

## 2020 Vision & Beyond: Montana Soil Health Symposium

(Billings) Approximately, 400 natural resource professionals (land owners, land managers, conservation district administrators, board of supervisors and state / federal agency employees) attended and participated in the two-day symposium sponsored by the Soil & Water Conservation Districts and Montana's USDA Natural Resource Conservation Service.

Montana's State Conservationist Tom Watson with the USDA Natural Resource Conservation Service provided opening remarks on the importance of soil health to ensuring that our range and farm lands are healthy, productive and sustainable for agricultural operations. Watson congratulated this generation of agricultural producers for taking time out of their busy schedules to learn about innovation, regenerative ag practices to sustain and grow lively crops and range lands.

Gabe Brown, author of *Dirt to Soil, One Family's Journey into Regenerative Agriculture*, was one of two key note speakers. Gabe and his family operate a 5,000 acre farm / ranch near Bismarck, North Dakota. Gabe is a pioneer in the current soil health movement that focuses on regeneration of our resources. Dr. David Montgomery, University of Washington, an internationally recognized geologist and professor of Geomorphology, shared information on landscape evolution and effects of geological processes on ecological systems.

Professor Montgomery said, "We have 7.2 billion people on the planet and better than enough agricultural production to exceed global population and feed 10.2 billion. This has resulted in low cost foods and it is evident that we need more food with higher nutrient density. High quality food is the wave of the future; through regenerative agriculture, our agricultural producers can meet the current and future demands of our country's and worlds food needs while maintaining our soils and lands. It is possible to grow healthy foods and sustain our natural resources!"

Montgomery said, "Burning through years of healthy soil formation and eroding, removing soil fertility began with the introduction of the plow and years of tillage-based practices. Several society's demise as far back as days of Mesopotamia began with soil degradation. However, there is hope with regeneration and combining mineral matter and soil mass; in a matter of a few years' restoration, reintroduced fertility can occur in our lands."

Gabe Brown, a keynote, author, consultant and North Dakota farmer, said, "Overgrazing and under stocking result in desertification. Management makes all the difference in how we generate and regenerate our soils. It's important to diversify crop rotation every three years, cycle water efficiently. Keeping soils sustainable with mycorrhizal fungi and biology build healthy soil aggregates."

Brown shared six key principles that were solid take-aways for symposium attendees:

1. Spraying. Killing insects such as lady beetles through spraying removes the cycle of healthy crop development.

2. Removing carbon from our fields is not a healthy sustainability of our soils in our fields and our crop production.
3. Over-grazing causes desertification; utilizing healthy grazing and then providing lands a season of rest is a must.
4. Mono-culture of grain crops (grains and alfalfa) is a must. Poly culture of cash crops with some inter-seeding is best for healthy croplands.
5. Maintaining living roots in soil as long as possible and always providing opportunities to cycle carbon helps the regenerative process.
6. Livestock integration is a must; nature doesn't form without animals and insects.

Seven break-out sessions including Inter-Cropping, No-Till Systems and Equipment Challenges, Direct Marketing and Enterprise Stacking, Winter Grazing, Management Improvement with Soil Health Testing, Cover Crops, Bale Grazing and Pollinators provided symposium attendees a diverse set of informational and educational.

Several of the symposium panelists had helpful tips, thoughts on how they began their paths to implementing regenerative agriculture:

- Don't be afraid of what your neighbors think; just because they and/or your family have tilled the land for years, farmed, sprayed, etc... doesn't mean there isn't a more efficient way to farm, sustain your lands and do what's right for your operation beginning today,
- Multi-year integration of raising more grain with cover crop and cattle grazing in interim years,
- Start with a plot or two to test your cover crop application before fast tracking to 100% of the operation,
- Coordinate NRCS's soil sampling and study your soils and yield data to know what changes in practices can result in improvement,
- Utilize the conservation district's no till drill to help stop erosion and implementing range monitoring practices,
- More bushels don't always equate to more profit; reducing overall expenses of fuel with extra farming, herbicides and pesticides, and implementing cover crops often improves the bottom line,
- Holistic management for our planet, profit and people makes for the best result,
- Soils will never become sustainable as long as high rates of synthetic fertilizers are used; implement cover crops to keep the moisture, work with your environment for best production while maintaining soil health and break the cycle of dependency on chemical application and tillage

The future of soil health and sustainable agriculture in Montana begins with one land owner at a time being forward thinking on farm and ranch management practices that keeps our farm lands and range lands healthy. It's important that as stewards of the land that we leave the resource better than we found it and regenerate the land not just mine it for one season's crop or over-graze the range for a season of cattle weight gain.

If you missed the 2020 Soil Health Symposium, plan now for the 2021 symposium. Learning opportunities through information and education are in the planning stages. For more information on soil health, technical resources and conservation funding, contact your local conservation district, Soil & Water Conservation Districts and/or USDA Natural Resource Conservation Service in Bozeman and / or your local USDA Service Center.