



# Keeping bugs away

## What works and what doesn't

BY JANET WALLACE



As a gardener, I've always searched for ways to control pests. Besides slugs, aphids and Colorado potato beetles, I've constantly battled biting bugs, including mosquitoes, blackflies, deerflies, horseflies and ticks. These can turn enjoyable times into miserable experiences and make it harder to garden well. When, for example, I'm transplanting within a cloud of blackflies, it's challenging to give each seedling the attention it deserves. My focus is divided between tending plants, swatting bugs and trying to get the job done as fast as possible.

I've been leery of conventional bug sprays ever since I've witnessed them melting part of my binoculars. I don't think sprays with such a high DEET content are now sold in Canada but I still avoid DEET. I use the "natural" bug sprays, both commercial and home-made, that feature essential oils. These smell nice and are safe to use but aren't very effective. For years I have turned to clothing and netting to protect my body. Last year, I learned about two new types of products and thought it would be worthwhile to compare the options.

### Cotton clothing

My annual spring shopping tradition takes place in a used clothing store. I buy several long-sleeved, extra-large cotton dress shirts. I wear these over t-shirts tucked into cargo pants or jeans. My pant legs are tucked into socks. This way, any ticks that get on my boots or socks won't reach my skin until they have walked all the way up to my neck or underarms.

To keep bugs away from my head, I wear a big sun hat with a headscarf over it and around my neck. If I'm still getting bugs in my face, I pull the scarf forward on the sides (losing my peripheral vision) and apply a natural bug repellent on my face.

Blackflies and mosquitoes are attracted to dark colours so I choose white or light colours. Also, it's easier to see ticks on light-coloured clothing with no patterns.

**Pros:** The outfit is comfortable and protects me from light to moderate pressure from biting bugs and UV rays. It is cheap enough that I can have several work outfits and I reduce my environmental impact by re-using clothes.

**Cons:** It can be hot wearing so many layers. Certain insects, particularly the tiny, vicious mosquitoes that emerge in August, can bite through clothing, even denim!

### Nets

For decades, I have used bug netting in addition to the clothes described above. The cheapest option is a simple mesh hood. A large brimmed hat works best underneath (rather than a ball cap) because the hat's brim helps keep the mesh away from my face. There are hooded jackets made entirely of mesh and "deluxe" ones made of solid fabric except for the face, underarms and sides. Net pants are also available.

**Pros:** Very effective against flying biting bugs. Lightweight and cool. The hoods and



full-mesh jackets are inexpensive and available at most stores that sell outdoor clothing or camping supplies.

**Cons:** The mesh obscures your vision and leads to eye strain and headaches. I find black mesh is easier to see through when in bright sunlight, but in shade or around dawn or dusk, the light green or grey netting is better. The mesh is fragile and that limits what I can do while wearing the clothing. I've never bothered with the pants because I'm sure I'll rip them within minutes. Even with the deluxe jacket, I won't wear it while dealing with brambles, working with fencing or any chore that could snag the mesh.

## Rynoskin Total

Rynoskin Total creates an impermeable layer beneath your regular clothing. The skin-tight clothing is made of extremely thin but tightly woven nylon that protects you from ticks, mosquitoes, blackflies, deerflies and horseflies. The line includes a long-sleeved shirt, pants/leggings, socks, gloves and a hood that can almost serve as a balaclava. To improve durability, there are double layers of fabric in the hood, socks and gloves, as well as elbow and knee patches.

