What about PZP?

(porcine zona pellucida)

(From http://www.fort.usgs.gov/wildhorsepopulations/contraception.asp)

"From 1978 into the 1980s, the BLM worked through a series of research contracts focusing primarily on development of a chemosterilant for wild stallions. In the early 1990s, research turned to silicone implants in mares in an effort to achieve fertility control. Although both routes produced fertility control, they had too many drawbacks and were eventually abandoned.

"In light of these problems and the continuing need for some form of contraception, in 1991 the scientific community identified the desired characteristics for an ideal wild horse fertility control agent.

"Specifically (according to the USGS), the agent should:

- Be at least 90% effective.
- Be capable of administration by remote delivery.
- Either be immediately reversible, or its effects should passively wear off.
- Be safe to pregnant animals.
- Not pass through the natural food chain.
- Be inexpensive.
- Have no debilitating side effects on the health of the horses.
- Not influence the social behavior of the horses."

Why Spring Creek Basin mustangs?

What makes the Spring Creek Basin herd an ideal candidate for an annual fertility control program, such as is done at Pryor Mountain Wild Horse Range, Little Book Cliffs Wild Horse Range and McCullough Peaks Herd Management Area (BLM), as well as at Assateague Island, Shackleford Banks (National Park Service), Corolla Island (combination private, city and state agencies) and other herds, as well as animals in zoos and preserves around the world?

- The horses are documented by extensive photography and notes.
- Most of the horses are approachable (within darting distance).
- The documenter is trained to handle PZP and to dart.
- BLM urges pursuit of "more aggressive fertility control strategies to slow the reproduction rate of wild horses and burros on public lands," per BLM Director Bob Abbey at the "Summit of the Horse," Jan. 4, 2011, Las Vegas.
- BLM encourages partnerships with volunteer groups.
- The national horse market is depressed, mustang adoption equally so.

Pros

Safe

- Reversible, not permanent.
- It's a protein and does not pass through the food chain.
- Healthier mares (that are not stressed by producing and nurturing a foal year after year after year) produce healthier foals and live longer with greater quality of life.
- Neither PZP nor PZP-22 affect a fetus a mare may be carrying. PZP simply blocks fertilization of the mare's egg by the stallion's sperm as an immune system response.

Effective

Has shown 95% efficacy on Assateague Island, where it has been used for 24 years. In biology, no treatment will be 100% effective (see also reversibility above).

Cost-effective

One dose of PZP = $25;
adjuvant dose = $1;
dart = $2.15;
per-mare cost = >$30.
(PZP is delivered by remote dart.)

- Documenter TJ Holmes is certified by The Science and Conservation Center, ZooMontana, Billings, Mont., to handle, mix and apply PZP, and volunteers labor.
- With money saved using PZP, expensive, traumatic helicopter roundups can perhaps be replaced by more humane bait trapping and fewer horses removed less often.

Cons

- After 6-7 years of consecutive use in particular mare, may cause permanent sterilty in that mare.
- Seen by some as a "con," some mares develop a small abscess or granuloma at the injection site. This is not caused by PZP but likely by dirt on the coat being pushed into the skin during darting. All have been observed to heal over a short period of time.

Pros

Handling

No handling of the mare – no roundup – is necessary. Administration is effected by remote darting.

Genetic viability

PZP allows more horses to contribute their genetics, as opposed to roundups and removals and/or sterilization of mares or gelding of stallions, which completely remove genetics that may have contributed to herd viability.

Social

Most scientific research, as well as observations by people darting with native PZP, report no adverse effects on social behavior. This is in contrast to the massive social unrest that follows mass roundups and removals of socially-bonded wild horse families.

PZP vs. PZP-22

- PZP is the native form of the porcine zona pellucida vaccine (basically, made of pig ovaries) and is delivered first with a primer, then with an annual booster that encourages the mare's immune system to view stallion sperm as "foreign," hence its designation as an "immunocontraceptive."

- PZP-22 is simply a pelleted version of PZP, intended to act for 22 months, or two breeding seasons (given a mare's 11-month gestation).

