



July 2, 2021



To: Karen Molchanow
State Board of Education
Re: Comments on the proposed PA standards under 22 PA. Code: Chapter 4

By email: ra-stateboardofed@pa.gov

Pasa Sustainable Agriculture is a nonprofit based in Pennsylvania with 7,500 members who are active farmers and/or supporters of sustainably grown food and fiber. We developed, and now administer, three of the only accredited formal agricultural apprenticeship programs in the state - the Dairy Grazers Apprenticeship program, the Diversified Vegetable Growers apprenticeship program, and the Diversified Vegetable Growers pre-apprenticeship program.

Pasa's combination of on-the-ground training, research, education and policy looks to the needs of food security now and into the future. A recent 2019 report by Team PA found that more than 75,000 agricultural jobs will need qualified candidates over the next 10 years in the Commonwealth. For a variety of reasons - including the lesson the recent pandemic has taught us, that food security is not a given - we believe the proposed PA Education Science & Technology and Environment & Ecology standards fall well short of requirements to educate our students about the critical ways we intersect with agriculture, science and agriculture, and ecology and agriculture, as well as preparing future farmers and food workers to fill these essential jobs. Early exposure to where our food comes from, how it is produced, and how it affects the environment around us should be a mainstay of - and not an afterthought or simply missing from - these statewide educational standards.

Our comments are provided to address and augment three areas identified as having one or no connection to the 2002 standards: Environmental Health - Biological Diversity; Agriculture and Society - Society Needs, Agriculture Science, Agriculture Systems, Technology; and Integrated Pest Management - Effects Benefits and Impacts, Health Risks, and Management practices. They are offered as augmentations at every scholastic level - elementary, middle school, high school. and vocational.

1. [Environmental Health – Biological Diversity](#)

Twenty-five percent of Pennsylvania's land base is under agricultural production. With the addition of forests providing woody materials production, that figure rises to 85 percent. Any discussion of biodiversity in the state must include a discussion of why and how biological diversification can be increased on farmland, in particular. Trends in commercial and industrial production over the past 50 years have trended toward farm consolidation and monocultural

crops, with adverse impacts to wildlife biodiversity, soil health, plant diversity, and ecosystem resilience. Additional standards should be included that address:

- A. Holistic approaches to increasing biodiversity on farms
- B. Agriculture and conservation practices - opportunities and challenges
- C. Managing for healthier soils - including how soils function in the ecosystem.

2. Agriculture and Society – Society Needs, Agriculture Science, Agriculture Systems, Technology

The proposed revised Science & Technology standards, and even the Environment & Ecology standards, are very focused on technology. Agriculture has seen many advances in technology, but many aspects of farming and food production go well beyond the latest technology.

Additional standards should be included that address:

- A. The lifecycle of food production
- B. Composting and recycling
- C. Eliminating food waste - a significant source of greenhouse gases - with an emphasis on public and private efforts like PA's PASS program, gleaning, and other methods
- D. Agriculture and energy use, energy production, energy conservation and alternative energy options

3. Integrated Pest Management – Effects Benefits and Impacts, Health Risks, Management Practices

Integrated pest management is a growing field that has been evolving rapidly since the 2002 standards were developed. With the growing recognition that chemical fertilizers are doing immense environmental harm to wildlife, aquatic life, water quality and air quality, the following additional standards should be included:

- A. Cultural and biological controls of pests
- B. Role of organics in agricultural production and consumer choice

Pasa appreciates the opportunity to provide these comments. We are available to provide any additional information, explanation or examples as required. Pasa contacts include:

1. Dan Dalton, Diversified Vegetable Growers apprenticeship programs director; dan@pasafarming.org;
2. Sara Nicholas, Policy Specialist; sara@pasafarming.org.