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1-18-2017

# Asthma in Vermont Dairy Farmers

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### Recommended Citation

Everett, Wyll T.; Close, Victoria Lauren; Merriam-Stelfox, Rebecca; Paladugu, Sravana; Reibel, Jacob B.; Russell, Ruby L.; Ryan, Rebecca; and Kaminsky, David, "Asthma in Vermont Dairy Farmers" (2017). *Public Health Projects, 2008-present*. 239.  
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# Asthma in Vermont Dairy Farmers



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## Background

- ❖ In 2014 the prevalence of asthma adult Vermonters was 11% while nationally the prevalence was 9%. (1)
- ❖ In 2014, 66% of Vermonters with asthma reported having work-related asthma. Depending on occupation, the asthma prevalence among Vermonters ranged from 2 - 22%. (2)
- ❖ In 2016, 5.4% of Vermonters worked in agriculture (3), but the sample size of farmers in the VT BRFSS was too small to report an occupation-specific asthma rate. (1) These data emphasize the challenge of studying the health of farmers, most likely due to the time requirements of their job.
- ❖ Farmers have potentially significant exposure to organic dusts and toxic gases, placing them at higher risk for respiratory illness. (4)

### Project Goal

- ❖ To identify the rate of asthma in the owners-operators of Vermont dairy farms



## Methods

- ❖ A literature search was conducted encompassing a wide range of VT farming practices, risks, and lung health issues.
- ❖ A survey was developed and adapted from previously validated surveys, such as the BRFSS, to assess the prevalence of asthma in Vermont dairy farmers along with potential environmental triggers.
- ❖ Paper surveys were distributed at the Vermont Farm Bureau's Annual Meeting and Conference, county Farm Bureau meetings, local farmers markets, as well as through Cabot Creamery.
- ❖ Out of 309 distributed, we received 176 completed surveys for a response rate of 57%.
- ❖ 176 completed surveys were analyzed; 58 were owner-operators who solely participated in dairy production, an additional 39 were owner-operators who participated in dairy production and another type of farming for a total of 97 owner-operators who participated in dairy production.

## Results

- ❖ The prevalence of self-reported asthma was 21% among farmers involved in dairy production (n=97), 22% among dairy-only farmers (n=58), and 11% among non-dairy farmers. **See Figure 1**
- ❖ The majority of these cases were confirmed by a doctor, 90% in dairy farmers and 95% in dairy-only farmers.
- ❖ Figure 2 illustrates the most common respiratory illnesses reported by Vermont dairy farmers.
- ❖ Rates of Concurrent Lung Illness in Vermont Dairy Farmers  
In those *without* diagnosed asthma, 37% of respondents reported having some other lung illness.  
In those *with* diagnosed asthma, 83% of respondents were diagnosed with a concurrent lung illness.
- ❖ Of Vermont dairy farmers who did not report having asthma, 14% replied "yes" to experiencing symptoms of asthma in the past 30 days.
- ❖ Of Vermont dairy farmers with asthma, 79% report taking medications for their lung illness(es).
- ❖ 31% of dairy-only farmers who routinely participated in milking, prepping or cleaning bedding, or haying reported that one or more of these activities exacerbated their symptoms (n=29).
- ❖ Among all respondents, the prevalence of smoking was 6%.

Figure 1. Asthma rates in Vermont farmers; self reported and diagnosed by a doctor