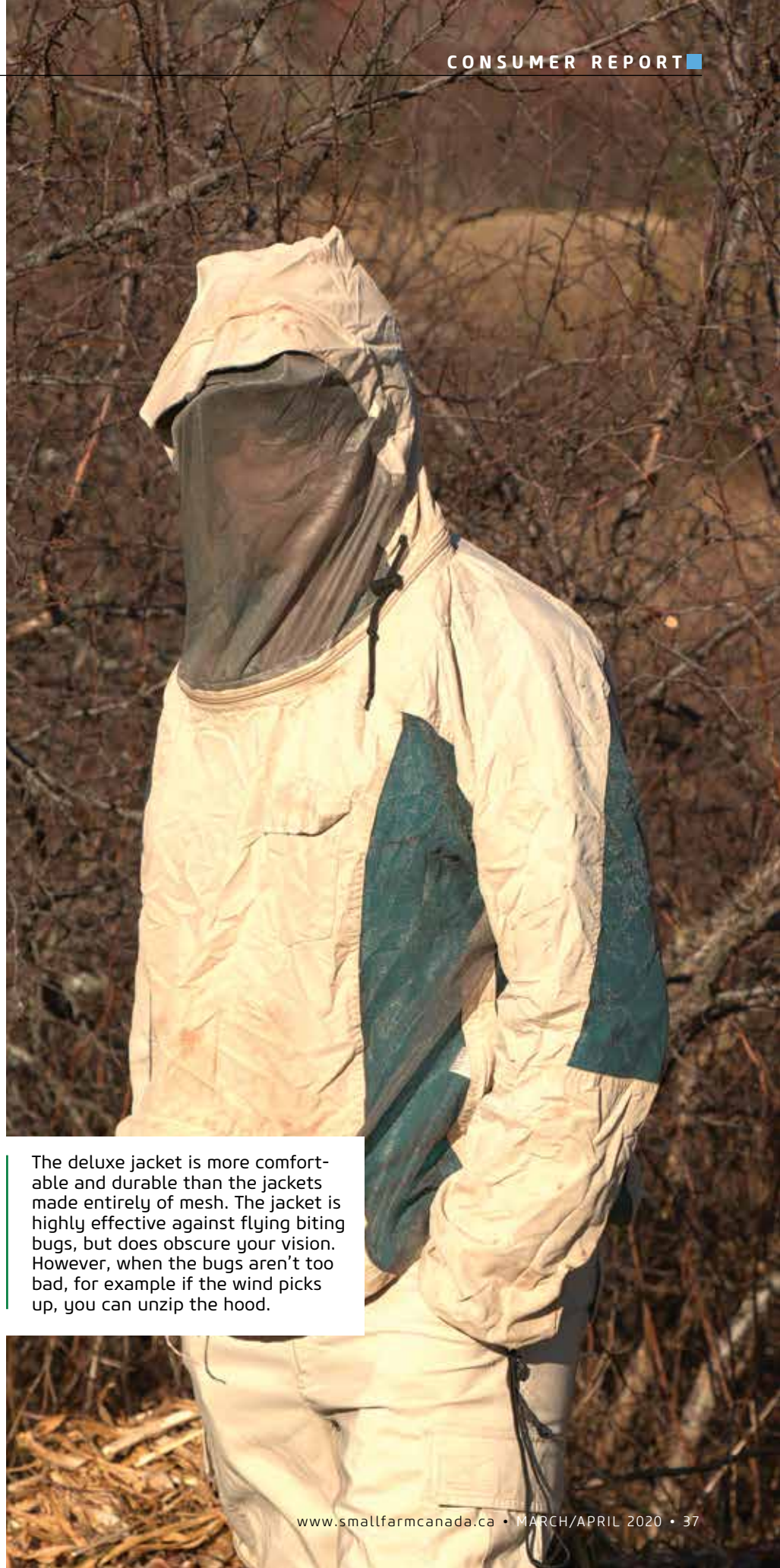
**Pros:** Completely effective against bites including from ticks. Surprisingly comfortable unless it was hot out.

**Cons:** Fairly expensive (from the point of view of someone who usually buys used clothes) and I wanted to wash it every day after wearing it. (In contrast, when I wear large work shirts over a t-shirt, I just change the t-shirt daily.) Could get warm.

## Permethrin-treated clothing

The game changer in insect gear is permethrin-treated clothing. The technology is supposed to work by confusing an insect or tick when it touches the clothing, causing the insect to fly or fall away. The clothing is said to last for 70 washes, considered to be the regular lifespan of clothing.

Permethrin is a synthetic version of pyrethrum, which is derived from chrysanthemums. Whereas pyre-



The deluxe jacket is more comfortable and durable than the jackets made entirely of mesh. The jacket is highly effective against flying biting bugs, but does obscure your vision. However, when the bugs aren't too bad, for example if the wind picks up, you can unzip the hood.

thrum is allowed in organic crop production, permethrin is not. The clothing itself has no chemical smell and I feel it's safer to wear the permethrin-treated clothing than apply a conventional insect repellent to my skin. The US EPA doesn't require any caution labels for the permethrin-treated clothing, which are considered as having "very low toxicity." In contrast, sunscreen and insect repellents are rated as "low" (rather than "very low") toxicity and require caution labels. The Center for Disease Control and Prevention (CDC) recommends wearing such clothing when travelling to areas where insects carry diseases, including Lyme disease, West Nile virus and the Zika virus.



Permethrin-treated clothing in general

**Pros:** works well against mosquitoes and blackflies. When my partner found it was buggy outside, he would put on his permethrin-treated hat, and often that alone solved the problem. In worse cases, he would wear the hat, shirt and pants and then wasn't bothered at all. I tend to attract bugs more than him and found I usually needed more than just the hat. There are a range of products available to cover all parts of your body. Some are fancy enough (for my rural dress code) to wear to an outdoor party or concert — places where the mesh bug hood just wouldn't fit in. It's also comfortable to wear clothes that aren't covering my face and I don't need to cover every inch of exposed skin.

|                      | Description  | Items   |
|----------------------|--|---|
| Used cotton clothing | Cover as much skin as possible with clothing                                   | Shirts, pants, headscarf and sunhat   |
| "Full" bug clothing  | Nylon screen-like clothing   | Head net, jacket, pants   |
| Deluxe bug jackets   | Thin cotton jacket with netting over face, under arms and along side of torso  | Jacket  |
| Rynoskin             | Thin, skin-tight clothing  | Hood (covers head and neck), long-sleeved shirt, leggings, socks and gloves |
| Marks Work Wearhouse | Normal outdoor clothing made from permethrin-treated fabric (mostly polyester) | Hat, shirts, jackets, pants, shorts, neck kerchief                          |
| LL Bean              |  | Hat, shirts, pants, shorts, socks   |
| NoBu.gs              | Normal outdoor clothing made from permethrin-treated fabric (mostly cotton)    | Hoodies, shirts, pants, socks, sleeves                                      |



**Cons:** Expensive.

The clothes work by confusing bugs and that has its downside. Although I had hardly any bites, the confused bugs were irritating as they tended to fly behind my glasses and into my mouth – but that was a small cost to pay for not being bitten.

