

recent and comprehensive U.S. data on hogs, the best available data is that provided by a Canadian National Survey, which FSIS believes to be adequate to establish a baseline for *Salmonella* applicable to hogs in the U.S. In the Canadian survey, *salmonellae* were isolated from 17.5 percent of the pork carcasses sampled.

The Canadian study also reported a *Salmonella* frequency of 69.1 percent of the turkey carcasses sampled. However, several U.S. surveys had conflicting results. A study conducted in 1979 showed 6.3 percent of the 79 turkey carcasses sampled were positive for *Salmonella*. Another U.S. survey compared *Salmonella* prevalence in three different establishments. The turkey carcasses positive for *Salmonella* were 13 out of 40 samples (32.5 percent), 6 out of 39 samples (15.4 percent), and 8 out of 40 samples (12.5 percent). Finally, an industry survey conducted from 1987–1988 showed a 15 percent frequency of *Salmonella* on turkey carcasses from the 25 plants that were sampled. The Agency believes these U.S. industry surveys to be the most representative of current conditions and is tentatively proposing to use the figure obtained from the U.S. industry surveys as the proposed baseline for *Salmonella* on turkey carcasses.

The Agency has no data upon which to establish baselines for the other species of food animals subject to mandatory inspection. As such, it is not proposing pathogen reduction target levels for minor livestock species—sheep, lambs, goats, equines—or for minor poultry species—ducks, geese, and guineas—at this time. The minor livestock species together comprise 4–5 percent of all livestock slaughtered, and the minor poultry species comprise only a fraction of 1 percent of domestic birds slaughtered. Assuming that the public risk of foodborne illness from these animals is comparably small, FSIS has decided to focus this rulemaking on the major food species, and defer rulemaking on these minor species. Comment is welcomed on whether FSIS should include these species in its testing program and, if so, on what basis it should do so.

FSIS recognizes that the data currently available to the Agency for determining the current baseline and the appropriate interim target for reduction in *Salmonella* incidence are limited. FSIS is also aware that many meat and poultry companies have been conducting microbial testing, in some cases for many years. The Agency believes that the industry possesses a significant body of data that would help

better define the current baseline levels in various products prior to making final decisions on these issues. FSIS strongly encourages the industry and all those who possess relevant data to submit those data to the Agency in response to this proposal and to assist the Agency in adopting appropriate baselines as the reference points for pathogen reduction.

FSIS is also considering and invites comment on alternative approaches to identifying baselines against which pathogen reduction would be measured. One alternative would be to require the use of pathogens other than *Salmonella* as the target organism for certain products. For example, it could be argued that *Campylobacter jejuni/coli* occurs at a greater frequency in poultry than *Salmonella* and as such would be a more pertinent target pathogen. Likewise, according to the available FSIS baseline survey data, beef carcasses have a relatively low incidence of *Salmonella* contamination, suggesting the possibility that other pathogenic microorganisms, such as *Campylobacter jejuni/coli*, might be preferable target organisms for pathogen reduction. FSIS would be prepared to adopt such alternatives if the comments received on this proposal demonstrate that alternative organisms would provide a more effective basis for achieving measurable pathogen reduction in the near term.

Another alternative, discussed further below, would be to use the current performance of a specific establishment as that establishment's baseline for pathogen reduction in lieu of a national baseline.

FSIS also is interested in receiving data showing any correlation between factors other than the species of slaughtered animals and the incidence of pathogenic bacteria. For example, there are suggestions that old animals (e.g., spent hens and culled cows) are more likely than younger animals of the same species to harbor pathogenic bacteria and should be addressed separately.

6. The Interim Targets

FSIS is proposing that each establishment, at a minimum, achieve process control that will bring their incidence of *Salmonella* contamination below the current national baseline incidence of *Salmonella* found on that product within two years of the effective date of this proposed rule.

The baseline levels were chosen as a basis for initial targets in part because they are by definition averages that reflect a distribution of levels among a broad range of establishments. Some

establishments have incidences of contamination above the national baseline, while others are achieving rates of contamination below the national baseline. FSIS believes that it is reasonable and feasible to require, as an interim pathogen reduction measure, that all establishments control their processes so that their *Salmonella* incidence is no greater than the current national average.

FSIS is also considering a requirement that, for one or more species, the target for pathogen reduction be some percentage reduction in *Salmonella* below the national baseline, such as a 25 or 50 percent reduction. This option is suggested by statements made by members of industry that many establishments already are achieving a prevalence of contamination well below FSIS's estimated national baseline incidence of *Salmonella* contamination using currently available methods and technologies. In the case of poultry, for example, some companies are reportedly achieving a frequency of occurrence of *Salmonella* contamination as low as 5 percent or less, well below the tentatively identified baseline for broilers and turkeys. The principle underlying FSIS's effort to establish appropriate interim targets for pathogen reduction is that establishments should be moving to adopt process controls and production practices that the industry itself has demonstrated in actual practice are available and effective for reducing the incidence of contamination with pathogenic microorganisms. If reductions 25 or 50 percent below the national baseline are reasonably achievable in the near term for a particular species, all companies should work to achieve them. At the final rule stage, FSIS will adopt specific percentage reductions below the national baseline to the extent they are supported by the administrative record developed in response to this proposal.

FSIS also invites comment on the appropriateness of the proposed two year time period for reaching the interim target following adoption of the final rule. Two years allows ample time for establishments to determine their current performance through the microbial testing FSIS is proposing and implement process controls and interventions that are already available. FSIS may determine on the basis of comments that different time periods, shorter or longer, may be appropriate for one or more species, depending on what is feasible for that species and on the degree of pathogen reduction FSIS adopts as the target. FSIS invites comments on these issues.