barrel counterpart. This is because it indicates a follow up shot would not require an altered point of aim (POA) due to the barrel fouling and heating up.

The best load in your muzzleloader will often be middle of the road (90-120 grains) in terms of powder charge. We're simply experimenting to identify which load produces the barrel harmonics that perform best in your particular rifle. Magnum loads only deliver the projectile a couple hundred feet per second faster - nothing to get excited about. Precision and consistency between groups

should always have preference over a slightly flatter trajectory [4,1,3].

- 8) After selecting the load combination that shoots best in your gun you'll want to see how it shoots 3 and even 4 shots in a row without cleaning between them. Take special note of these changes: 1) difficulty in seating the bullets with each successive shot; 2) how it groups as a whole; 3) how much shots 3 and 4 deviated from 1 and 2; and 4) how much extra cleaning is required.
- 9) Remove the scope, if necessary, in order to properly zero your iron sights. (We don't complete the load testing with the iron sights because they simply won't match the same precision as a scope while aiming.) Take advantage of your time at the range by ensuring your irons are tuned in should you be forced to use them while in the field. You never know when you might accidentally knock your scope out of whack.
- 10) Next, mount your scope back on and re-zero it to your desired POI using the final load combination you selected.

11) Finally, shoot your muzzleloader in 25 yard increments from 50 - 200 yards in order to create a personalized D.O.P.E. (data observed from previous engagements) chart for your gun. You can use a chronograph and online ballistics calculator to compute your wind drifts, but the emphasis here is to at least confirm your bullet's vertical trajectory through practice in real world conditions.

Side Dish - The Cleaning Process:

The cleaning process often takes me 15 minutes to complete while taking my time. It gives me time to clear my head before the next pair of shots, rest my eyes and shoulder, and let the barrel completely cool down.

My recommend cleaning supplies include:

- Cleaning rods and bore brush
- Cleaning patches/cotton swabs
- Ammonia (glass cleaner)
- Black powder solvent
- Bendable pipe cleaners
- Metal pick
- Copper bristle tooth brush
- Grease

I exclusively use the ammonia while at the range because it is surprisingly effective at removing barrel fouling, doesn't create a sticky mess, and cleans my hands of oils and grease that come with handling muzzleloaders and the firing components.



Soak a large number of cleaning patches in the ammonia in a sealable baggie. The patches should be thoroughly wetted but not drip when pulled out for use. I found that wrapping the bore brush and scrubbing with 7 patches (using both sides of each patch) creates a scouring-wiping action that results in a nearly perfectly clean barrel. The ammonia evaporates from the barrel and improves the cool down time as well. Pay particular attention to the crust ring that forms where your bullet is seated against the powder as it usually requires a little extra scrubbing.

I recommend you use a dedicated black powder solvent for times when you know you'll be storing your rifle for an extended period without shooting it.

Lastly, you would be wise to apply a thin layer of grease to the threads of your breech plug/primer nipple. It will go a long ways to prevent seizing. The type of grease isn't too important. I found generic auto grease serves my needs just fine.

Finished Product:

At the end of the day we must remember modern muzzleloaders are still just glorified front-stuffers of centuries past. Sure, our expectations should be a higher standard, but as with any firearm regular practice is necessary to develop and maintain shooting skills. If you dedicate the time and commit to finding the right load combination your rifle likes,

you might just surprise yourself with a sub-MOA muzzleloader easily capable of making shots out to 200 yards.

Takeaway Message:

Don't feel like you need to prioritize improved velocities at the expense of accuracy. It's not worth sacrificing precision for a minor increase in velocity as bullet design and construction are more influential in downrange ballistics. As you've surely realized, there is nothing complicated about this process. The difficulty is the time investment required to see the progression through to completion. Consistency is of the utmost importance. The minor variances within each step can be tailored to suit your preferences so long as they are consistent from one shot sequence to the next. Good luck and good shooting!

References:

- [1] Allan, D. (2018). *Solve Your Modern Muzzleloader Accuracy Problems*. Retrieved from <http://www.backcountrychronicles.com>
- [2] Armbrust, T. (2007, April 29). *Shotshell Primer Substitutions Affecting Patterns*. Retrieved from <http://www.armbrust.acf2.org>
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- [5] Wakeman, R. (2010). *Thompson/Center IMPACT .50 Caliber Muzzleloader*. Retrieved from <https://www.chuckhawks.com>