It's not a magic bullet. Horseflies and deerflies weren't deterred as much as blackflies. The vicious tiny August mosquitoes were only moderately repelled. As for ticks, I tried the clothes in a tick-infested area. The tick pressure was lower when I wore the clothes, but a couple of ticks marched straight up the legs of my brand new pants in less than a minute.

I tried three brands of permethrin-treated clothing. The clothing is branded in two ways; the actual fabric has a brand



name, such as No Fly Zone or Insect Shield, but the garments are made by clothing companies, including WindRiver, LL Bean and NoBugs. I didn't notice any difference in the bug repellency but there were other significant differences.

**Mark's Work Wearhouse** (marks.com) sells a range of WindRiver/No Fly Zone clothing.

**Pros:** Available in Canada from stores and online. A variety of products are available. I found the jacket, long-sleeved shirt and hat to be the most valuable.

**Cons:** All of the clothing was polyester, and consequently hot and uncomfortable in summer weather.

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| Effectiveness  | Cost (approximate)   | Comfort  | Durability |
|--|--|--|------------|
| Fairly effective but your face is exposed and certain mosquitoes can penetrate cotton. Can reduce chance of tick bites on the body if pants are tucked into socks, shirt tucked into pants, etc., but the ticks can climb up to your head. | Cheap  |  Can be warm | Good       |
| Keeps bugs away from face but bugs can land on the jacket and bite through the holes.  | \$20CAN and up per item  | Cool and comfortable   | Poor       |
| Effective  | \$45CAN and up   | Fairly cool  | Good       |
| Highly effective against all biting insects, including ticks, with the exception of the exposed parts of your face.  | In US\$. Shirt and pants each: \$46; socks, hood and gloves each \$23                              | Tight, warm but still fairly comfortable   | Good       |
|   |  | Hot and stuffy in hot weather (didn't breathe); otherwise good                                 | Good       |
|  | In US\$. Shirts: \$30-100; pants: \$100; hats: \$30-40; hoodie/jacket: \$50-90; socks: \$30/2-pack | Comfortable except for the polyester items and thick socks in hot weather                      | Good       |
|  | In US\$. Shirts: \$30; pants: \$35-50; hoodie: \$30; hats: \$15; sleeves \$13; socks: \$10         | Very comfortable   | Good       |



## Insect Shield

**LL Bean** (llbean.com) sells a variety of items of No Fly Zone and clothing.

**Pros:** Great variety of clothing. High quality products.

**Cons:** At the time of printing, LL Bean could not ship these products to Canada but this might change soon (and meanwhile can be shipped to a U.S. address). Expensive.

**NoBu.gs** (www.nobugsclothing.com) produces clothes using the Insect Shield fabric and sells these online.

**Pros:** The NoBu.gs pants, socks and hoodie were very comfortable. The lightweight clothing is made with cotton and rayon. Even though the material is thin, it seems as durable as the thicker polyester clothing from the other two sources. The hoodie has “thumbholes,” reinforced slits in the extra-long sleeves. These create a bug-proof seal when you hook your thumb through the hole and put on gloves. NoBu.gs “sleeves” are another ingenious product. The nylon-spandex sleeves are snug but not uncomfortably tight and have thumbholes. They are marketed as keeping you cool due to the moisture-wicking properties of the fabric but I find the main advantage is that I could get away with wearing a short-sleeved shirt (rather than a long-sleeved one) when I had the sleeves on.

**Cons:** Expensive, available only through mail-order, and fabric is thin and lightweight.

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Columnist Janet Wallace tries on products from Mark's Work Wearhouse.





## Conclusion:

The pyrethrin-treated clothing is now part of my gardening gear, particularly the hats. I only wore my bug netting once last year, compared to wearing the net hood or jacket most days in the spring and frequently in the summer and fall. I was far more comfortable in the garden.

Still, I don't want to spend a fortune on gardening clothes so will continue with my layers of used clothing along with the treated hat on cool days with moderate bug pressure. When there are more bugs, I'll wear the long-sleeved shirt, jacket or a short-sleeved shirt with the sleeves, and maybe use a natural repellent on exposed skin.

When I go into the woods or in areas with many ticks, I'll wear the socks and pants or the whole Rynoskin outfit under my clothes.

Overall, I was pleased with the new products and look forward to gardening while protected from bugs but without having to see the world through bug netting.

*Disclaimer. I bought some items of clothing and others were given to me for the trial. This did not influence my opinions. The trial was conducted from May to October on two farms in New Brunswick, as well as visits to other farms in the Maritimes.*



NoBu.gs hoodie with Mark's Work Wearhouse cargo pants. The hoodie includes a handy thumbhole