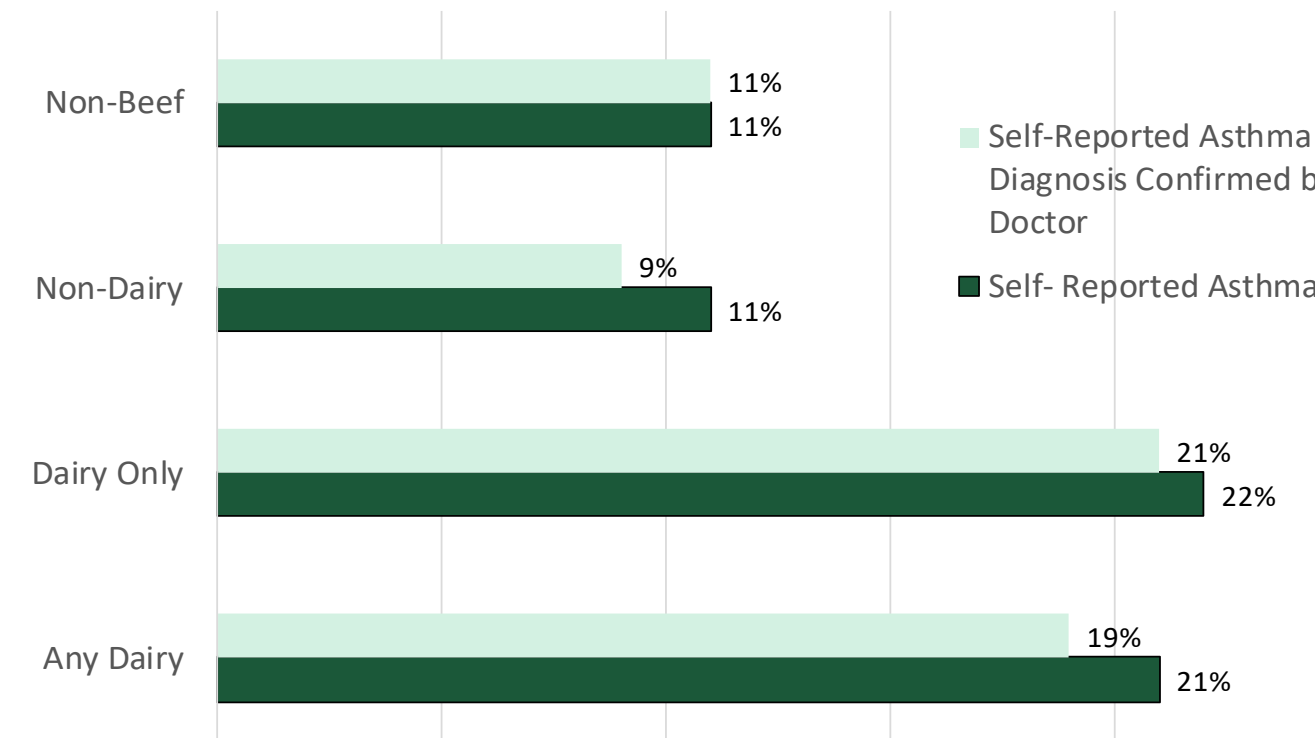
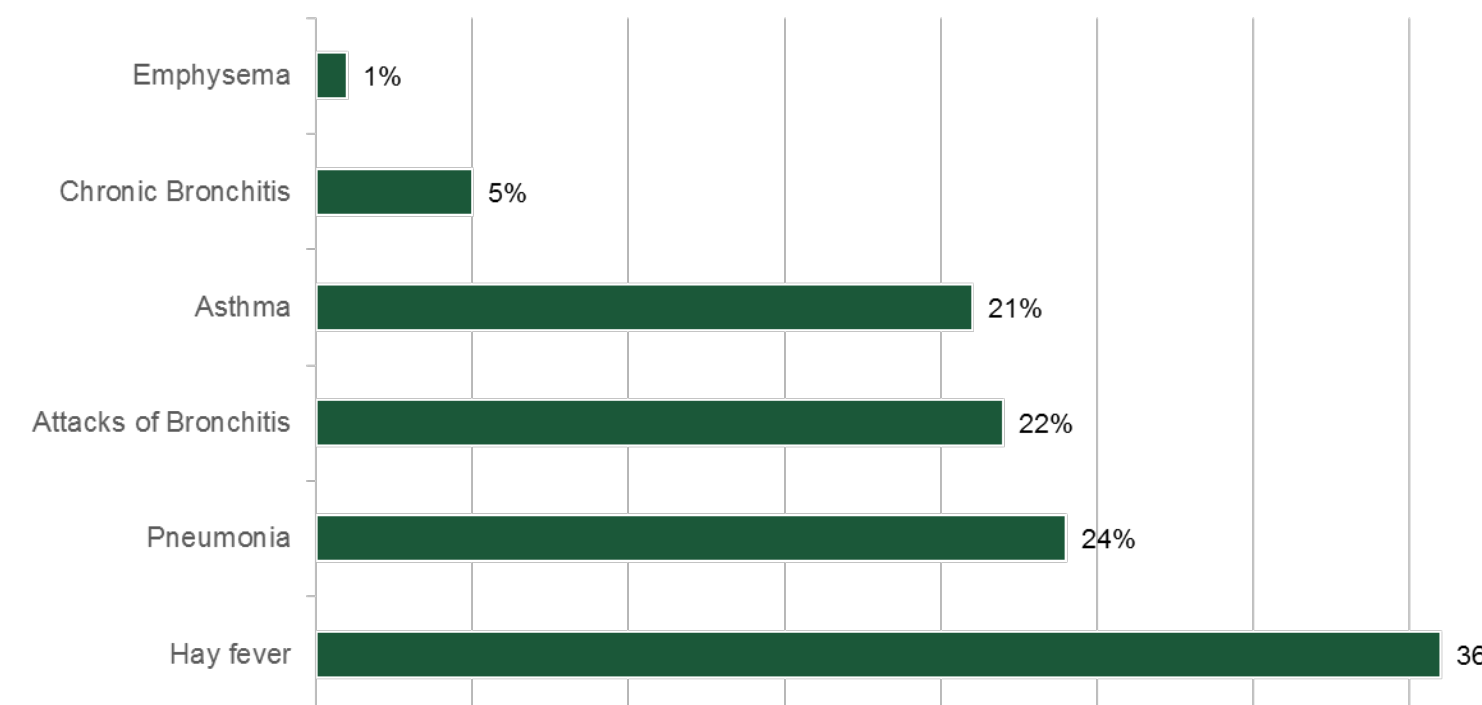