- PZP has more than 30 years of research data behind it. It is "experimental" only by designation of the Food and Drug Administration, which means it is not commercially available. No one makes money from PZP.

- The first two long-term studies (by the Humane Society of the United States with a grant by the Annenberg Foundation) of PZP-22 are ongoing in Sand Wash Basin Herd Management Area (northwestern Colorado) and Cedar Mountains Herd Management Area (western Utah). Preliminary results from those studies indicate that PZP-22 does not act for a full 22 months and that it has a very narrow window of efficacy. Administered in October 2008 in SWB, the vaccine has proved not as effective as that administered in December 2008 in Cedar Mountains. PZP-22 (funded by NMA/CO) administered to five mares at the August 2007 Spring Creek Basin roundup proved all but ineffective. One mare alone has not foaled since July 2008.

- PZP-22 in pelleted form is being tested for remote darting, but the most effective way to administer it at present is by roundups, expensive and traumatizing. And to be most effective, it apparently must be administered between about December and March, and at least every two years.

When you ask for facts about PZP/PZP-22, do ask the same about the alternative! The alternative to fertility control is, of course, roundups and removals. Consider:

Genetic: Removals are more damaging to the genetic pool of a herd than anything else. The horses most likely to be removed are the younger horses, those considered most "adoptable." Those horses will NEVER have the opportunity to contribute their genetics. PZP/PZP-22 is reversible, allowing contribution by every horse.

Social: Removals also are devastating to this intensely familial-bonded species. Slower population growth, effected by fertility control, prevents frequent widespread removals and severing of social/familial bonds.

Economic: Forty percent of BLM's budget goes to the Wild Horse & Burro Program. Seventy-five percent of the Wild Horse & Burro Program's budget is for roundups and holding. Millions of dollars. The cost of native PZP is less than $30 per mare per year. Volunteer darters provide intimate knowledge of their horses and free labor.

PZP resources

The following websites and video may increase your knowledge of PZP. I particularly like the straight-forward, easy-to-read series on the Pryor Wild blog (first listing), which also gives a brief history. It is being updated, but for now it is in a blog format, so click through the "Older Entries" links to get to the beginning, then read each "chapter." (Also note the scientific research references with each post.) In no particular order:

- **http://pryorwild.wordpress.com/category/pzp/** – "It is becoming more ... common to hear about wild horse populations managed through fertility control, especially fertility control with the immunocontraceptive (PZP)." Matt Dillon, who published this series, is director of the Pryor Mountain Wild Mustang Center in Lovell, Wyo., and author of the Pryor Wild blog.

- **http://pryorwild.files.wordpress.com/2010/08/pzp-qa-third-edition-june-1-2010.pdf** – "Immunocontraceptive Reproductive Control Utilizing (PZP) in Federal Wild Horse Populations"; contributors: Jay F. Kirkpatrick, Ph.D.; Allen T. Rutberg, Ph.D.; and Linda Coates-Markle; compiled and edited by Patricia M. Fazio, Ph.D.; last updated June 1, 2010.

- **http://www.pzpinfo.org/pzp.html** – What is PZP and how does it work?

- **http://www.zoomontana.org/science-and-conservation-center/** – Dr. Jay Kirkpatrick is director of SCC; PZP is manufactured there for animal species around the world; PZP training is conducted there.

- **http://www.wildhorsepreservation.com/resources/fertility.html** – "Managing Wild Horses Through Fertility Control," by Jay F. Kirkpatrick, Ph.D., Director, The Science and Conservation Center (Billings, MT)

- **http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-090.html** – The purpose of this Instruction Memorandum is to establish guidance for population-level fertility control field research trials.

- **http://www.mywyoming.org/video/1y8d9ofce8** – Wild Horse Fertility Control with Dr. Jay Kirkpatrick, filmed July 31, 2009, at the Lovell Community Center; ~90 minutes; well worth watching.

Please contact me (TJ Holmes) with any questions: mtbgrrl@fone.net.
The above resources also are linked in the blog roll on my blog, Spring Creek Wild: http://springcreekwild.wordpress.com/