presence of the major allergens, Can f 1 and Can f 2 and only 1 extract apparently contained both allergens.
**CONCLUSIONS:** Considerable variation exists in commercially prepared dog extracts both in protein concentration as well as the presence of the major allergens Can f 1 and Can f 2. Depending on the source of the manufactured dog extract, dog sensitive patients may be missed on routine skin testing, and, those receiving dog immunotherapy may not be obtaining full benefit as the relevant protein allergen may not be present in the vaccine. These results suggest the possible need for a standardized dog extract for diagnosis and treatment of the clinically sensitive, dog allergic patient.
**Funding:** United States Air Force

## 733 Effects of Climate And Flooding On Mold And Pollen Sensitization

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**RATIONALE:** Allergic rhinitis (AR) visits increased in our valley after the Red River Flood of 1997; therefore we investigated skin prick tests (SPT).
**METHODS:** 1628 AR patient SPT from our clinic between1995-2005 and 37 outdoor aeroallergens were studied. Variables analyzed include pollen and mold SPT sensitivity, patient home zip codes, flooded areas (GPS software), aeroallergen levels (NAB), meteorological conditions (http://crh.noaa.gov), river conditions (http://nwis.waterdata.usgs.gov), and *Fusarium* deoxynivalenol toxin (DON) levels from wheat and barley (North Dakota State University).
**RESULTS:** *Cephalosporium acremonium* (CA) mold incidences increased in a normal distribution, three years after the flood ($p<0.0001$). Reactions showed increased rates in zip codes adjoining the river $p=0.02$ and flooded areas $p=0.0001$, OR 1.3 and 1.2. River velocity and CA incidence correlated $r=+0.59$, $p=0.05$.
Yearly fluctuations in SPT results occurred with certain weed, grass pollen and mold spores ($p<0.05$). These also correlated with temperature and/or precipitation. *Fusarium* sensitivity correlated further with spore counts, DON and with local *Fusarium* epidemics on wheat.
**CONCLUSIONS:** We report expected fluctuations in mold, pollen incidences, and aeroallergen counts correlating with environmental changes, but only CA was associated with flooding. An organophilic soil saprophyte, CA thrived in farm fertilizers and river effluence then probably resulted in widespread growth, and sensitization. This novel report sheds new light on sensitization periods and on associations between molds, harvest, climate, and flooding with allergic respiratory diseases. Awareness, additional new research, informed choice of allergen for testing and treatment in certain farm, river and flooded ecosystems are important new implications.

## 734 Are There House-Dust Mites on Moldy Wall Surfaces?

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**RATIONALE:** Papers studying the distribution of house-dust-mites (HDM) have concluded that there are no mites on walls. However, moldy dwellings may include HDM because high humidity should favour both mold and HDM developments.
**METHODS:** 50 dwellings with a moldy wall surface at least equal to 50 $cm^2$ were included. Molds were identified using the paper-gummed technique. HDM were sampled, both on the moldy surface and 20 cm away from the external limit of the mold, by brushing a 25 $cm^2$ surface. The dust was collected in a Petri dish half-filled up with 70% alcohol. Following centrifugation, the residue was laid out on a slide and evaluated using a semi-quantitative scale.
**RESULTS:** On moldy walls, 46% of samples had no HDM, 22% had a 1+ result, 16% a 2+, 12% a 3+ and 4% a 4+. In non-moldy wall surfaces, results were equal to 94%, 6%, 0,0 and 0, respectively. The statistical difference between both distributions was highly significant ($p<0.0001$).
**CONCLUSION:** On most moldy wall surfaces, there are both molds and house-dust mites. Thus, HDM avoidance programs should include moldy surfaces.
**Funding:** Comité National de Lutte contre les Maladies Respiratoires

## 735 Acute Asthma with High Grass Pollen in Oregon

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**RATIONALE:** Oregon's Willamette Valley has very high grass pollen counts, reaching a high in recent years of 795 grains per cubic meter in June of 2003 at the Eugene National Allergy Bureau (NAB) site. There is an annual seasonal peak in severe allergies and asthma during the grass pollen season in May and June with increased admissions to the Emergency Department (ED) and Urgent Care (UC).
**METHODS:** Pollen counts and ED/UC asthma admissions during the grass pollen season of 2006 were prospectively quantified and correlated. Burkard volumetric spore traps were used at two certified NAB sites eight miles apart in the cities of Eugene and Coburg. The Eugene sampler was in a downtown location whereas the Coburg sampler was located in a rural location adjacent to the grass fields. Daily admissions to the ED and UC were provided by the major area hospital.
**RESULTS:** The 2006 quantitative grass pollen counts were comparatively parallel to, but higher in, Coburg (580-1,531 grains/$m^3$) than Eugene (200-650 grains/$m^3$), likely due to the proximity to the grass fields. Pollen counts at both sites had statistically significant correlation to peaks in asthma admissions ($p= <0.0001$) using a Pearson correlation. Six separate pollen spikes resulted in six peaks in ED and UC admissions.
**CONCLUSIONS:** Grass pollen counts vary significantly by location and samples from sites in an urban location may underestimate rural patient exposure. Very high grass pollen counts correlate with a significant increase in Emergency Department (ED) and Urgent Care (UC) visits for asthma.

## 736 IgE Reactivity to *Paecilomyces variotii* Antigens in Fungal Sensitized Patients

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**RATIONALE:** Exposure to *Paecilomyces variotii* can be extremely high in occupational environments and has been shown to be a risk factor for a number of allergic and invasive diseases. The purpose of this study was to determine the prevalence of sensitization to *P. variotii* in an atopic population from West Virginia.
**METHODS:** We evaluated 102 atopic patients for immunoglobulin E (IgE)-mediated hypersensitivity to fungi. In addition to our routine panel of skin prick test (SPT) reagents, patients were also tested to several indoor fungi including *P. variotii.* All patients had symptoms consistent with allergic rhinitis or asthma. The presence of specific IgE against *P. variotii* was additionally determined using immunoblotting.
**RESULTS:** Of the 102 eligible patients, 68% had at least one positive SPT to various aeroallergen sources. Overall, 21/102 (21%) patients were SPT-positive to at least one fungal extract. Of the patients with a positive SPT to fungi, 7/21 (33%) demonstrated sensitivity to *P. variotii.* One and two dimensional immunoblotting of *P. variotii* mycelial extracts revealed specific IgE against multiple antigens that ranged from 30 to 200 kDa. IgE reactivity was greatest towards 22 kDa, 33 kDa, 40 kDa, 46 kDa and 70 kDa antigens. Non-atopic serum was negative towards the *P. variotii* extract.
**CONCLUSIONS:** The prevalence of fungal sensitization to *P. variotii* was common in this cohort of fungal sensitized patients. Cross-reactivity among fungi may partially explain our results; however, the results indicate *P. variotii* may be an important species to monitor for both occupational and non-occupational fungal exposures.
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