Figure 2. Prevalence of lung illnesses in Vermont dairy farmers



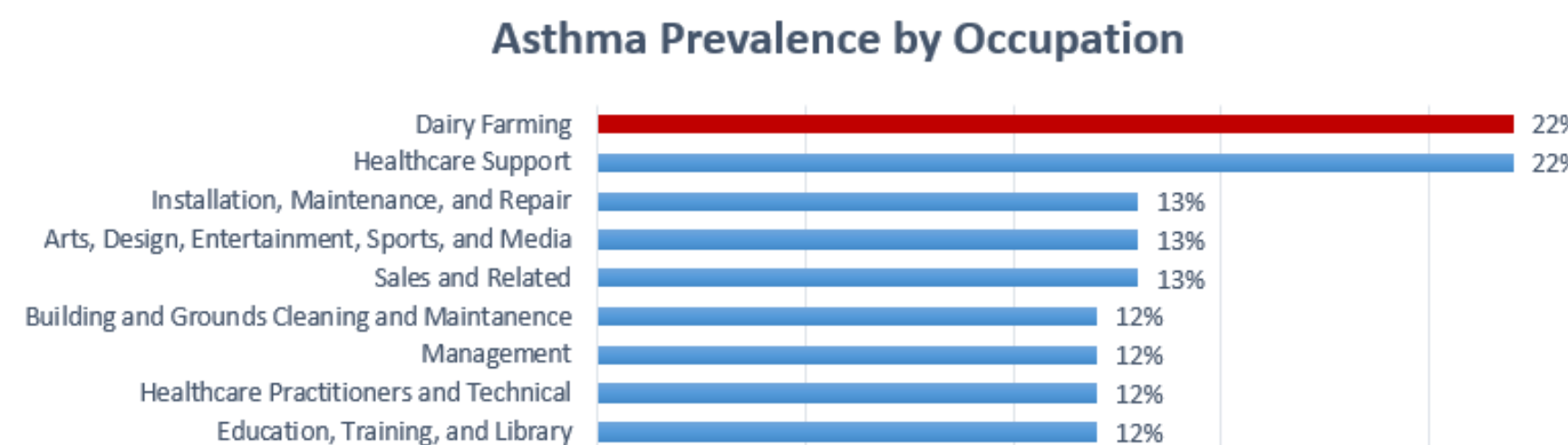
## Conclusions

- ❖ Previously, an occupation-specific prevalence of asthma was unavailable for farming in Vermont. Our novel data show that the asthma rate was 21% among Vermont dairy farmers and 22% among dairy-only farmers (Figure 3), rates equal to those found in Vermont health care workers and thus equal to highest reported prevalence in any occupation. (2)
- ❖ Our results suggest that the practice of dairy farming may increase the risk for asthma and warrant further study.
- ❖ Certain farming practices were associated with the exacerbation of respiratory symptoms in farmers diagnosed with asthma, which supports previous studies investigating respiratory health in farmers. (4;5)
- ❖ Potential limitations of our study include non-response bias as we did not achieve a 100% response rate, self reported data as opposed to physician diagnosed, and selection bias as much of our data was collected from convenient locations to which all farmers may not have access.
- ❖ Further research is necessary to understand the risks Vermont farmers face and if there is under-diagnosis of asthma in Vermont dairy farmers. Knowledge of these risks can be used to direct health care and preventative health measures for farmers.

## Selected References

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Figure 3. Based on our findings, we now add the prevalence of asthma in dairy-only Vermont farmers (red) compared to BRFSS 2014 data (blue) of other occupations in the state



When asked, one farmer explained how to avoid requiring medications for respiratory illnesses—  
“...no medications at all and I’m 64 and I drink raw milk everyday for 41 years and that’s the reason.”